## 5-AVUMG-9 (PART 3 OF 3)

Table 8-2 Local & Regional Plan Policies vs. IRW	VM Plan Strat	egies, Al	B 303	0, IRWM P	lan Guid	lelines, 8	& Statewi	de Prio	rities (	conti	inued)																				
	Water Supply	Water Quality	Flood Mgm1	Environmental La Resource U Management M	and Ise AB 3030 ( Igmt.	Guidelines				IRWM Pla	an Program Preferences	St	tatewide Prio	rities		W	Water Supply Managem	ient Objectives			Water Qualit	ty Managemen	nt Objective:	;		Flood Mgı Objective	mt. s Env. Mg	mt. Obj. Lan Obj	d Use Manaç ectives	gement	
Local and Regional Plan Policies	zer SupplyReliability oundwaterManagement aer Conservation aer Royching ater Banking & Conjunctive Use ported Water	nace surage ater Transfers sadination are Ubairty Protection and Improvement m-Point Source Pollution Control	ater and Wastewater Treatment ood Management	an water capture anomalogement system Restoration wronmental and Habitat Protection and Improvement creation and Public Access etables than terment and Greation	no use Paining atesched Planning e control of saline water intrusion. entification and management of wellhead protection areas	or recharge areas gulation of the migration of contraminated groundwater. e administration of a well abandomment and well destruc- tingation of conditions of overdraft.	plenishment of groundwater extracted by water producers. mitoring of groundwater levels and storage. clintaring onjunctive vegoerations. entification of well construction policies.	reconstruction of period perio	guacory agences. review of that use plans and coordination with land use anning agencies to assess activities which create a reason- le risk of groundwater contamination.	clude integrated projects with multiple benefits. pport and improve local and regional water supply lability.	nomin, include septeditionsly and measurably to the long-term tainment and maintenance of water quality standards. minate or significantly reduce pollution in impaired arters and sensitive habitat areas, including areas of special ological significance. Udde sale dimking water and water quality projects that red isadvantaged communities.	Ude groundwater management and recharge projects at ale located 1) in San Bernardinoo Narselée countes, 2) dide of thes service area of the Merropolitan Water District Southern California; or 3) within one mile of established distribution and commercial evelopment.	uce contract concerent water users or resource water rights plementation of TMDLs that are established or under velopment. plementation of Regional Water Quality for those and	are sheet management min arve via press plans, and licies. m- point Source Pollution Plan.	plementation of recommendations of the floo dplain anagementrask force, desailnation Task force, recycling task r.co of State species recovery plan. dess servironmental listice concerns.	sist in achieving one or more goals of the CALFED Bay-Delta ogram.	wide reliable water supply up meet the Region's expected mand between now (2010) and 2035. A contex (73, 680 hz) strain 2003. The second supply d demand in average years by providing new water supply of reducing demands, zatring 2009. To reduce the reserve (56,060 to 57,400 AFY) to supple- rait veedage conditions supply to meet demands during	igle-dryyaar conditions, Starting 2003 wide adequate reserves (0 to 62, 000 AFY) to supplement erage condition supply to meet demands during multi-dry ar conditions, starting 2009.	tablish a contingency plan to meet water supply needs of the gion during a plausible disruption of SWP water deliveries. monstrate ability to meet regional water demands thour receiving SWP water for 6 months over the summer June 2010.	abilize groundwater levels at current conditions. anage groundwater levels at current the basin such that a year moving average of change in observed groundwater leds stratearer than or equal to 0.	ovide drinking water that meets customer expectations. Minue to meet Federal and State water quality standards as tall as customets tandards for taste and aesthetic throughout enlamin mented	e pairming percon. otect aquifer from contamination. event unacceptable degradation of aquifer according to the sin Plan throughout the planning period.	in of contaminants by June 2009. ap contaminants by June 2009. ap contaminanted sites and monitor contaminant movement December 2008.	otect natural streams and recharge areas from ntamination. Verent unaccorable degradation of natural streams and	anning period. anning period. aximize beneficial use of recycled water. crease infrastructure and establish policies to use 33% of ordet water to meet expected demand by 2015, 66% by	25, and 100% by 2035. duce negative impacts of storm water, urban runoff, and isiance water a regional flood management tolan and policy	chanism by the year 2010. eserve open space and natural habitats that protect and hance water resources and species in the region.	ntribute to the preservation of an additional 2,000 acres of the space and maximize face and groundwater managemently 2015. sintain agricultural land use within the Region.	eserve 10,000 acres of farmland in rotation through 2035. eet growing demandfor recreational space. Throute to local and regional cloteneral laming documents movide. 5 000 acres of racrastinal coscolary 2035.	provines your acres or reus environ apore of 2000. prove integrated land use planning to support water availance a seconnel land use management plan by the	ordinate a regional land Use management plan vy ure ar 2010.
Plan for Public Health and Safety	N N N N N N N N N N N N N N N N N N N		N E S			M ti The an	Fid Fa	T & &	한도로운	n N P	s n n n n n n n n n n n n n n n n n n n	el the second	일 드 용 드 3	As N I Po	A 6 B II	Pr	an an de r	Pr sir	S a D v d	e 9 W St	r o » t	P P P	e is ti s	7073	김정보고	0 1 % S	E Z E .	2 4 2 2	<u>r s s</u> t	SEES	א ני א
Assist and encourage the efforts of the State and local entities responsible for regular maintenance of the California Aqueduct and the Little Rock Dam to reduce the risk of seismic failure and to ensure that water levels are kept at or below the designed safe water levels, thereby reducing the risk of overtopping.	Х	(	x x	(	x			x x	х	Х					X	х										x :	x				
Minimize the potential for loss of life, physical injury, property damage, and social disruption resulting from a 100-year flood.			X	( )	х				Х						Х	Х										X	Х				
Manage flood hazards to ensure an acceptable level of risk and to facilitate rapid physical and economic recovery following a flood through the identification and recog nition of potentially hazardous conditions and implementation of effective standards for location and construction of development.	-		x )	( )	x				Х						Х	X										x	х				
In coordination with the City of Palmdale and Los Angeles County, update a regional drainage study, as applicable, and incorporate the results into the City's master drainage plan.			x	(	x										Х	Х										X :	х				
Following completion of the update of the regional drainage study, above, formulate a program for abatement of flood hazards within existing developed areas.	3		X X	( )	х										Х	Х										X	х				
Ensure that no structure designed for human occupancy is constructed within the 100 year floodplain without being raised at a minimum, one foot above the floodplain. Retain undeveloped or vacant land within 100 year floodplains as very low density rurz uses or open space where plans for construction of flood control facilities are absent.	al		х )	( x )	x				Х						Х	Х										X	х		x x	х	Х
Require, as a prerequisite to development approval within the 100 year floodplain, that information be submitted by a qualified civil or hydrological engineer certifying the 100 year level.			x	( )	x				Х						Х	Х										X :	х				
Require, as a prerequisite to development approval, that drainage studies identify the facilities which are required to ensure that proposed development is adequately protected and that such development will not create or increase downstream or upstream flood hazards.			x x	( )	x				Х					Х	X	Х										X	х				
Through the development review process, encourage the use of pervious paving materials in hardscape areas; swale designs in landscape or grassy areas which slow runoff and maximize infiltration; and the discharge of roof drainage into pervious, greenbelt and seepage pit areas to reduce increases in downstream runoff resulting from new developments.		х	x )	( )	X				х		x			Х	Х	х										x :	х				
Require that street and storm drain flood control systems be designed to accommodate identified storm flows.	e		X X	( )	x				Х					Х	Х	Х										X	х				
Ensure that major creeks, channels and basins are kept clear of obstruction, and are regularly maintained.			X )	(X				Y	Y					Y	v	Y										X	x				
Loordinate with the LPA to develop an urban stormwater management ordinance. Plan for Municipal Services and Facilities		X	X	(     )	X			X	X		X			X	X	X										X	X				
Ensure that adequate flood control facilities are provided, which maintain the integrity of significant riparian and other environmental habitats in accordance with Biological Resources policies.	у		x	( X )	X						Х			Х	х	Х										x :	X X	X			
Ensure that mitigation is provided for all development in recognized flood prohe areas. Any mitigation of flood hazard in one area shall not exacerbate flooding problems in other areas.			X X	( )	х				Х				Х		Х	Х										x	х				
Environmental Resource Management Policies																															
Plan for the Natural Environment Identify, preserve and maintain important biological systems within the Antelope Valley, and educate the general public about these resources, which include the Joshua Tree - California Juniper Woodlands, areas that support endangered or sensitive species, and other natural areas of regional significance.	a			x x x x	X						Х				Х												х	х			
Cooperate with federal, state and local agencies in developing the West Mojave multi-				x x x x	X			Х			Х				Х												Х	Х			
Through the West Mojave Plan, initiate areawide studies to identify sensitive plants and animals within the study area.				x x x x	X						х				Х												Х	Х			
In consultatioon with appropriate federal and State agencies, develop a comprehensive management program for significant biological resources to include areas identified by Los Angeles County as Significant Ecological Areas (SEAs) within city limits.	y			x x x x	X						х				Х												х	Х			
Consider designation of environmentally sensitive areas as future park sites or open space resources and pursue acquisition of these sites.				x x x x x	X						Х				Х												Х	Х	X X	Х	Х
Conduct a study of potential funding mechanisms for long-term maintenance and protection of biological preserve areas. As part of this study, specifically assess the effectiveness of participating in an area wide assessment program to fund long-range maintenance of environmentally sensitive habitats.				x x x x	x						X				Х												Х	X			
Preserve significant desert wash areas to protect sensitive species that utilize these habitat areas.				X X X X	х						Х				Х												Х	Х			

Table 8-2 Local & Regional Plan Policies vs. IRW	/M Plan Strateg	gies, AB 30	030, IR	WM Pla	an Guidelines, 8	& State	wide Prie	orities (	conti	inued)																					
	Water Supply	Water Fl Quality M	lood Igmt. Manac	onmental Lan Irce Use gement Mgr	d AB 3030 Guidelines mt.				IRWM Pla	an Program Preferences		Statewide Prio				Water Supply /	Management	t Objectives			Water Q		gement Obje				Flood Mgmt Objectives	" Env. Mgmt.	Obj. Land Objec	Use Manager ctives	ment
Local and Regional Plan Policies	tater Supply Reliability roundwater Management dater Conservation dater Respring mported Water urdas Storage	daer Transfers esalmation area Quaity Protection and Improvement on -Point Source Pollution Control daer and Mastewater Treatment	iooo managemen. torm water of putue and Management cosystem Restoration wiroommetral and Habitat Protection and Improvement	ecreation and Public Access Letlands Enhancement and Creation and Use Planning	lateshed Planning he control of saline water intrusion. Lendfrockon and management of wellhead protection areas and recharge areas. egulation of the migration of contaminated go undwater. In a program.	enjektions of groundwate extracted by water producers. tonitoring of groundwater levels and storage. additating onluctive use operations.	A construction on the structure power of power of ground- he construction and operations by the local agency of ground- after constamination deanup, recharge, storage, conservation, atter recycling and extraction projects.	e gulatory agencies. The review of that use plans and coordination with land use lanning agencies to assess activities which create a reason- ble cits of groundwater contamination.	rclude integrated projects with multiple benefits. upport and improve local and regional water supply sliability.	endonic entribute expeditions/y and measurably to the long-term trainment and maintenance of water quality standards. Ilminate or significantly reduce pollution in impaired a set of stanting water and water quality projects that clude safe drinking water and water quality projects that	erve obstandage comunutes. And de goundwater management and recharge projects that de located 1) in San Benardino or Riverside courties; 2) tusted of the service area of the Metropolitan Water District Schothern California; or 3) within one mile of established sidential and commercial development.	educe conflict between water users or resolve water rights mplementation of TMDLs that are established or under evelopment. mplementation of Regional Water Quality Control Board	ratesheu management inimative chapters, plans, and olicies. Dietementation of the State Water Resource Control Board's on-point Source Pollution Plan.	sist in meeting Delta Water Quality Objectives. mplementation of recommendations of the floodplain managementast froce. Jeabiliation Task force, Jeapiliation zore of State species recovery plan	ddress environmental justice concerns. sisti in achieving one or more goals of the CALFED Bay-Delta rogram.	rovide reliable water supply to meet the Region's expected emand between now (2010) and 2035. educe (73,600 to 236,800 AFY) mismatch of expected supply od demand in average years by providing new water supply	nd reducing demand, starting 2.009. rovide adequate reserves (50.600 to 57.400 AFY) to supple- rent average condition supply to meet demands during Inde-drivvear conditions starting 2.009.	rovide adequate reserves (0 to 62,000 AFY) to supplement verage condition supply to meet demands during multi-dry ear conditions, starting 2009.	stablish a contingency plan to meet water supply needs of the egion during a plausible disruption of SVP water deliveries. Instructure a bility to meet regional water demands	y June 2010. June 2010. tabilize groundwater levels at current conditions. Langage groundwater levels introughout the basis such that a 0 warmoving average of cf hange in observed monidwater.	revels increased on the process of t	iel i as customer standards for taste and æsthetic throughout he planning period. The staquifer from contamination.	asin Plan throughout the planning period. Lentify contaminated portions of aquifer and prevent migra- ion of contaminants by June 2009.	tap containinateu sues ano momor containinant movement. y December 2008. rotect natural streams and recharge areas from	eventuments of the second of the basin Plant throughout the scharge areas according to the Basin Plant throughout the lanning period.	taximize beneficial use of recycled water. rcrease infrastructure and establish policies to use 33% of ecycled water to meet expected demand by 2015, 66% by 202, and 100% by 2032.	educe negative impacts of storm water, urban runoff, and uisance water. oordinate are regional flood management plan and policy	recentainsmoy the year curve. reserve open space and natural habitats that protect and nhance water resources and species in the region. ontribute to the preservation of an additional 2,000 acres of	pen space and natural habitat, to integrate and maximize urface and groundwater management by 2015. Tathatin agricultural land use within the feapion.	restret curve curve and interment intrament in curve c	nprove integrated land use planning to support water ianagement. an 2010:
As part of project specific environmental review, evaluate natural desert wash habitats which could be impacted by development to determine their potential to support special status plant and wildlife species. Areas of desert wash habitat considered to be highligh important to special status species, or that is occupied by these species, shall be protected.	30333203		X X	X X	VT T B B T T V			X	<u> </u>	X	200428	~ _ ¬ _ :	× d = 2	Χ	AA		9 G E 9	a a v		- 2 0 2 -		> <del>-</del> 4 4				<u> </u>	<u> </u>	X	X	2021	
Encourage the protection of open space lands in and around the Poppy Preserve, including Fairmont and Antelope Buttes, to preserve habitat for sensitive mammals, reptiles, and birds, including raptors.			x x	x x										Х														x	Х		
Plan for the Living Environment Work with Los Angeles County and other public agencies to accept dedication of open space lands of regional significance, including watersheds, wildlife habitats, wetlands, historic sistes, and scenic lands. The City shall also encourage private entitites to preserve open space lands.			x x	x x										Х														х	х		
Plan for Physical Mobility Support and improve a roadway network that is sensitive to environmental issues such as, biological, land, and water resources, as well as air quality, while permitting continued development within the study area.		x x	х	Х				Х		Х			Х														x x	X	х		
Plan for the Natural Environment																															
Plan for a natural park to encompass the Little Rock Wash area. This park should be large enough to protect resources by providing a buffer against intrusion from future surrounding land uses. Recreational uses should be allowed in the park which may be used to enhance the utility of the wash. Hiking, bicycling, and equestrian trails should be encouraged.			x x	x x				х		Х																		X	x	хх	x x
Protect lands currently in agricultural production from the negative impacts created when urban and rural land uses exist in close proximity, while recognizing the possibility of their long-term conversion to urban or rural uses.				х				Х																					x x		
Condition all new urban residential developments located within 500 feet of lands in agricultural production to require the notification of buyers and future residents that the property is subject to agricultural related nuisances.				Х				Х																					x x		
Plan for the Living Environment Provide sufficient paidshorbood and community park facilities such that a rate of 5.0																															
acres of park land per 1,000 residents is achieved and distributed so as to be convenient to Lancaster residents.	t			X X											Х															ХХ	X X
including active recreation and passive open space enjoyment within a coordinated system of local, regional, and special use park lands.	,			X X											Х															ХХ	X X
ties, including trails and open spaces along washes, as well as active recreational use of retention/detention basin facilities.	f	Х	( X	X X																										ХХ	X X
adjacent to the City; as funding becomes available, acquire such lands either through purchase or long-term lease agreements to provide park land where such lands are consistent with Master Plan of Parks.				x x			Х	(							Х															ХХ	x x
Establish and maintain a hierarchical system of trails (including equestrian, bicycle, and pedestrian trails) which provides recreational opportunities and an alternative means of reaching schools, parks and natural areas, and places of employment, and which connects to regional trail systems.				x x											х															ХХ	x x
CITY OF PALMDALE GENERAL PLAN (2003)																															
Water Supply/Water Quality Policies																															
Protect from pollutants or other materials which might degrade groundwater supplies and enhance natural recharge areas such as the Little Rock and Big Rock Washes, and Amargosa and Anaverde Creeks, and ensure that no mineral resources recovery activi- ties extend below the groundwater table.	, x x	x x		х	X X		х	X	Х	x x	Х	X :	K X	x x	х	x x	х	х	x x	x x		x	x x	x x	х						
Cooperate with Los Angeles County Health Department and the Regional Water Quality Control Board in monitoring industrial and commercial uses utilizing hazardous or potentially polluting materials and fluids, to prevent their discharge into the groundwater aquifer.	х х	x x		Х	X	х	Х	Х	Х	X X	Х	X	( X	x x	х	X X	х	х	x x	x x		x	x x	x x	х						
Promote water conserving landscape techniques, through the use of native and drought tolerant plant species and landscape design standards.	X X			Х					Х						Х	ХХ															
construction.	ХХ			Х					Х						Х	Х Х															

Table 8-2 Local & Regional Plan Policies vs. IRV	NM P	Plan	Stra	ategi	ies, A	AB 30	)30,	IRW	M Pla	n G	uide	lines	, & S	tate	wide	Prior	ities	(con	tinu	ied)																														
	Wate	er Suppl	ly		Wate Qual	er Flo lity Mo	ood gmt.	vironme source	ental Lan Use	d AB:		idelines						IRWM	Plan Pro	ogram Pi	reference			Statewi	de Prioriti				Ň	Water Sı	upply Man	agement	Objective				Wa		y Manage						Flood Mgm Objectives	t. Env. M	gmt. Obj.	Land Use Objectiv	e Manager es	ment
Local and Regional Plan Policies	Water Supply Reliability Groundwater Mananement	or ourlow at er management Water Conservation Water Decircline	water ke cycling Water Banking & Conjunctive Use Imnorried Water	Surface Storage Water Transfers	Desalination Water Quality Protection and Improvement	Non-Point Source Pollution Control Water and Wastewater Treatment Flood Management	Storm water Capture and Management Erox vstem Restoration	Environmental and Habitat Protection and Improvement Recreation and Public Access	Wetlands Enhancement and Creation Land Use Planning	Watershed Planning The control of saline water intrusion.	Identification and management of wellhead protection areas and recharge areas	Regulation of the migration of contaminated groundwater. The administration of a well abandonment and well destruc- tion program.	Mitigation of conditions of over draft. Replenishment of groundwater extracted by water producers.	Monitoring of groundwater levels and storage. Facilitating conjunctive use operations. Identification of well construction nolicies	The construction and operation by the local agency of ground- water construction and operation by the local agency of ground- water contamination cleanup, representation,	waternersynning anu extraction projects. The development of relationships with state and federal regulatory agencies.	The review of land use plans and coordination with land use planning agencies to assess activities which create a reason- able rick of conjustuator contramination	auctures or grounswatch containing one. Include integrated projects with multiple benefits. Support and improve local and regional water supply	reliability. Contribute expeditiously and measurably to the long-term	attainment and maintenance of water quality standards. Eliminate or significantly reduce pollution in impaired	waters and sensitive habitat areas, including areas of special biological significance. Include safe drinkingwater and water quality projects that	serve disadvantaged communities. Include groundwater management and recharge projects best frag located 10 in San Remarching on Proversia countries: 20	triat are located 1,111 and Bernard onto or Huers 20 outside of the service area of the Metropolitan Water District of Southenr (alifornia; or 3) within one mile of established restiontial and commercial development:	Reduce conflict between water users or resolve water rights Implementation of TMDLs that are established or under	ueerophilerit. Implementation of Regional Water Quality Control Board Watershed Management initiative Chapters, plans, and	policies. Implementation of the State Water Resource Control Board's Non-point Source Pollution Plan.	Assist in meeting Delta Water Quality Objectives. Implementation of recommendations of the floodplain	management task force, desalination Task force, recycling task force or State species recovery plan Address environmental instire concerns	Assist in achieving one or more goals of the CALFED Bay-Delta Program.	Provide reliable water supply to meet the Region's expected demand between now (2010) and 2035.	Reduce (13,600 to 236,800 AFY) mismatch of expected supply and demand in average years by providing new water supply and reducing demand, starting 2009.	Provide adequate reserves (50,600 to 57,400 AFY) to supple- ment average condition supply to meet demands during single-dryyear conditions, starting 2009.	Provide adequate reserves (0 to 62,000 AFV) to supplement average condition supply to meet demands during multi-dry assrctions. terreina 2000	Establish a contingency plan to meet water supply needs of the region during a plausible disruption of SWP water deliveries.	Demonstrate ability to meet regional water demands without receiving SWP water for 6 months over the summer by June 2010.	Stabilize groundwater levels at current conditions. Manage groundwater levels throughout the basin such that a	IV year moving average or change in observed groundwater levels is greater than or equal to 0. Provide drinking water that meets customer expectations.	Continue to meet Federal and State water quality standards as well as customer standards for taste and aesthetic throughout the planning period.	Protect aquifer from contamination. Prevent unacceptable degradation of aquifer according to the Pario Blanchroundwurthe of Janning neuron	Identify contaminated portions of aquifer and prevent migra- tion of contaminants by June 2009.	by December 2008. Protect natural streams and recharge areas from	contamination. Prevent unacceptable degradation of natural streams and recharge areas according to the Basin Plan throuchout the	planning period. Maximize beneficial use of recycled water.	Increase infrastructure and establish policies to use 33% of recycled water to meet expected demand by 2015, 66% by 2025, and 100% by 2035.	Reduce negative impacts of storm water, urban runoff, and nuisance water. Coordinate a regional flood management plan and policy	mechanism by the year 2010. Preserve open space and natural habitats that protect and enhance waterresources and species in the region.	Contribute to the preservation of an additional 2,000 acres of open space and natural habitat, to integrate and maximize surface and oroundwater management by 2015.	Maintain agricultural land use within the Region. Preserve 10,000 acres of farmland in rotation through 2035.	Meet growing demand up it is concerning against a growing documents Contribute to local and regional General Planning documents to provide 5,000 acres of recreational space by 2035.	Improve integrated land use planning to support water management. Coordinate a regional land use management plan by the
Coordinate with local water agencies to monitor ground water levels, State water allocations and development approvals, to assure that development does not outpace long-term water availability. In the event applicable water agencies notify the City that ground water levels and State water allocations are insufficient to serve existing development or projected development, the City will determine whether it is appropriate to reevaluate this General Plan and take other appropriate actions, as permitted by law.	x x	(	x	X			. 0, 11		x	X			X	X	X	~	X		X		~ ~ ~	<u> </u>				<u> </u>	4	14 4		X	X	X	X	X	X	х )	x											~ * *		
Assess the feasibility of utilizing reclaimed water for landscape irrigation on a city- wide basis. Factors to be considered include the potential quantities of recliamed water as determined by the Sanitation Districts, and costs associated with developing infrastructure and delivery systems to facilitate utilization. Within those areas in which it is determined to be feasible to utilize reclaimed water, consider establishmen of an ordinance requiring installation of secondary water delivery systems to service landscaped areas.	y X nt	Х	x						х						Х			;	х											х	X	Х	Х	Х	Х	x	x						Х	X						
Work with local water purveyors to assess the potential for capturing local run-off and utilization of imported water (water banking) for groundwater recharge within the Planning Area; through the land use planning process, ensure that important recharge areas are retained for that use.	d e X X	K	хх				х		Х	х	x		X	хх	Х		Х	3	х				Х						Х	Х	Х	Х	Х	Х	Х	x >	x						Х	Х						
Continue to seek out long-range water management techniques as new technology is developed; promote implementation of systems which are feasible and appropriate to the Planning Area.	D X X	кхх	хх						Х	х			X	x x	Х			3	Х										Х	Х	Х	Х	Х	Х	Х	x >	x						Х	Х						
Participate in regional efforts to retain imported water allocations and seek out other sources as they become available. Public Services Element	r <mark>x x</mark>	(	ХХ						Х	Х			Х	Х	Х			1	х										Х	Х	Х	Х	Х	Х	Х	X	Х													
Ensure that all development in Palmdale is served by adequate water distribution and sewage facilities.	Х				Х	Х			Х								Х				)	(															Х	Х												
Flood Management Policies Parks, Recreation and Trails Element																																																		
Where feasible, utilize parks for joint use as flood control facilities. Environmental Resources Element						Х		Х	Х						Х													Х	Х																ХХ			)	X	ХХ
Incorporate the use of flood control measures which maximize groundwater recharge and the use of floodways as native habitat.						Х	Х	Х	Х		Х				Х								Х			Х		Х	Х																х х	Х	Х			
Restrict building coverage and total impervious area in the vicinity of natural recharge areas.	e				Х	x x	Х	Х	Х		Х				Х		Х						Х			Х		Х	Х																х х					
Safety Element																																																		
Preserve and restore the natural and beneficial values served by floodplains to the extent feasible, consistent with public health, safety, and welfare.						Х	X	Х	ХХ								Х		Х	(	Х					Х		Х	Х																X X	Х	Х			
Promote open space and recreational uses in designated flood zones, unless mitigation of the hazard can allow other types of development.	on					Х	X	Х	Х																			Х	Х																X X			)	L X	x x
Public Services Element Develop and maintain adequate storm drainage and flood control facilities.					Х	Х	X		Х								Х											Х	Х																ХХ					
Environmental Resource Management Policies																																																		
Parks, Recreation and Trails Element Provide a network of open space areas to provide for passive recreation opportuni- ties, enhance the integrity of biological systems, and provide visual relief from the developed notrinos of the City.								x x	Х																			х	:																	Х	Х	)	( X	x x
Encourage the placement of multi-use trails or Class I bikeways adjacent to or within open space corridors, except that the placement of these trails should not compromise the preservation of any sensitive environmental resources which may be present in the open space area.	e Ie							хх	х																																					Х	Х	>	k x	x x
Provide for access points into open space areas to encourage passive recreation activi- ties such as hiking and nature study. These access points should be located at sites which can best tolerate human presence and not directly impact sensitive locations such as springs and archaeological sites.								x x	х																																					Х	Х	)	t x	x x
Develop an open space network through preservation of corridors along fault zones, natural drainage courses and in hillside areas to connect with the large areas of open space designated on the General Plan Land Use Map.								X X	х																																					Х	Х			
Environmental Resources Element																																																		
rreserve significant natural and man-made open space areas that give Palmdale its distinct form and identity.							Х	ХХ	Х																																					Х	Х			
Utilize the City's discretionary land use approval process to locate and retain areas for use as open space through dedication or other legal means. Develop criteria and guidelines to identify areas that should be so protected.							Х	ХХ	Х																																					Х	Х			

Table 8-2 Local & Regional Plan Policies vs. IRV	VM Plan Strateg	jies, AB	3030, I	IRWM P	Plan	Guide	lines,	& Stat	tewide	e Prio	rities (	cont	tinue	d)																										
	Water Supply	Water Quality	Flood Mgmt. Ma	vironmental L source	Land Use Mamt.	AB 3030 Gu	idelines					IRWM P	Plan Progi	ram Prefer	rences		Statew	vide Priori				w	ater Supply	Manageme	nt Objectiv	es			Water Quali						Flood Mgn Objectiver	nt. s Env. Mg	mt. Obj.	.and Use Ma Objectives	anagemen	t
Local and Regional Plan Policies	Water Supply Reliability Groundwater Management Water Conservation Water Rocycling Water Rocycling And are Banking & Gnjunctive Use Imported Water Surface Storage	Desains natures Desains natures Water Quality Protection and Improvement Non-Poins Source Pollution Control	water and wastewater Ireatment Flood Management Zostrim water of Dature and Management Ecosystem Restoration	Environmental and Habitat Protection and Improvement Recreation and Public Access Wetlands Enhancement and Creation	Land Use Planning Watershed Planning	The control of saline water intrusion. Identification and management of wellhead protection areas and recharge areas	Regulation of the migration of contaminated groundwater. The administration of a well abandonment and well destruc- Miniaryion of condition cost on order to	murgation or conotrons or over draft. Replenishment of groundwater extracted by water producers. Anontoring of groundwater levels and storage.	reunerung sontymenter use operations. Identification of well construction policies. The construction and operation by the local agency of ground- water contramination cleanus, recharder conservation.	water recycling and extraction projects. The development of relationships with state and federal remilatory anonios.	expension of a process of the pro	Include integrated projects with multiple benefits. Support and improve local and regional water supply	reliability. Contribute expeditiously and measurably to the long-term attainment and maintenance of water ouality standards.	Eliminate or significantly reduce pollution in impaired waters and sensitive habitat areas, including areas of special biolocical significance.	Include safe drinking water and water quality projects that serve disadvantaged communities.	Include groundwater management and recharge projects that are locked (1) in San Brandfinon Riversdie counties, 2) outside of the service are and the Metropolitan Water District of Southern california; or 3) within one mile of established	residential and commercial development. Reduce conflict between water users or resolve water rights Implementation of TMDLs that are established or under	development. Implementation of Regional Water Quality Control Board Watershed Management Initiative Chapters, plans, and	policies. Implementation of the State Water Resource Control Board's	Non-point Source Pollution Plan. A sisti in meeting belta Water Quality Objectives. Implementation of recommendations of the floodplain management task force, recycling task	force of State species recovery plan Address environmental justice concerns.	A ssist in achieving one or more goals of the CALFED Bay-Delta Program. Provide reliable water cumby to meet the Perion's evocrad	Thorner created work suppry fourtee the region's expected demand between now (2010) and 2035. Reduce (73,600 to 25,800 AFV) mismatch of expected supply and demand in average years by providing new water supply	and reducing demand, starting 2009. Provide adequate reserves (50,600 to 57,400 AFY) to supple- ment average condition supply to meet demands during	singre-arypear conditions, starting 2003. Provide adequate reserves (0 to 62,000 AFV) to supplement average condition supply to meet demands during multi-dry	year comunents, searing 2002. Establish a contingency plant o meet water supply needs of the region during a plausible disruption of SWP water deliveries.	o convision are example to meet regard an water remanus by uthout receiving SWP water for 6 months over the summer Stabiliza nonindwater levels at current conditions	Manage groundwater levels throughout the basin such that a 10 year moving average of change in observed groundwater levels is greater than or equal to 0.	Provide drinking water that meets customer expectations. Continue to meet Federal and State water quality standards as the las customers andards for taste and aesthetic throughout the alaminm resided	ue poeminer yenvoor. Protect aquifer for ontamination. Prevent unacceptable degradation of aquifer according to the Basin Plantifroughout the planning period.	Identify contaminated portrons or aquirer and prevent unigna- tion of contaminants by June 2009. A constantiated sites and monitor contaminant movement	by December 2006. Protect natural streams and recharge areas from contamination.	Prevent unacceptable degradation of martural streams and recharge areas according to the Basin Plan throughout the paraming period.	MaXimize vertex unitary event water. The contrase infrastructure and establish policies to use 33% of recycled water to meet expected demand by 2015, 66% by 2025, and 100% by 2035.	Reduce negative impacts of storm water, urban runoff, and nuisance water. Coordinate a regional flood management plan and policy	mechanism by the year 2010. Preserve open space and natural habitats that protect and enhance waterresources and species in the region.	Contribute to the preservation of an additional 2,000 acres or open space and natural habitat, to integrate and maximize surface and groundwater management by 2015.	Maintain agricultural land use within the Region. Preserve 1000 acress of farmland in rotation through 2035. Meet growing demand for recreational space.	Contribute to local and regional veneral relating vucuments to provide 5,000 acres of recreational space by 2035. Improve integrated land use planning to support water	management. Coordinate a regional land use management plan by the var 2010
Integrate natural hazard areas, such as floodways, seismic fault zones, and unstable soils, into the open space network in order to ensure public health, safety and welfare while preserving open space.			X X	хх	Х															Х		Х														Х	х			
Cooperate with private and public entities whose goals are to preserve natural and man-made open space. Develop criteria and guidelines to identify how to establish land trust open space locations.			Х	хх	х					Х																										Х	х			
The following broadly defined areas will be designated as a Significant Ecological Area (SEA) overlay on the General Plan Land Use Map: Big Rock Wash, Little Rock Wash, Ritter Ridge, Portal Ridge and Alpine Butte. Biological surveys should be performed te determine the nature and extent of their ecological significance prior to any approval of new developments within the overlay area. Any development permitted in these areas must consider significant environmental resources to the extent feasible.	a D		х	x x x	х									Х																						Х	х			
Promote only compatible, and where appropriate, passive recreational uses in natural areas determined to be ecologically significant, consistent with the particular needs and characteristics of each SEA, as determined by approved field observation reports.				хх	Х																															х	Х	Х	x x	Х
Solicit and utilize all available sources of local, regional, state and federal funds to acquire significant wetland areas, in order to minimize the disturbance and prevent damage from erosion, turbidity, siltation, a loss of wildlife and vegetation, or the destruction of the natural habitat.			х	x x	хх					Х																										Х	х			
Preserve natural drainage courses and riparian areas where significant concentrations of ecological resources exist.	5		Х	x x	x x																															Х	х			
Cooperate with the preparation and the implementation of the West Mojave Coordinated Management Plan for protection of desert tortoise and Mohave ground sourcel.			Х	x x	Х					х																										Х	х			
Land Use Management Policies Parks, Recreation and Trails Element																																								
Adopt and implement a standard of 5 acres of parkland per 1,000 population for the City.				Х	Х																																	Х	x x	Х
Of the 5 acre/1,000 population, active park land must comprise no less than 3 acres/1,000 population; open space may comprise 1 acre/1,000 population; and the remainder can be composed of other public recreational facilities including Desert hirr. Golf Course, portions of school sites which provide recreation facilities or play fields accessible to the public, or other comparable facilities. Of the 3 acre/1,000 population standard for active park land, develop 2 acres as community or specialty parks and 1 acre as neighborhood parks.	e			X	х																X															х	х	х	x x	Х
Ensure that park sites are located equitably, throughout the City, to maximize access to parks for all residents.	0			Х	Х																Х																	Х	X X	Х
Provide a variety of parks throughout the City, including community and neighborhoo parks, to meet the needs of all residents.	d			Х	Х																Х																	Х	X X	Х
Explore various means of acquiring parkland and seek creative and flexible techniques to accomplish City park goals.	5			Х	Х																																	Х	X X	Х
Collect park fees and review this fee annually, to provide financing for improvement o parkland in Palmdale.	f			Х	Х																																	Х	X X	Х
Consider formation of a city-wide public financing district to provide funding for design, acquisition, construction and maintenance of parks throughout the City.				Х	Х																																	Х	x x	Х
Continue to use the City's Capital Improvement Program as the mechanism for short- term planning for acquisition of park land and construction of park facilities.				х	Х																																	Х	x x	Х
Where appropriate, remodel or recycle existing vacant buildings, such as large retail o industrial buildings, for recreation uses.	r			Х	Х																																	Х	x x	Х
When reviewing reclamation plans for quarries, incorporate provisions which allow reclaimed quarries to be used for appropriate recreational purposes.				Х	Х																																	Х	x x	Х
Wherever feasible, incorporate uses which increase the public benefit of park land, an are compatible with the goal of providing active recreation opportunities.	d			Х	х																																	Х	x x	Х
Incorporate fire stations, maintenance yards, park-and-ride lots and other public facilities into parks, to share costs associated with land acquisition, provision of infrastructure and access and provision of shared parking, so long as the use does not conflict with providing active recreation opportunities.				Х	Х																																	Х	x x	Х
Seek opportunities to develop regional parks or recreational facilities, which provide recreational benefits to a wide range of residents of the Antelope Valley, as a joint effort with the City of Lancaster.				х	Х																																	х	x x	Х
Create linear parks along drainage courses, utility easements or other such features. Linear parks can include pedestrian paths, bikeways or par courses (fitness courses).				Х	Х																																	Х	X X	Х
Where unique recreational demands exist, either within a neighborhood or city-wide, develop specialty parks, such as equestrian centers, sports complexes, amphitheater sites, arboretums or nature centers, to provide specific recreational opportunities.				х	Х																																	Х	X X	х

Table 8-2 Local & Regional Plan Policies vs. IRW	VM PI	an Strategi	ies, AB 30	30, IR	WM Plar	n Guio	delines	s, & Sta	atewid	e Prior	rities	(cont	inue	d)																										
	Water	Supply	Water Floo Quality Mgr	nt. Enviro Resour	nmental Land rce Use gement Mgmt	AB 3030	0 Guidelines					IRWM Pla	an Progra	am Prefere	ences		Statev	wide Prioriti				Wate	r Supply Ma	inagement	Objective				Vater Quali1						Flood Mgm Objectives	nt. Env. Mo	gmt. Obj.	Land Use I Objective:	Managemer s	nt
Local and Regional Plan Policies	Water Supply Reliability Groundwater Management	Water Conservation Water Recycling Water Banking & Conjunctive Use Surface Storage Surface Storage	Desalination Water Quality Protection and Improvement Water and Wastewater Treatment Flood Management	Storm water Capture and Management Ecosystem Restoration Erwironmental and Habitat Protection and Improvement	Recreation and Public Access Wetlands Enhancement and Creation Land Use Plannino Larechale Plannino	watersheer training The control of saline water intrusion. Identification and management of wellhead protection areas	and recharge areas Regulation of the migration of contaminated groundwater. The administration of a well abandomment and well destruc- tion program.	rou program Mitigation of conditions of over draft Replemishment of groundwater extracted by water producers. Monitoring of groundwater levels and storage.	Facilitating conjunctive use operations. Identification of well construction policies. In construction and operation by the local agency of ground-	water containtation teamup, reutange, source of a mater recycling and extraction projects. The development of relationships with state and federal regulatory agencies.	The review of land use plans and coordination with land use planning agencies to assess activities which create a reason- able risk of coroundwater contamination.	uncertainty or your construction of the full of the fu	renaourry. Contribute expeditiously and measurably to the long-term attainment and maintenance of water quality standards.	Eliminate or significantly reduce pollution in impaired waters and sensitive habitat areas, including areas of special biological significance.	Include safe drinking water and water quality projects that serve disadvantaged communities.	Include groundwater management and recharge projects that are located 1) in San Bernardmon off werside counties; 2) outside of the service area of the Metropolitan Water District of Southern California; or 3) within one mile of testabilished	residential and commercial development. Reduce conflict between water users or resolve water rights Innolementation of TMDIs that are established or under	development. Implementation of Regional Water Quality Control Board Watershed Management initiative Chapters, plans, and	policies. Implementation of the State Water Resource Control Board's Non-point Source Pollution Plan.	Assist in meeting Delta Water Quality Objectives. Implementation of recommendations of the floodplain management task force, desalination Task force, recycling task	force or State species recovery plan Address environmental justice concerns. Assist in achieving one or more goals of the CALFED Bay-Delta	Program. Provide reliable water supply to meet the Region's expected demand hetween now (2010) and 2035.	Reductions of the control of the con	Provide adequate reserves (50,600 to 57,400 AFY) to supple- ment average condition supply to meet demands during single-dryyear conditions, starting 2009.	Provide adequate reserves (0 to 62,000 AFY) to supplement average condition supply to meet demands during multi-dry vear conditions, starting 2009.	Establish a contingency plant o meet water supply needs of the region during a plausible disruption of SWP water deliveries. Demonstrate ability to meet regional water demands	without receiving SWP water for 6 months over the summer by June 2010. Stabilize groundwater levels at current conditions.	Manage groundwater levels throughout the basin such that a 10 year moving average of change in observed groundwater levels is greater than or equal to 0.	Provide drinking water that meets sustommer expectations. Continue to meet Federal and State water quality standards as the las customer standards for taste and aesthetic throughout the Alamian period	Processing from contamination. Prevent unacceptable degradation of aquifer according to the Basin Plant throuchout the planning period.	Identify contaminated portions of aquifier and prevent migra- tion of contaminants by June 2009. Map contaminated sites and monitor contaminant movement	by December 2008. Protect natural streams and recharge areas from contamination.	Prevent unacceptable degradation of natural streams and recharge areas according to the Basin Planthroughout the planning period.	Maximize beneficial use of recycled water. Increase infrastructure and establish policies to use 33% of recycled water to meet expected demand by 2015, 66% by 2025, and 100% by 2035.	Reduce negative impacts of storm water, urban runoff, and nuisance water. Coordinate a regional flood management plan and policy	mechanism by the year 2010. Preserve open space and natural habitats that protect and enhance water resources and species in the region.	Contribute to the preservation of an additional 2,000 acres of open space and natural habitat, to integrate and maximize surface and groundwater management by 2015.	Maintain agricultural land use within the Region. Preserve 10,000 acres of farmland in rotation through 2035. Meet growing demand for recreational space.	Contribute to local and regional General Planning documents to provide 5,000 acres of recreational space by 2035. Improve integrated land use planning to support water	management. Coordinate a regional land use management plan by the year 2010.
Provide trail linkages through active park sites to connect nearby equestrian and multi-use trails, and bikeways.					х х																																	Х	х х	( Х
On those park sites with steep slopes or other development constraints, leave natural areas for passive recreation pursuits.					х х																																	Х	х х	ίх
Environmental Resources Element																																								
ldentify significant farmlands pursuant to the State of California Important Farmlands Inventory and provide for their preservation as an interim use within the Planning Area	a.				Х					Х																												хх		
Encourage the preservation of agricultural lands in non-urban areas and as an interim use where urban development is not anticipated for several years.					Х																																	хх		
Preserve agricultural uses as a means of retaining aquifer recharge both naturally and through treated water sources.	ХХ	Х			Х	Х			Х			Х										Х	Х	Х	Х		Х	Х										ХХ		
WEST MOJAVE PLAN (2006)																																								
Environmental Resource Management Policies																																								
Biological Goals																																								
Protect sufficient habitat to ensure long-term tortoise population viability.				ХХ	Х																															Х	Х			
Establish a minimum of three, preferably four, Desert Wildlife Management Areas that would be managed for the long-term survival and recovery of the desert tortoise, and which would also benefit other special-status plant and animal species.	t			хх	Х																															Х	Х			
Establish an upward or stationary trend in the tortoise population of the West Mojave Recovery Unit for at least 25 years.				X X	Х																															Х	Х			
Ensure genetic connectivity among desert tortoise populations, both within the West Mojave Recovery Unit, and between this and other recovery units.				X X	Х																															Х	Х			
Delineate and maintain movement corridors between DWMAs, and with the Eastern Mojave Recovery Unit, the Eastern Colorado Recovery Unit, and the Northern Colorado Recovery Unit.				хх	х																															Х	Х			
Ensure a minimum width of two miles for movement corridors, and include provisions for major highway crossings.				X X	Х																															Х	Х			
Reduce tortoise mortality resulting from interspecific (i.e., raven predation) and intraspecific (i.e., disease) conflicts that likely result from human-induced changes in the ecosystem processes.				ХХ	х																															Х	Х			
Maintain the hydrological processes that support the dense populations within the Rosamond Lake Basin.	Х		ХХ		Х	x	Х	ХХ			Х			Х				х									Х	Х							х х	Х	Х			
Conserve all suitable riparian nesting habitat.				XX	Х	X								Х																						Х	Х			
Maintain groundwater levels in Mojave River that support the riparian habitat.	Х			XX	Х	X	Х	ХХ			Х			Х				Х									Х	Х								Х	Х			

programs (education, evapotranspiration (ET)-based irrigation controllers, faucet aerators, xeriscaping, etc.). Recycled water and conservation master plans have also been developed by local government agencies and water agencies (or are identified to be developed as part of this IRWM Plan); the AV IRWM Plan will similarly implement a number of projects identified in those plans.

Establish a contingency plan to meet water supply needs of the Antelope Valley Region during a plausible disruption of SWP water deliveries. Water supply needs,

including a complete description of a purveyor's water supply portfolio and, forecasts for single- and multi-year droughts, are discussed in the UWMPs of the Antelope Valley Region. The reliability section within each UWMP requires purveyors to identify those actions needed to meet any such supply deficiencies. The AV IRWM Plan includes a number of projects described in these UWMPs, including various Best Management Practices (BMPs) (e.g., water conservation programs). Additionally, Water and Wastewater Master Plans developed for portions of the Antelope Valley Region identified necessary infrastructure improvements and additional storage requirements necessary to increase the reliability of the water supply available to the Antelope Valley Region. The AV IRWM Plan includes a number of projects described in the Master Plans.

#### Stabilize groundwater levels at current conditions.

There is the need, however, to develop a groundwater management plan for the Antelope Valley Region in order to provide a better understanding of the Antelope Valley Groundwater Basin and to recommend various strategies that result in a reliable water supply for all basin users and help meet increasing water demands. Therefore, the AV IRWM Plan meets the requirements for an AB 3030 Plan and establishes a groundwater management plan for the whole basin. The AV IRWM Plan also identifies projects that are intended to protect and enhance groundwater supply through conjunctive use operations and monitoring.

#### Provide drinking water that meets customer expecta-

tions. UWMPs for all water purveyors in the Antelope Valley Region document actions to address improving and/or maintaining high quality drinking water that meets the customers' expectations. Planning documents that address drinking water quality include the Antelope Valley Region's water treatment plant facilities plans and the Lahontan RWQCB Basin Plan, which includes water quality objectives for groundwater used for domestic supply. In addition, the DPH regulates drinking water quality standards and determines the levels at which potential toxins can be present in drinking water. Projects within the AV IRWM Plan designed to meet these documented objectives include expansion or upgrade of water treatment and water reclamation plants, as well as groundwater management programs for removal of contaminants.

Protect aquifer from contamination. The Lahontan RWQCB Basin Plan discusses and identifies a variety of water quality objectives for groundwater and surface waters within the Antelope Valley Region, to preserve and enhance overall water quality, and to protect regional waters from contamination and degradation. The AV IRWM Plan proposes several programs and projects aimed at improving, enhancing and protecting the aquifer from contaminants, including regional wellhead management planning and monitoring and mapping known or suspected plumes.

Protect natural streams and recharge areas from

contamination. The Lahontan RWQCB Basin Plan designates beneficial uses for surface and groundwater resources and watersheds in the Antelope Valley Region, and includes objectives that must be attained or maintained to protect these uses and avoid contamination or degradation. A number of the local and regional General Planning documents also contain policies and programs aimed at improving the quality and use of surface waters and recharge areas. Thus, the plans and programs of those local and regional agencies and entities that are required to implement the specific projects and programs discussed above, will also implement this objective.

Maximize beneficial use of recycled water. Plans for improving and expanding infrastructure to accommodate and increase the beneficial use of recycled water in the Antelope Valley Region are contained in the capital improvement and strategic facilities plans of the wholesale and retail water agencies. The AV IRWM Plan identifies a variety of recycled water infrastructure expansion projects intended to increase beneficial use of recycled water in the Antelope Valley Region, and reduce overall potable demand.

#### Reduce negative impacts of storm water, urban runoff,

and nuisance water. There are a number of local planning documents related to improving the quality of runoff and reducing adverse impacts of nuisance water on area streams and waterbodies that have informed IRWM Plan efforts, such as the Lahontan RWQCB Basin Plan. TMDL implementation plans are developed to meet EPA Clean Water Act requirements at a local level, and identify responsible agencies. The development of projects and programs to reduce, capture, infiltrate, and/or treat storm water runoff is the responsibility of National Pollutant Discharge Elimination System (NPDES) permit holders (and co-permittees) and/or Waste Discharge Requirements (WDR), which include the counties, cities, and point source dischargers.

Projects and programs to reduce the presence of pollutants will be identified in TMDL-specific implementation plans prepared by the relevant jurisdictions for the affected water bodies if required, and the plans and programs developed by individual permittees.

Preserve open space and natural habitats that protect and enhance water resources and species in the Antelope

Valley Region. The objective to preserve open space and natural habitats is contained in a number of local watershed management plans. Individual projects and programs to achieve this goal will be the responsibility of local jurisdictions in those areas in which restoration or preservation activities occur, including those responsible for management of parks and open space (State Parks, counties and cities), resource management agencies (FWS, Forest Service, BLM, and Fish and Game), land use agencies (counties and cities), the local wastewater treatment entity (to the extent that wastewater discharge affects streams subject to restoration), and NPDES permit holders (where storm water discharge affects water quality in streams subject to restoration). Thus, the plans, work programs and capital improvement programs of those agencies and entities will include the specific projects and programs that implement this objective.

#### Maintain agricultural land use within the Antelope Valley

Region. Responsibility for protecting, preserving and maintaining agricultural land use within the Antelope Valley Region rests with the various governing agencies with discretionary oversight for land use development, including the counties and cities, and the NRCS. A variety of tax incentive programs (e.g., the Williamson Act and Los Angeles County Agricultural Opportunity Areas [AOA]) within these jurisdictions have been developed to support ongoing operations, in light of encroaching non-agricultural development. In addition, many of these agencies have right-tofarm policies and ordinances intended to reduce potential conflict from introduction of new commercial or residential development adjacent to farmlands or on prime agricultural land.

#### Meet growing demand for recreational space.

Responsibility for the expansion or creation of new recreational space, including parkland and passive open spaces remains with the numerous jurisdictions within the Antelope Valley Region, including the park and recreation departments of the counties and cities, the Open Space District of Los Angeles County, the California Parks Department, and the NPS. The City of Palmdale and the City of Lancaster, for example, provide a standard of 5 acres of parkland per 1,000 residents, whereas Kern County identifies a standard of 2.5 acres per 1,000 residents. Los Angeles County's standards are 4 acres per 1,000 residents of local parkland, and 6 acres per 1,000 residents of regional parkland. In addition, various private entities, such as land conservancies, trusts, and park support groups have developed or identified opportunities to promote and create additional parkland, open spaces and recreational space. Many of these agencies and groups have existing plans and policies, and most local watershed plans identify opportunities to expand recreation areas.

Improve integrated land use planning to support water management. Most land use planning policies within the local and regional plans, as discussed throughout this IRWM Plan, including those found specifically within the Antelope Valley Region's General Plans, identify a need or objective for improving integrated planning efforts across jurisdictional boundaries, as well as regional water management policies. One of the suggested management planning targets for the AV IRWM Plan calls for coordinating and developing a regional land use management plan by the year 2010, which directly implements the objectives and goals of the Antelope Valley Region's land use planning documents.

#### 8.1.3.1 Implementation of Local Plans

Implementation of the AV IRWM Plan will address many of the policies and goals found in the planning documents of the Antelope Valley Region. By doing so, it also plays a crucial role of placing these plans into a regional context, while preserving the outcomes of the individual planning efforts. Most of the implementation projects come directly from local planning documents. Altogether, the projects included in the AV IRWM Plan directly implement elements of a number of local plans and studies, including UWMPs, Water Recycling Master Plans, Water Conservation Master Plans, and Master Facilities Plans. The AV IRWM Plan also includes projects that meet the water quality objectives of the Lahontan RWQCB Basin Plan, and the water supply reliability, water quality, open space and recreation, and flood management goals, policies, and programs of the Antelope Valley Region's General Plans as discussed above.

## 8.2 INSTITUTIONAL STRUCTURE

### 8.2.1 Organizational Structures for Regional Collaboration

Several agencies with considerably different authorities and responsibilities share jurisdiction over aspects of the multi-faceted water management challenges faced by residents

of the Antelope Valley. The complexity of many of these water management challenges make them difficult for any single agency to solve on their own. Water managers within the Antelope Valley Region recognized the potential value in joining resources to define and address these challenges collectively. In order to do this, the multiple agencies need some organized structure to work together effectively. As a result, eleven public agencies formed the Antelope Valley Regional Water Management Group (RWMG) to develop the AV IRWM Plan. The RWMG formed when the eleven agencies signed a Memorandum of Understanding (MOU). The MOU defined their mutual agreement to contribute funds to help develop this IRWM Plan, provide and share informa-

"This process is really breaking down the barriers that have existed amongst the organizations the the Valley related to water – water resources, water supply, water demand, water banking, recycled water – all the issues we're trying to address in this process."

- Curtis Paxton, Antelope Valley State Water Contractors Association

tion, review and comment on drafts of this IRWM Plan, adopt the final Plan, and assist in future grant applications for the priority projects selected in this IRWM Plan. A copy of the signed MOU can be found in Appendix A. Under this current organizational structure, the RWMG is the decisionmaking body responsible for formal decisions regarding the scope and content of this IRWM Plan.

Another type of organizational structure often used to allow multiple agencies to work collaboratively is a Joint



Powers Authority (JPA). A JPA is formed when it is to the advantage of two or more public entities (e.g., local governments, or utility or transport districts) with common powers to consolidate their forces to acquire or construct a jointuse facility. Their bonding authority and taxing ability is the same as their powers as separate units. A JPA is distinct from the member authorities, and they have separate operating boards of directors, and these boards can be given any of the powers inherent in all of the participating agencies. In setting up a JPA, the constituent authorities must establish which of their powers the new authority will be allowed to exercise. A term and the membership and standing orders of the board of the authority must also be laid down. The joint authority can employ staff and establish policies independently of the constituent authorities.

A prominent JPA in the Antelope Valley Region is the Antelope Valley State Water Contractors Association (AVSWCA), formed in May 1999 by the three local SWP contractors of the Antelope Valley. The AVSWCA's Statement of Principals and Objectives are outlined in Section 1.2.1 of this IRWM Plan.

#### 8.2.2 Governance Structure

Governance structure means "decision-making" structure or management structure. As described above, the AV IRWM Plan was developed using a governance structure established through an MOU that prescribed the roles and responsibilities for the RWMG. The RWMG has operated over the past year using a systematic approach called "facilitated broad agreement." As part of this approach, the RWMG was the governing body and invited stakeholder involvement beyond the MOU signatories through frequently scheduled stakeholder meetings. These meetings were conducted according to the following steps for collaboration:

- · Adopt specific and measurable goals for the process
- Create a safe space for interaction
- Establish a clear course of action
- Demonstrate tangible progress
- · Iterate until the group is satisfied

These meetings were led by a professional facilitator with no direct association or stake in the outcome of any actions considered within the Plan. Material for the Plan discussed in each meeting has been developed by a consultant team in cooperation with RWMG members and other stakeholders and made available for review and comment by the stakeholders. This governance structure and approach has worked well to create the Plan.

While the structure and approach has been successful to create the plan, the RWMG discussed whether the MOU and facilitated broad agreement approach would work well to implement and update the Plan after it is adopted. Several potential options were discussed including selection of one willing existing agency within the RWMG, (the City of Palmdale for example), that would serve on behalf of the entire stakeholder group, or creation of a new legal entity, such as a new JPA to lead the collaboration with the stakeholder group and help implement the AV IRWM Plan.

The stakeholders decided that they would like to continue using the current approach of facilitated broad agreement to implement and update the AV IRWM Plan. However, several of the RWMG Members expressed a desire to form a more formal governance structure to implement the Plan over the next several years.

#### 8.2.2.1 Governance Subcommittee

A Governance Subcommittee was formed to explore options and prepare a recommendation for the IRWM Plan Stakeholder Group about how to establish an effective governance structure to implement the IRWM Plan. The Subcommittee was comprised of a wide representation of the Stakeholder group, inviting all entities within the Valley whose interests should be represented by the Subcommittee participate.

The Governance Subcommittee identified and prioritized objectives for the new Governance Structure, as well as recommended roles for the new structure. These are both provided below.

## 8.2.3 Objectives for New Governance Structure

During the meeting on August 29, 2007 the Governance Subcommittee identified and prioritized the following draft objectives to accomplish within next 2 to 3 years:

### 8.2.4 Recommended Roles for New Governance Structure

During the meeting on August 29, 2007 the Governance Subcommittee identified recommended roles for a new governance structure to serve within first 2 to 3 years:

- Provide focused leadership for implementing and updating IRWM Plan
- Serve as contracting agency for state or federal grant funds related to implementation of IRWM Plan
- Track and report performance related to IRWM Plan goals
- Focus efforts to identify potential sources of outside funding and assist local entities to compete for those funds
- Provide leadership to focus cooperative efforts for broad regional planning and implementation efforts such as:
- » regional water recycling
- » regional water quality preservation
- » regional water conservation programs
- » regional data and information management
- » regional groundwater banking program

Draft Objective	Priority Vote (5 is highest Priority)
Provide leadership to implement IRWM Plan and conduct regular open stakeholder meetings and provide quarterly updates	5.0
Assume authoritative liaison with DWR and contract	4.7
Complete 3 high priority projects	4.7
Establish enforceable water conservation policies	4.7
Provide assistance to local agencies to implement projects that provide regional benefit (tech- nical, financial, advisory, legal, grant writing, oversight assistance)	4.7
Serve as non-political watermaster	4.7
Accomplish water recycling program at some level	4.5
Bank X acre-feet of water for regional benefit	4.5
Seek additional funding opportunities	4.5
Identify promising sites for groundwater recharge	4.0
Gather and manage performance information for IRWM Plan (gather information to protect water quality)	3.0
Want to determine what to govern	0.1

The Subcommittee also identified the following factors that must be provided within a new governance structure to accomplish successfully the draft goals and serve the recommended roles:

- People dedicated to provide leadership
- » Initiate actions
- » Collaborate with others
- » Call public/stakeholder meetings, set agendas, and lead meetings
- » Prepare documents for quarterly updates
- » Identify, select, and apply for appropriate funding opportunities
- Capability to gather, compile and manage data and information
- Ability to execute and manage contracts
- Ability to receive and process financial transactions and meet acceptable accounting standards
- Expertise
- Operating funds
- Point of contact
- Process facilitation

The stakeholders understand that creating a new, more formal governance structure that will maintain the positive momentum the group has demonstrated during the past year until the year 2035 will likely require a few years. Therefore, the stakeholders agreed to establish a shortterm (2 to 3 years) governance structure first, with the intention of formalizing and transitioning into a longerterm governance structure as needed. The governance structure outlined below is proposed to begin starting in November 2007.

See Table 8-3 for the Plan Adoption Schedule.

#### 8.2.4.1 Regional Water Management Group

As described above, the RWMG was formed via MOU to contribute funds to help develop this IRWM Plan, provide and share information, review and comment on drafts of this IRWM Plan, adopt the final Plan, and assist in future grant applications for the priority projects selected in this IRWM Plan. The Governance Subcommittee recommended that the RWMG continue, and that the MOU be revised to include the implementation roles and responsibilities identified by the Subcommittee and stakeholders for governance of the IRWM Plan. In addition to these roles, it is proposed that the RWMG would fund the governance functions through contributions of cash or in-kind services, and therefore have budgetary and contracting authority over the governance structure. The RWMG will continue to engage stakeholders through regular public meetings to promote collaborative implementation and tracking of progress. The RWMG agreed to establish a working group called the Leadership Team to initiate actions to implement the IRWM Plan and to interface with the broader stakeholder group. Refer to Figure 8-1 for a schematic of this proposed model. The group has agreed to evaluate the effectiveness of this governance structure annually, and to explore replacing the RWMG with a more formal structure such as a JPA if needed.

#### 8.2.4.2 Leadership Team

The expanded MOU will create a Leadership Team to provide focused initiative and effort to accomplish the two year objectives for the governance structure and to serve the recommended roles identified above. The Leadership Team will be responsible for tasks such as:

- Collaborating and coordinating with stakeholders;
- Call public/stakeholder meetings, set agendas, and lead meetings;
- · Prepare documents for quarterly updates;
- Initiate actions with the Stakeholder group to identify, select, and apply for appropriate funding opportunities;

Table 8-3 AV IRWM Plan Adoption Schedule	
Date	Adoption Item
July 2, 2007	Release Public Draft IRWM Plan
July 10, & July 18, 2007	Public Workshops held on Public Draft IRWM Plan
August 1, 2007	Public Comments Due on Public Draft IRWM Plan
August - September 2007	Stakeholder meetings to refine the Draft IRWM Plan
October 17, 2007	Release final Admin Draft IRWM Plan
October 31, 2007	Comments Due on final Admin Draft IRWM Plan
November - December 2007	Public Hearings & Adoption by RWMG Governing Bodies



- Recommend to the Stakeholder group hire, and manage consultants as needed;
- Gather, compile and manage data and information as described in the RWMP and additional reporting as required;
- Execute and manage contracts as approved by the RWMG and Stakeholder group;
- Oversee, receive and process financial transactions and meet acceptable accounting standards;
- Identify and provide needed expertise when appropriate;
- Manage operating funds;
- · Serve as central point of contact for the RWMG;
- · Provide facilitation for implementation process;
- Initiate discussion to form recommendation for long-term governance; and
- Provide representation of regional issues to governing bodies.

The Leadership Team will include 7 members selected by the Stakeholder Group representing categories of waterrelated interested with the Antelope Valley:

Agricultural water users

- Conservation, Environmental, and Water Quality
- Municipalities
- Industry and Commerce
- · Land Owners/Public/Rural Town Councils
- Mutual water companies
- Urban water suppliers

In addition to these roles, it is proposed that the responsibilities of the Leadership Team serve as an oversight body during grant administration, should the Antelope Valley Region successfully receive grant funds to help implement the Plan. In this capacity, the Leadership Team would work with local project sponsors (described below) to solicit feedback on the grant administration process and provide dispute resolution if needed. The Leadership Team would help ensure effective communication between the contracting entity (described below) and the project sponsors. Additionally, the Leadership Team would sustain an open dialogue with the State regarding progress on the AV IRWM Plan implementation and continue to provide feedback on project progress.

#### 8.2.4.3 Larger Stakeholder Group

The larger stakeholder group, or planning group, is a group of all participants within the IRWM Plan process including agencies that comprise the RWMG as well as an extensive mix of other cities and regulatory, environmental, industrial, agricultural, and land-use planning agencies that represent all areas of the Antelope Valley Region. The stakeholder group has met at a least once per month to allow for discussion of issues facing the Antelope Valley Region and to develop the AV IRWM Plan. Through the facilitated broad agreement approach, decisions on behalf of the group were made by this larger stakeholder group. The Stakeholder Group has agreed to continue to meet at least once per guarter (4 times per year) to review progress with Plan implementation and to consider updates to the Plan (such as newly proposed projects or management actions that address the Regional Plan objectives).

#### 8.2.4.4 Regional/State Interface Contracting Entity

Governing the development, implementation, and updating of the AV IRWM Plan is different than administration or governance of potential grant funding for implementation projects. The Proposition 50 Guidelines require identification of a single contracting agency, or eligible grant recipient, should a contract be awarded and funding be received from DWR. Grant administration includes the ability to receive and administer funds to the awarded sponsored projects, to prepare the necessary progress reports and invoicing reports, to make investigations, and to execute, and file such documents and agreements with DWR as required.

The AVSWCA has taken the initiative to propose to its board to serve on behalf of the Leadership Team (and RWMG) as the legal entity to submit the Antelope Valley Region's application for Proposition 50 funds and to administer grant funds with the DWR. Some of the assumed responsibilities for this entity includes (but is not limited to): filing the grant application with the State; providing additional information if requested; having sufficient cash flow to buffer any delays in administering the grant; having sufficient staff to prepare and comply with all reporting requirements of the grant; and having generally acceptable accounting practices. All of these requirements are laid out in the grant agreement between the State and the contracting agency once the grant award is made.

Additionally, the AVSWCA would then contract with the implementing agencies or local project sponsors (in a manner consistent with the contract terms between

AVSWCA and the State) as described below. This contractual arrangement will require some clarification of the existing operating guidelines of AVSWCA to specify its roles and responsibilities and terms of service for committee members and a process for the administration of the grant funds, as well as clarification of the contracting terms with the project sponsors. In this manner, liability passed on from the State to the AVSWCA, would also be transferred through to the individual local project sponsors.

#### 8.2.4.5 Local Project Sponsors

Local project sponsors are those IRWM Plan stakeholder agencies or entities having projects that are included as part of the AV IRWM Plan, and whose projects have been decided by the larger stakeholder group that they should be included in the Proposition 50 grant application. Local project sponsors are assumed to implement their projects with or without the receipt of grant funding. As mentioned above, the local sponsors would enter into a contract with the contracting entity, or 'grantee' with the State when grant funds are awarded to support implementation of their sponsored project, and would therefore be bound to the conditions of that contract.

## 8.3 IMPLEMENTATION OF HIGH PRIORITY PROJECTS

#### 8.3.1 Lead Agency

The lead agencies are those agencies that have the principal responsibility for carrying out or approving the high priority projects proposed in the IRWM Plan. The lead agency is also generally responsible for determining the appropriate environmental document under the California Environmental Quality Act (CEQA), as well as for its preparation. Entities responsible for project implementation are identified in Section 7.3 in Table 7-2. The lead agencies for each of the high priority projects are also identified in their high priority project template forms, which can be found in Appendix F.

#### 8.3.2 Implementation Schedules

High priority projects have been defined as those that the stakeholders want to have implemented, or want to take action on, within the next two years. Specific timelines for some of the high priority projects were identified in Section 7.3 in Table 7-2. Their detailed implementation schedules are also identified in their high priority project template forms, which can be found in Appendix F. Also included in

Appendix F is a summary table which provides the high priority project schedules broken down even further into phases (i.e., planning, demonstration, design, and construction) as well as cost information.

"This collaborative effort will improve the competitiveness of the County of Los Angeles for future State and Federal grant funds to enhance regional water supplies, protect the environment, and provide for flood management."

> Michael Antonovich, Los Angeles County Supervisor, Fifth District

#### 8.3.3 Financial Needs of Selected High Priority Projects

The financial needs of the selected high priority projects will cover both the construction costs and the cost of operation and maintenance (O&M) throughout the IRWM Plan planning horizon. Refer to Section 7 for an estimate of the total cost of each of the high priority projects. Refer to the project template forms in Appendix F for information on the detailed cost breakdown for construction costs, O&M costs, administration costs, and other relevant costs associated with each of the projects. The anticipated funding match for each high priority project is also indicated on these forms. Also included in Appendix F is a summary table which provides the high priority project schedule and cost information.

Future funding will be needed to implement all the projects proposed in this IRWM Plan. The Cities of Palmdale and Lancaster, PWD, and others have already spent or committed large funding amounts on recycled water infrastructure, desert landscaping, modified ordinances and recycled water pilot projects. While many of the cities and agencies have funding mechanisms (impact fees, conservation fees, rate increases, etc.,) in place to fund their projects, there is still more need than there are financial resources available.

## 8.3.4 Beneficiaries and Funding/Financing Options

The potential beneficiaries of the IRWM Plan implementation are the stakeholders represented by the RWMG and include: all water users; residents; retail water purveyors; local jurisdiction/land use planning agencies; local, State, and Federal regulatory agencies; the environment; the building industry; the agricultural/farm industry; wastewater agencies; mutual water companies; the media; and others within the Antelope Valley Region jurisdiction.

Initial funding for the IRWM Plan effort was provided by the RWMG through a MOU. The funding/financing partners for the selected high priority projects are identified in the project template forms found in Appendix F. There are opportunities for grant funding that are available to the stakeholders in the Antelope Valley Region and that are well suited to many of their projects. Additional funds for O&M of the implemented projects will be included in future funding requests and provided by local agencies through matching funds. The source of these funds may include: water and wastewater general funds, capital improvement funds, general funds from local Cities, County departments, private organizations, member dues, etc. Local taxpayers may also fund these projects through rate increases, bond measures, and tax increases. Table 8-4 provides a summary of the funding opportunities that are available, broken into local, state, and federal funding sources. Table 8-5 shows which of these potential funding opportunities may potentially be well suited to the stakeholder identified projects in the IRWM Plan.

#### 8.3.4.1 Financial Packaging Strategy

As described in Section 8.3.4, there are many funding programs outside of the Antelope Valley Region that could provide financial opportunities for Stakeholder identified projects. As these funding opportunities become available, the list of prioritized projects in the AV IRWM Plan would be integrated to fit the future funding criteria. In this manner, a process would be established for integrating packages of projects for future funding programs. Included in the discussion was the list of high priority projects, the total project cost, the local cost share, the quantified project benefits, and the number of IRWM Plan objectives the projects contributed to. For example, the current opportunity is Proposition 50, Chapter 8, Round 2 Grant funding. Utilizing this process of strategic packaging, the Stakeholders collectively discussed which of the priority projects could be benefited the most by being funded through Proposition 50 Round 2 funds, and those that could be packaged for

Table 8-4 Possible Fu	nding Opportunities					
Funding Category	Program	Brief Description	Key Points	Eligibility	Submit Grant Application	Contact
LOCAL						
Local funding opportu	nities include bonds and p	property taxes for capital, parcel taxes, existing capital improvement budget	s, local sales taxes, utility fees, gasoline taxes, and	l water sales.		
PROPOSITION 50						
Conservation/Water	Prop 50-Chapter 7(g)	Program primarily funds projects not locally cost effective, and that provide water	Two step on-line process application process:	Cities, counties, districts, tribes,	DWR will post its 2007 WUE Proposal Solicitation Package Draft	Baryohay Davidoff, DWR
Use Efficiency (WUE)	Department of Water Resources (DWR) WUE Grant Program	savings, or in-stream flows that are beneficial to the Bay-Delta or the rest of the state. Consideration also for water quality and energy efficiency.	first step is concept proposal and second step is detailed on-line submittal.	non-profits; also utilities and mutual water companies for Section A, also universities, colleges, state and federal for section B.	Recommendations of grant-funded projects on website in June 2007. http://www.grantsloans.water.ca.gov/grants/efficiency.cfm	(916) 651-9666
Water Quality	Prop 50-Chapter 4 Department of Health Services (DHS) Safe Drinking Water Grants	Chapter 4a1: Small Community Water System Facilities: upgrade monitoring, treatment, or distribution infrastructure of small community water systems; must be in noncompliance with a safe drinking water standard	Project Funding: \$5,000-\$2 million	Small Community Water Systems: < 1,000 connections or 3,300 people 25% to disadvantaged communities	The universal preapplication (Prop 50, 84, and State Revolving Fund [SRF]) will be available for access from this website on June 1, 2007 http://www.dhs.ca.gov/ps/ddwem/funding/default.htm	Mark Bartson (707) 576-2734; state level (916) 449-5600
Water Quality	Prop 50-Chapter 4 DHS Safe Drinking Water Grants	Chapter 4a2: Demonstration Projects & Studies for Contaminant Treatment: Development and demonstration of new treatment and related facilities for water contaminant removal and treatment	Project Funding: \$50,000-\$2 million	Public water systems under DHS 25% to disadvantaged communities	The universal preapplication (Prop 50, 84, and SRF) will be avail- able for access from this website on June 1, 2007 http://www.dhs.ca.gov/ps/ddwem/funding/default.htm	Mark Bartson (707) 576-2734; state level (916) 449-5600
Water Quality	Prop 50-Chapter 4 DHS Safe Drinking Water Grants	Community Water System Monitoring Facilities: Water quality monitoring facilities and equipment; must be in non-compliance with a safe drinking water standard	Project Funding: \$5,000-\$2 million	Public water systems under DHS 25% to disadvantaged communities	The universal preapplication (Prop 50, 84, and SRF) will be avail- able for access from this website on June 1, 2007 http://www.dhs.ca.gov/ps/ddwem/funding/default.htm	Mark Bartson (707) 576-2734; state level (916) 449-5600
Water Quality	Prop 50-Chapter 4 DHS Safe Drinking Water Grants	Drinking Water Source Protection: For planning, preliminary engineering, detailed design, construction, education, land acquisition, conservation easements, equipment purchase, and implementing the elements of a Source Water Protection program	Project Funding: \$50,000-\$2 million	Public water systems under DHS 25% to disadvantaged communities	The universal preapplication (Prop 50, 84, and SRF) will be avail- able for access from this website on June 1, 2007 http://www.dhs.ca.gov/ps/ddwem/funding/default.htm	Mark Bartson (707) 576-2734; state level (916) 449-5600
Water Quality	Prop 50-Chapter 4 DHS Safe Drinking Water Grants	Disinfection By-Product Treatment Facilities: To meet DBP safe drinking water standards, must be in non-compliance with the EPA Stage 1 DBP Rule MCLs or treatment technique	Project Funding: \$50,000-\$2 million	Public water systems under DHS 25% to disadvantaged communities	The universal preapplication (Prop 50, 84, and SRF) will be avail- able for access from this website on June 1, 2007 http://www.dhs.ca.gov/ps/ddwem/funding/default.htm	Mark Bartson (707) 576-2734; state level (916) 449-5600
Water Quality	Prop 50-Chapter 4 DHS Safe Drinking Water Grants	Southern California Projects to Reduce Demand on the Colorado River: Assist in meeting drinking water standards and in meeting the state's commitment to reduce Colorado River water use to 4.4 MAF per year	Project Funding: \$50,000-\$20 million Max grant for a regional project: \$20 million per applica- tion up to a max of \$60 million	t Public water systems under DHS 25% to disadvantaged communities	The universal preapplication (Prop 50, 84, and SRF) will be avail- able for access from this website on June 1, 2007 http://www.dhs.ca.gov/ps/ddwem/funding/default.htm	Mark Bartson (707) 576-2734; state level (916) 449-5600
Water Quality	Prop 50-Chapter 6(b) DHS Safe Drinking Water Grants	Demonstration Projects and Studies for Contaminant Removal: Treatment or removal technology for the following contaminants: Petroleum products, such as MTBE and BTEX, N-Nitrosodimethylamine (NDMA), Perchlorate, Radionuclides, such as radon, uranium, and radium, Pesticides and herbicides, Heavy metals, such as arsenic, mercury, and chromium, Pharmaceuticals and endocrine disrupters	Project Funding: \$50,000-\$5 million No more than 30% of the funds can address a single contaminant Must address existing problems in CA	Public water systems under DHS 25% to disadvantaged communities	The universal preapplication (Prop 50, 84, and SRF) will be avail- able for access from this website on June 1, 2007 http://www.dhs.ca.gov/ps/ddwem/funding/default.htm	Mark Bartson (707) 576-2734; state level (916) 449-5600
Water Quality	Prop 50-Chapter 6c Safe Drinking Water Grants	Ultraviolet (UV) and Ozone Disinfection	Project Funding: \$50,000-\$5 million; must address an Maximum Contaminant Level (MCL) compliance viola- tion, surface water treatment microbial requirements, or other mandatory disinfection that can only be met by UV/ or ozone; the water system must demonstrate that it can operate and maintain the treatment facilities; ozone treatment projects shall be designed and operated to minimize residual disinfection byproduct formation from the ozone treatment	Public water systems under DHS 25% to disadvantaged communities	The universal preapplication (Prop 50, 84, and SRF) will be avail- able for access from this website on June 1, 2007 http://www.dhs.ca.gov/ps/ddwem/funding/default.htm	Mark Bartson (707) 576-2734; state level (916) 449-5600
Water Security	Prop 50-Chapter 3 Water Security Program	DHS Water security grants for protection of state, local, and regional drinking water systems http://www.dhs.ca.gov/ps/ddwem/Prop50/2006PPLs/default.htm	Grants cannot be used for the routine responsibilities or projects previously required by a DHS compliance order, permit or regulation. Grants can be used for: warning systems, fencing, protective structures; contamina- tion treatment facilities, emergency interconnections; communications systems, and other projects; Response Plan, Emergency Notification Plan; \$10 million maximum grant per project; \$50,000 minimum; 1 to 1 local resource match to grant award (except small and DAC)	State, local, and regional drinking water systems under DHS regula- tion; 25% reserved for disadvan- taged communities	The universal preapplication (Prop 50, 84, and SRF) will be avail- able for access from this website on June 1, 2007 http://www.dhs.ca.gov/ps/ddwem/funding/default.htm	Mark Bartson (707) 576-2734; state level (916) 449-5600

Table 8-4 Possible Fu	nding Opportunities (co	ontinued)				
Funding Category	Program	Brief Description	Key Points	Eligibility	Submit Grant Application	Contact
Water Management	Prop 50-Chapter 8 Integrated Regional Water Management Program, Round 2	Implementation grants for: water supply reliability, water conservation, water use efficiency; stormwater capture, storage, treatment and management; removal of invasive non-native specie, creation and restoration of wetlands, open space and watershed lands; NPS reduction; groundwater recharge/management; desalination; water banking, exchange, reclamation; improvement of water quality; flood control programs; stormwater capture/ percolation; improve wildlife habitat; watershed management; and demonstration projects to develop new drinking water treatment/ distribution.	Approximately \$64 M available for SoCal region; Max award is \$25 M (any award from Round 1 to be considered against this cap). 10% funding match requested. On-stream or off-stream surface water storage facilities are not eligible.	Public Agencies, Non-profits, and Members of a Regional Water Management Group	PSP released: June 2007 Step 1: August 1, 2007 Step 2: January 2008. http://www.grantsloans.water.ca.gov/grants/integregio.cfm	Norman Shopay, DWR (916) 651-9218 or Scott Couch, State Water Board (916) 341-5658
<b>PROPOSITION 84 (BY</b>	CHAPTER)					
Multiple Topics	Prop 84 Water supply/ flood protection, etc.	In general, this bond law would provide funding for flood control, Integrated Regional projects, water quality, etc.	\$5.388 Billion major grants for local entities through IRWMPs. \$210 M earmarked for Los Angeles sub-region	IRWMP is a primary tool of Prop 84	Final Guidelines November 2007; TBD	Judy Colvin (916) 651-9665 jcolvin@water.ca.gov
Chapter 2 Safe Drinking Water	DHS	Emergency/Urgent water supply protection	\$10 M budget; max grant \$250,000	Interregional	The universal preapplication (Prop 50, 84, and SRF) will be avail- able for access from this website on June 1, 2007 http://www.dhs.ca.gov/ps/ddwem/funding/default.htm	DHS (916) 449-5600
Chapter 2 Safe Drinking Water	DHS	Small Community & Disadvantaged Communities (DAC)	\$180 M budget, max grant \$5 million	Interregional	The universal preapplication (Prop 50, 84, and SRF) will be avail- able for access from this website on June 1, 2007 http://www.dhs.ca.gov/ps/ddwem/funding/default.htm	DHS (916) 449-5600
Chapter 2 Safe Drinking Water	DHS	State Share of Safe Drinking Water SRF Projects	\$50 M budget	Interregional	The universal preapplication (Prop 50, 84, and SRF) will be avail- able for access from this website on June 1, 2007 http://www.dhs.ca.gov/ps/ddwem/funding/default.htm	DHS (916) 449-5600
Chapter 2 Safe Drinking Water	SWRCB	State Share State Water Pollution Control Revolving Fund	\$80 M budget	Interregional	Final Guidelines November 2007; TBD	Judy Colvin (916) 651-9665 jcolvin@water.ca.gov
Chapter 2 Safe Drinking Water	DHS	loans and grants to Prevent GW Pollution to drinking water	\$60 M budget	Interregional	The universal preapplication (Prop 50, 84, and SRF) will be avail- able for access from this website on June 1, 2007 http://www.dhs.ca.gov/ps/ddwem/funding/default.htm	DHS (916) 449-5600
Chapter 2 Safe Drinking Water	DWR	IRWMP - see Prop 50 Chapter 8 description above	\$215 M budget	4-Los Angeles/Ventura	Final Guidelines November 2007; TBD	Judy Colvin (916) 651-9665 jcolvin@water.ca.gov
Chapter 2 Safe Drinking Water	DWR	IRWMP - see Prop 50 Chapter 8 description above	\$100 M budget	Interregional	Final Guidelines November 2007; TBD	Judy Colvin (916) 651-9665 jcolvin@water.ca.gov
Chapter 2 Safe Drinking Water	SWRCB	Reduce agriculture runoff pollution into surface waters	\$15 M budget	Interregional	Final Guidelines November 2007; TBD	Judy Colvin (916) 651-9665 jcolvin@water.ca.gov
Chapter 3 Flood Control	DWR	Floodplain mapping	\$30 M budget	Interregional	Final Guidelines November 2007; TBD	Judy Colvin (916) 651-9665 jcolvin@water.ca.gov
Chapter 3 Flood Control	DWR	Flood Control Projects	\$275 M budget	Interregional	Final Guidelines November 2007; TBD	Judy Colvin (916) 651-9665 jcolvin@water.ca.gov
Chapter 3 Flood Control	DWR	Flood Corridor Project (Water Code 79037)	\$36 M budget; max \$5 M	Interregional	Final Guidelines November 2007; TBD	Judy Colvin (916) 651-9665 jcolvin@water.ca.gov
Chapter 3 Flood Control	DWR	State Share Flood Control Project	\$180 M budget	Interregional	Final Guidelines November 2007; TBD	Judy Colvin (916) 651-9665 jcolvin@water.ca.gov
Chapter 4 Planning	DWR	Plan and Feasibility studies/ climate chg evaluate impacts on flood and water systems, integration of flood and water systems, modeling, reservoir operations	\$65 M budget	Interregional	Final Guidelines November 2007; TBD	Judy Colvin (916) 651-9665 jcolvin@water.ca.gov

Table 8-4 Possible Fun	nding Opportunities (co	ntinued)				
Funding Category	Program	Brief Description	Key Points	Eligibility	Submit Grant Application	Contact
Chapter 5 Protection	DWR	State Water Project (SWP) obligations for wildlife, recreation per water code Section 11912	\$54 M budget	Interregional	Final Guidelines November 2007; TBD	Judy Colvin (916) 651-9665 jcolvin@water.ca.gov
Chapter 5 Protection	Secretary Resources	California River Parkways Act Projects	\$72 M budget	Interregional	Final Guidelines November 2007; TBD	Judy Colvin (916) 651-9665 jcolvin@water.ca.gov
Chapter 5 Protection	DWR	Urban streams restoration program	\$18 M budget	Interregional	Final Guidelines November 2007; TBD	Judy Colvin (916) 651-9665 jcolvin@water.ca.gov
Chapter 5 Protection	California Conservation Corps	California Conservation Corps incl \$25M for fuel reduction and stream/ river restoration and \$20M for acquisition and dev of local conserv corps and local res. Cons activities	\$45 M budget	Interregional	Final Guidelines November 2007; TBD	Judy Colvin (916) 651-9665 jcolvin@water.ca.gov
Chapter 5 Protection	SWRCB	Matching Grants to prevent stormwater contamination	\$90 M budget	Interregional	Final Guidelines November 2007; TBD	Ms. Erin Ragazzi, Division of Financial Assistance Project Development Section 1A (916) 341-5733
Chapter 6 Forest and Wildlife Conservation	Wildlife Conservation Board? SWRCB? CDF??DFG	Forest and wildlife conservation projects	\$180 M budget	Interregional	Final Guidelines November 2007; TBD	Judy Colvin (916) 651-9665 jcolvin@water.ca.gov
Chapter 6 Forest and Wildlife Conservation	SWRCB	Protect/recover Threatened/Endangered species, natural corridors, old growth/riparian and wetlands, implement CA Comprehensive Wildlife Strategy	\$135 M budget	Interregional	Final Guidelines November 2007; TBD	Judy Colvin (916) 651-9665 jcolvin@water.ca.gov
Chapter 6 Forest and Wildlife Conservation	University of California	up to \$25m of \$135m for Natural Reserve System for training		Interregional	Final Guidelines November 2007; TBD	Judy Colvin (916) 651-9665 jcolvin@water.ca.gov
Chapter 6 Forest and Wildlife Conservation	Wildlife Conservation Board? SWRCB? CDF??DFG	Natural Community Conservation Plans	\$90 M budget	Interregional	Final Guidelines November 2007; TBD	Judy Colvin (916) 651-9665 jcolvin@water.ca.gov
Chapter 6 Forest and Wildlife Conservation	SWRCB	Protect ranches, farms, oak woodlands	\$45 M budget	Interregional	Final Guidelines November 2007; TBD	Judy Colvin (916) 651-9665 jcolvin@water.ca.gov
Chapter 8 Parks and Nature Education	Department of Parks and Recreation	Improve Public Access by Develop, acquire, interpret, restore & rehabilitate State Park system & resources	\$400 M budget	Interregional	Final Guidelines November 2007; TBD	Judy Colvin (916) 651-9665 jcolvin@water.ca.gov
Chapter 8 Parks and Nature Education	Department of Parks and Recreation	Grants for nature education and facilities	\$100 M budget	Interregional	Final Guidelines November 2007; TBD	Judy Colvin (916) 651-9665 jcolvin@water.ca.gov
Chapter 9 Sustainable	TBD by Legislation	Urban greening that reduce energy, conserve water, improve air/water quality, incl not less than \$20M for urban forestry projects	\$90 M budget	Interregional	Final Guidelines November 2007; TBD	Judy Colvin (916) 651-9665 jcolvin@water.ca.gov
Chapter 9 Sustainable	Department of Parks and Recreation	Competitive grants for local and regional parks	\$400 M budget	Interregional	Final Guidelines November 2007; TBD	Judy Colvin (916) 651-9665 jcolvin@water.ca.gov
Chapter 9 Sustainable	TBD by Legislation	Plan grants and incentives for regional and local land use plans designed to promote water conservation, reduce auto use/fuel consumption, encourage greater infill/compact dev, protect natural res/ag lands, revitalize urban/comm centers	\$90 M budget	Interregional	Final Guidelines November 2007; TBD	Judy Colvin (916) 651-9665 jcolvin@water.ca.gov
PROPOSITION 82						
Water Supply	DWR	New Local Water Supply: water supply development projects and feasi- bility studies (loan)	Construction of dams, reservoirs, water storage tanks, well field development projects, recycled water distribution facilities; \$5 million per eligible project; \$500.000 per eligible feasibility study	Local Public Agency	Continuous filing	David Rolph (916) 651-9635

Table 8-4 Possible Fur	nding Opportunities (co	ntinued)				
Funding Category	Program	Brief Description	Key Points	Eligibility	Submit Grant Application	Contact
PROPOSITION 1E						
Flood management	Prop 1E Disaster Preparedness and Flood Prevention Bond Act of 2006 (Overview)	The Strategic Growth Plan levees proposals would authorize a \$4 billion general obligation bond on the November 2006 ballot to pay for levee repairs and improvements, upgrade flood protection for urban areas, improve emergency response capabilities, and provide grants for stormwater flood management projects.	For state-federal project levees and the Delta (\$3B) Flood Control Subventions (\$500M) Flood protection corridors, bypasses, and alluvial floodplains (\$290M) Stormwater Flood Management Grants (\$300M)		Available and Upcoming/TBD	
Flood management	Prop 1E Disaster Preparedness and Flood Prevention Bond Act of 2006	Evaluation, repair, rehab, reconstruction, replacement of levees, weirs, bypasses and facilities of the State Plan of Flood Control	\$3 billion; \$200 M except for Folsom Dam		Criteria to be posted on flood SAFE website upon approval of the Bond Expenditure Plan	George Qualley (916) 574-0384
Flood management	Prop 1E Disaster Preparedness and Flood Prevention Bond Act of 2006	Payment of state share of non-federal costs for projects not in the State Plan for Flood Control	\$500 M		Available and Upcoming/TBD	Dena Uding (916) 574-2745
Flood management	Prop 1E Disaster Preparedness and Flood Prevention Bond Act of 2006	Protection, creation, and enhancement of flood protection corridors and bypasses	\$290 M		Floodway Corridor program: rules released September 2007; application package released January 2008; submittal deadline April 2008	Earl Nelson (916) 574-1244
Flood management	Prop 1E Disaster Preparedness and Flood Prevention Bond Act of 2006	Grants for stormwater flood management projects w- nonstate cost share of not less than 50%; not part of State Plan for Flood control, multiple benefits, comply with Basin Plans, consistent with IRWMP	\$300 M		Available and Upcoming/TBD	TBD
<b>PROPOSITION 13</b>						
Water Conservation	DWR	Agricultural Water Conservation: voluntary, cost effective projects or programs to improve agricultural water use efficiency, and feasibility studies for such projects	Canal or ditch piping or lining projects; tail- water recovery projects; and replacement of leaking distribution system components; \$5 million per eligible project	Local public agencies and incorporated mutual water companies	Continuous filing; application being updated http://www.grantsloans.water.ca.gov/loans/conserva- tion.cfm	Baryohay Davidoff (916) 651-9666
OTHER						
Water Quality	Department of Health Services	Drinking Water State Revolving Fund: Provide low interest loans and/or grants to assist public water systems in achieving and maintaining compli- ance with the Safe Drinking Water Act (SDWA)	Project must be needed to comply with SDWA and project must be on program's priority list; system must meet technical, managerial, and financial require- ments; all applications are for loans; financial review determines if grant funds apply; \$100,000 per planning study; \$20 million per project and \$30 million per entity per cap grant; disadvantaged communities can receive a zero interest loan and disadvantage public and mutual systems may receive partial grant funding	Must be a public water system	The universal preapplication (Prop 50, 84, and SRF) will be available for access from this website on June 1, 2007 http://www.dhs.ca.gov/ps/ddwem/funding/default. htm	Steve Woods (916) 449-5624
Water Supply	State Department of Housing and Community Development	Community Development Block Grant (CDBG) program: Project must prin- cipally benefit low income persons/households; for example: create jobs for low income persons, provide housing units for low income households, and provide clean water to residents of community with over half of its residents being low income	Pay for project feasibility study, final plans and specs, site acquisition and construction, and grant administra- tion costs; pay for one time assessment fees for low income families; pay for installation of private laterals and hook up fees for low income families; Each allocation sets funding award limits in their annual NOFA (typically \$500,000)	cities or counties that are not under HUD's CDBG entitlement program; jurisdictions can pay for their own system or give the funds to private or public water providers	Notices of Funding Availability released each year http://www.hud.gov/offices/cpd/ communitydevelopment/programs/	Patrick Talbot (916) 552-9361
Conservation	Department of Parks and Recreation	Land and Water Conservation Fund-For acquisition or development projects. Acquisition projects shall be for outdoor recreation, development projects shall include the construction of new and/or renovation of existing facilities for outdoor recreation. http://www.parks.ca.gov/default.asp?page_id=21360	50% reimbursement, match can be money, services, or real property		2008 TBD	TBD
Environment	Resources Agency	Environmental Enhancement and Mitigation Program-Resource Lands: Projects for the acquisition, restoration, or enhancement of watersheds, wildlife habitat, wetlands, forests, or other natural areas. Roadside Recreational: projects for the acquisition and/or development of roadside recreational opportunities	no match required	Local, state, federal government and non-profit	FY 2007-2008 TBD http://resources.ca.gov/eem/	TBD

Table 8-4 Possible Fun	ding Opportunities (co	ntinued)				
Funding Category	Program	Brief Description	Key Points	Eligibility	Submit Grant Application	Contact
Habitat	Department of Parks and Recreation	Habitat Conservation Fund: The program provides funds to local governments under the California Wildlife Protection Act of 1990. http://www.parks.ca.gov/default. asp?page_id=21361		Counties and districts are eligible to apply. Eligible districts are defined in Subdivision (b) of Section 5902 of the Public Resources Code.	Applications must be postmarked or delivered to the California Department of Parks and Recreation, no later than October 1, 2007	TBD
Land Acquisition	Wildlife Conservation Board (WCB): various funding sources	Land Acquisition Program: Acquires real property or rights in real property on behalf of DFG and also grant funds to acquire real property or rights in real property (contact South Coast Region Headquarters) 4949 Viewridge Avenue, San Diego, CA 92123 (858) 467-4201 http://www.wcb.ca.gov/Pages/land_acquisition_program.htm	Project Funding: continuous; depends on avail- able sources.	governmental entities or nonprofit organizations	The WCB accepts applications for funding on a contin- uous basis depending on available funding sources.	TBD
Restoration	WCB: Restoration	California Riparian Habitat Conservation Program: Projects that develop coordinated conservation efforts aimed at protecting and restoring the state's riparian ecosystems, including trees and other vegetation and the physical features normally found on the stream banks and flood plains associated with healthy streams. Habitat Enhancement and Restoration Program: eligible enhancement and restoration projects must provide for the long-term maintenance of the restored and/or enhanced habitat.	Project funding: continuous; depends upon available sources Contract Regional Fish and Game Headquarters for information.	Non-profit conservation organi- zations and federal, state, or local government agencies. Program allows cooperative project agree- ments with agencies of state, local agencies or non-profit organizations.	The WCB accepts applications for funding on a contin- uous basis depending on available funding sources.	TBD
Wastewater/Watershed	Environmental Protection Agency (EPA)-SWRCB	Clean Water State Revolving Fund (SRF) Program: Projects for publicly-owned wastewater treatment facilities. Funds may be used to better the quality of watersheds and protect groundwater resources through planning, design, and construction; to build or rehabilitate sewer collection systems and urban wet weather flow control activities, including stormwater and sanitary and combined sewer control measures. The program also funds a publicly or privately-owned nonpoint source and estuary management projects, such as controlled runoff from ag. land, conservation tillage, soil erosion, development of stream bank buffer zones, and wetlands protection and restoration. Estuary management projects may include restoration of wildlife habitat and sewage pump-out facilities.	Program also offers significant funding for nonpoint source pollution control and estuary protection, assistance to a variety of borrowers and partnerships with other funding sources. Matching funds are not required. http://www. swrcb.ca.gov/funding/srf.html	Borrowers range from munici- palities, communities of all sizes, farmers, homeowners, small businesses, and nonprofit orga- nizations. CWSRF's partner with banks, nonprofits, local govern- ments, and other federal and state agencies	Continuous application process, currently accepting applications. \$200-\$300 Million Annually available The final 2007/2008 SRF Project Priority List is scheduled for adoption by the State Water Board consideration at the July 17, 2007 Board Meeting	TBD
Water Quality	EPA-SWRCB	State Revolving Fund Loan Nonpoint Source Protection Program: Address water quality problems associated with discharges from nonpoint source dischargers and for estuary enhancement. http://www.swrcb.ca.gov/funding/srf.html	Planning study to determine cost effective alternative, CEQA compliance, dedicate source repayment and compliance with certain Federal requirements.	Point source dischargers, munici- palities and nonpoint source dischargers, public and private entities	Continuous application process, currently accepting applications. \$200-\$300 Million Annually available The final 2007/2008 SRF Project Priority List is scheduled for adoption by the State Water Board consideration at the July 17, 2007 Board Meeting	TBD
Water Supply	California Infrastructure and Economic Development Bank (i-bank)	Infrastructure State Revolving Fund (ISRF) Program: Provides financing for construction and/or repair of publicly owned water supply and treatment systems including these components: drainage, supply, flood control, treatment and distribution	Eligible uses include: to acquire land, construct, and/or repair water collection and treat- ment systems, including equipment; \$10 million maximum per project; annual juris- diction funding caps; Interest rate is 67% of Thompson's Municipal Market Index for A rated security; up to 30 year terms; continuous filing	Applicant must be a local munic- ipal entity; project must meet tax-exempt financing criteria	Continuously accepting applications.	Diane Cummings (916) 324-4805
FEDERAL						
Water and Waste Disposal	United States Department of Agriculture (USDA) Rural Development	Water and Waste Disposal program that provides for additional security for commercial lenders that finance community water systems	Funds may be used for costs associated with planning, design, and construction of new or existing systems; eligible projects include storage, distribution, source development; no funding limits, but average project size is \$3-5 million	Banks and other commercial lenders are eligible applicants; cities towns public bodies and census designated places with populations less than 10,000	Continuous filing; need update for FY 2007-2008	Dave Hartwell USDA State Office (530) 792-5817
Desalination	United States Bureau of Reclamation (USBR)	Desalination and Water Purification Research and Development Program: purpose of program is to address a broad range of desalting and water purification needs in order to increase the supply of usable water available to the US. With a focus on the desalination of water as one solution for increased water demands, this program supports attempts to develop cost effective methods of producing usable water from salty and brackish water. http://www.usbr.gov/pmts/water/research/DWPR/index.html	Matching funds are required. Applicants must generally provide a minimum 75% of project costs in non-Federal cash or in-kind resources. Approximately 25% of applications received are awarded funds in a typical year.	Individuals, Institutions of higher educa- tion, commercial or industrial organiza- tions, private entities (including State and local governments), Indian Tribal governments, and the US-Mexico bi-national research foundations and inter-university research programs established by the two countries.	Update pending; check website	TBD

Table 0-4 Possible Pu					
Funding Category	Program	Brief Description	Key Points	Eligibility	Submit Grant Appl
Environment	EPA	Source Reduction Assistance: The purpose of this program is to provide an overall benefit to the environment by preventing the generation of pollutants at the source. This program seeks projects that support source reduction, pollution prevention, and/or source conser- vation practices. Source reduction activities include: modifying equipment or technology; modifying processes or procedures; reformulating or redesigning products; substituting raw materials; and generating improvements in housekeeping, maintenance, training, or inventory control. Pollution prevention activities reduce or eliminate the creation of pollutants by: using raw materials, energy, water or other resources more efficiently; protecting natural resources by conservation; and resource conservation practice activi- ties; prevent pollution, promote the re-use of materials and/or conserve energy and materials.		Units of state, local, and tribal government; independent school district governments; private or public colleges and universities; nonprofits; and community-based grassroots organizations.	Proposal submission http://www.epa.gov
Restoration	US Fish and Wildlife Service (USFWS)	Wildlife Restoration Grants (SWG): Development and implementation of programs that benefit wildlife and their habitat, including species that are not hunted or fished. Both planning and implementation of programs are permitted.	25% Match required.	All state fish and wildlife agen- cies may submit grant proposals.	Continuous filing http://www.fws.gov,
Restoration	NFWF	Five-Star Restoration Program: Purpose of the program is to support community-based wetland, riparian, and coastal habitat restoration projects. Applicants must demonstrate that measurable ecological, educational, social, and/or economic benefits are expected to result from the completion of the project. Preferences will be given to the projects that: 1) Are part of a larger watershed or community stewardship effort; 2) Include specific provisions for long term management and protection; and 3) Demonstrate the value of innovative, collaborative approaches to restoring the nation's waters.	There are no matching requirements; however, applicants are strongly encouraged to show funding support from other sources. Matching funds include cash and/or in-kind goods and services and can be from both federal and non-federal sources. Five Star Restoration Grant applications can be downloaded from the NFWF website at http://www.nfwf.org/ programs/5star-rfp.cfm	State and local agencies, private landowners, and other interested parties.	Proposals for Five Sta early March each yea late May early June e
Restoration	US Fish and Wildlife Service (USFWS)	Partners for Fish and Wildlife Program: Restoration projects may include, but are not limited to, the following: 1) Restoring wetland hydrology by plugging drainage ditches, breaking the drainage systems, installing water control structures, dike construction, and re-establishing old connections with waterways; 2) planting native trees and shrubs in formally forested wetlands and other habitats; 3) planting native grasslands and other vegetation; 4) installing fencing and off-stream livestock watering facilities to allow for restoration of stream and riparian areas; 5) removal of exotic plants and animals that compete with native fish and wildlife and alter their natural habitats; 6) prescribed burning as a method of removing exotic species and to restore natural disturbance regimes necessary for some species survival; 7) reconstruction of in-stream aquatic habitat through bio-engineering techniques, and 8) re-establishing fish passage for migratory fish and removing barriers to movement.	There is no formal application process. Applicants will work with Fish and Wildlife Service biologists for their region to develop a plan for their proposed project. 50% match of the project's cost. Matching fund can be in cash or in-kind resources from non-Service sources. The entire program cannot pay for more than 50% of the combined costs of all projects.	Tribes, schools, local govern- ments, businesses, and organiza- tions. Any privately-owned land is potentially eligible for restora- tion under this program.	http://www.fws.gov/
Water Conservation	USBR	Challenge Grant Program: Through the Challenge Grant Program, Reclamation provides 50/50 cost share funding to irrigation and water districts and states for projects focused on water conservation, effi- ciency, and water marketing. Projects are selected through a competitive process, based on their ability to meet the goals identified in Water 2025: Preventing Crises and Conflict in the West. The focus is on projects that can be completed within 24 months that will help to prevent crises over water.	Funding for Water 2025 Challenge Grant projects is awarded on a competitive basis through a merit-based review process performed by a Technical Proposal Evaluation Committee (TPEC), comprised of experts in various disciplines from across Reclamation. Priority is given to projects that will be completed within 24 months from the date of the award, and that will decrease the likelihood of conflict over water. Projects are prioritized and selected based on the applica- tion by the TPEC on the following criteria: 1) The extent to which the project involves water marketing; 2) The amount of water conserved as a percent of average annual supply; 3) Likelihood that the estimated project benefits will be attained; 4) Demonstration of the applicant's financial ability to complete the project; 5) the costs are reasonable for the work proposed; 6) Evidence of collaboration and stakeholder involvement in the project; 7) the proposed work is located in a "hot spot" (hot spots are geographic problem areas identi- fied on Potential Water Supply Crises by 2025 illustration http://www.doi.gov/water2025/supply.html), and 8) ?	Grants valued at only \$1.3 M were awarded in 2006 versus awards valued at \$9.9 M the previous year. Budget amount pending.	The FY 2008 budget million http://www.doi.gov/

cation	Contact
deadline June 18, 2007 p2/pubs/grants/srap07.htm	TBD
grants/state.html	TBD
r Restoration Grants are due in r. Grant applicants are notified in ach year.	TBD
grants/state.html	TBD
request for Water 2025 is \$11 water2025/grant.html	TBD

Table 8-4 Possible Fun	ding Opportunities (co	ntinued)				
Funding Category	Program	Brief Description	Key Points	Eligibility	Submit Grant Application	Contact
Watershed	EPA	EPA Wetlands Program Development Grants: Projects that promote the coordination and acceleration of research, investigations, experiments, training, demonstrations, surveys, and studies relating to the causes, effects, extent, prevention, reduction, and elimination of water pollution http://www.epa.gov/owow/wetlands/grantguidelines/	Three priority areas identified by the EPA: Developing a comprehensive monitoring and assessment program; improving the effec- tiveness of compensatory mitigation; and refining the protection of vulnerable wetlands and aquatic resources. Typically \$25,000 to \$250,000, but no set amount. 25% match required. Not currently soliciting RFPs	States, tribes, local governments, interstate associations, intertribal consortia, and national non- profit, non-governmental organi- zations are eligible to apply.	2008 schedule TBD http://www.epa.gov/owow/wetlands/grantguidelines/	TBD
Watershed Conservation	National Park Service	Rivers, Trails, and Conservation Assistance Program: Purpose is to conserve rivers, preserve open space, and develop trails and greenways. The program provides staff assistance to help build partnerships to achieve community set goals, assess resources, develop concept plans, engage in public participation, and identify potential sources of funding. This program provides technical assistance only in the planning phases of conservation activities. No funding will be awarded to successful appli- cants. The following is a partial list of river project areas accepted by the agency: Community waterfronts; Economics; Floodplain planning; Hydro (re) licensing; Watersheds; Water trails; and wild and scenic water areas.	Projects will be evaluated on how they meet the following criteria: 1) A clear anticipated outcome leading to on the ground success; 2) commitment, cooperation, and cost-sharing by interested public agencies and nonprofit organizations; 3) Opportunity for significant public involvement; 4) Protection of significant natural and/or cultural resources and enhance- ment of outdoor recreational opportunities; and 5) Consistency with the National Park Service mission and RTCA goals.	Nonprofits, community groups, tribes, or tribal governments; and state or local government agencies.	Applications are due August 1st for assistance during the next fiscal year. http://www.nps.gov/rtca/	TBD
Wetlands	Natural Resources Conservation Service	Watershed Protection and Flood Prevention: Purpose of the program is to support activi- ties that promote soil conservation and the preservation of the watersheds of rivers and streams throughout the US. This program seeks to preserve and improve land and water resources by preventing erosion, floodwater, and sediment damages. Program supports work of improvement associated with: 1) Flood prevention including structural and land treatment measures, 2) conservation, development, utilization, and disposal of water, or 3) conservation and proper utilization of land. Successful applicants under this program receive support for watershed surveys and planning, as well as watershed protection and flood prevention operations. Funding for watershed surveys and planning is intended to assist in the development of watershed plans to identify solutions that use conservation practices, including nonstructural measures, to solve problems.	Matching funds are not required: applicants must generally provide matching ranging from 0%-50% in cash or in-kind resources depending on such factors as project type and the kinds of structural measures a project proposes.	States, local governments, and other political subdivisions; soil or water conservation districts; flood prevention or control districts and tribes. Potential applicants must be able to obtain all appropriate land and water rights and permits to successfully implement proposed projects.	Update pending http://www.nrcs.usda.gov/programs/watershed/index. html	TBD
Wetlands	US FWS	North American Wetlands Conservation Act (NACWA): projects must provide long-term protection of wetlands and wetlands dependent fish and wildlife.	Partners must minimally match the grant request at a 1 to 1 ratio.	Organizations and individuals who have developed partner- ships to carry out wetlands conservation projects in the US, Canada, and Mexico.	Continuous filing http://www.fws.gov/grants/state.html	TBD
Wildlife Conservation	NFWF	The National Fish and Wildlife Foundation operates a conservation grants program that awards matching grants, on a competitive basis, to eligible grant recipients, including federal, tribal, state, and local governments, educational institutions, and non-profit conservation organizations. Project proposals are received on a year-round revolving basis with two decision cycles per year. Grants typically range from \$25,000-\$250,000, based upon need. http://nfwf.org/guidelines.cfm	Matching grants are awarded to projects that: 1) Address priority actions promoting fish and wildlife conservation and the habitats on which they depend; 2) Work proactively to involve other conservation and community interests; 3) Leverage available funding; and 4) Evaluate project outcomes.	The Foundation is mandated by Congress to ensure that each federal dollar awarded is leveraged with a non- federal dollar or equivalent goods and services. The foundation refers to these funds as matching funds. As a policy, the Foundation seeks to achieve at least a 2:1 ratio return on its project portfolio - \$2 raised in matching funds to every federal dollar awarded.	Project Pre-Proposal Received by April 1, and Sept. 1; Project Full Proposal Due June 1 and Nov 1 http://www.nfwf.org/AM/Template. cfm?Section=Browse_AII_Programs	TBD

Table 8-5 IRWM Plann	ng Projects vs. Fundin	g Opportunities
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Table 8-5 IRWM Planning	Projects vs. Funding Opportunities																																	
		State	Progr	ams																						Fede	ral Pro	gram						
Project Sponsor	Project Name	Prop 50 - (Ch 3) Water Security Program	Prop 50 - (Ch 4) Drinking Water Source Protection	Prop 50 - (Ch 6) Safe Drinking Water Grants	Prop 50 - (Ch 7) DWR WUE Grant Program	Prop 50 - (Ch 8) IRWMP, Round 2	Prop 84 - (Ch 2) Safe Drinking Water, Water Quality, and Other Projects	Prop 84 - (Ch 3) Flood Control Projects	Prop 84 - (Ch 4) Statewide Water Planning	Prop 84 - (Ch 5) Protection of Rivers, Lakes, Streams	Prop 84 - (Ch 6) Forest and Wildlife Conservation	Prop 84 - (Ch 8) Parks and Nature Education Facilities	Prop 84 - (Ch 9) Sustainable Communities & Climate Change	Prop 82 - Water Supply Development Projects	Prop 1E - Flood Management	Prop 13 - Ag Water Conservation	Other - DHS - Drinking Water SRF grant/loans for public water systems	Other - Community Development Block Grant Program	Other - Dept.of Parks and Rec. Land and Water Conservation Fund Program	Other - Environmental Enhancement and Mitigation Program (Wetlands, habitat)	Other - Dept. of Parks and Rec. Habitat Conservation Fund	Other - Wildlife Conservation Board: Land Acquisition	Other - Wildlife Conservation Board: Restoration	Other - EPA-SWRCB Clean Water State Revolving Fund (SRF) Program	Other - CA Infrastructure & Economic Development Bank Infrastructure SRF Program	USDA Rural Development: Water and Waste Disposal Program	USBR Desalination & Water Purification Research Program	EPA Source Reduction Assistance Program	USFWS Wildlife Restoration Grants	NFWF Programs	USBR Challenge Grant Program	EPA Wetlands Program Development Grants	NPS Rivers, Trails, and Conservation Assistance Program	NRCS Watershed Protection and Flood Prevention
Antelope Valley Conservancy	Antelope-Fremont Watershed Assessment and Plan				Х					Х	Х		Х						Х	Х	Х	Х		Х					Х	Х			Х	Х
AVEK	Water Supply Stabilization Project – Westside Project					Х								х																				
AVEK	Water Supply Stabilization Project – Eastside Project													Х																				
Antelope Valley Water Conservation Coalition	Comprehensive Water Conservation/Efficient Water Use Program				Х	Х			Х				Х			х				Х											Х			
Cities of Lancaster, Palmdale, LAFCD, Kern County	Develop Coordinated Antelope Valley Flood Control Plan							Х	Х						Х				Х															Х
Antelope Valley Conservancy, Cities of Lancaster, Palmdale, LA County	Development of a Coordinated Land Use Management Plan								х		Х								х	х		х								х			х	х
City of Lancaster	Groundwater Recharge Using Recycled Water (GWR-RW) Pilot Project					Х		Х						Х	Х																			
City of Lancaster	Tertiary Treated Water Conveyance & Incidental Groundwater Recharge of Amargosa Creek Avenue M to Avenue H													х																				
City of Lancaster	Amargosa Creek Pathways Project				Х	Х		Х					Х		Х									Х					Х	Х			Х	
City of Lancaster	Ecosystem & Riparian Habitat Restoration of Amargosa Creek: Avenue J north to Avenue H				Х	Х				Х	Х		Х							Х	Х	Х		Х					Х	Х			Х	
City of Palmdale	Barrel Springs Detention Basin and Wetlands				Х			Х		Х					Х								Х		Х									Х
City of Palmdale	Anaverde Detention Basin, Dam & Spillway at Pelona Vista Park							Х							Х										Х									Х
City of Palmdale	Hunt Canyon Groundwater Recharge and Flood Control Basin							Х							Х										Х									Х
City of Palmdale	Avenue Q and 20th Street East Basin (Q-West Basin)							Х							Х										Х									Х
City of Palmdale	45th Street East Flood Control Basin (Q-East Basin)							Х							Х										X									X
City of Palmdale	42nd Street East, Sewer Installation Upper Amargosa Creek Recharge, Flood Control, &		X			Х	X	х							Х					х				Х	X									X
City of Palmdala	Riparian Habitat Restoration Project					V																												
	Lancaster WRP Stage V					X																		X	x									
LACSD	Lancaster WRP Stage VI					~																		X	X									
LACSD	Lancaster WRP Proposed Effluent Management Sites																							Х	Х									
LACSD	Palmdale WRP Existing Effluent Management Sites					Х																		Х	Х									
LACSD	Palmdale WRP Stage V					Х																		Х	Х									
LACSD	Palmdale WRP Stage VI																							Х	Х									
LACSD	Palmdale WRP Proposed Effluent Management Sites																							Х	Х									
LACWWD40	Aquifer Storage and Recovery Project: Injection Well Development					х								Х											Х									
LACWWD40	Aquifer Storage and Recovery Project: Additional Storage Capacity													Х											Х									

Table 8-5 IRWM Planning	Projects vs. Funding Opportunities																																	
		State	e Progr	ams																						Fede	ral Pro	ogram	;					
Project Sponsor	Project Name	Prop 50 - (Ch 3) Water Security Program	Prop 50 - (Ch 4) Drinking Water Source Protection	Prop 50 - (Ch 6) Safe Drinking Water Grants	Prop 50 - (Ch 7) DWR WUE Grant Program	Prop 50 - (Ch 8) IRWMP, Round 2	Prop 84 - (Ch 2) Safe Drinking Water, Water Quality, and Other Projects	Prop 84 - (Ch 3) Flood Control Projects	Prop 84 - (Ch 4) Statewide Water Planning	Prop 84 - (Ch 5) Protection of Rivers, Lakes, Streams	Prop 84 - (Ch 6) Forest and Wildlife Conservation	Prop 84 - (Ch 8) Parks and Nature Education Facilities	Prop 84 - (Ch 9) Sustainable Communities & Climate Change	Prop 82 - Water Supply Development Projects	Prop 1E - Flood Management	Prop 13 - Ag Water Conservation	Other - DHS - Drinking Water SRF grant/loans for public water systems	Other - Community Development Block Grant Program	Other - Dept. of Parks and Rec. Land and Water Conservation Fund Program	Other - Environmental Enhancement and Mitigation Program (Wetlands, habitat)	Other - Dept. of Parks and Rec. Habitat Conservation Fund	Other - Wildlife Conservation Board: Land Acquisition	Other - Wildlife Conservation Board: Restoration	Other - EPA-SWRCB Clean Water State Revolving Fund (SRF) Program	Other - CA Infrastructure & Economic Development Bank Infrastructure SRF Program	USDA Rural Development: Water and Waste Disposal Program	USBR Desalination & Water Purification Research Program	e EPA Source Reduction Assistance Program	USFWS Wildlife Restoration Grants	NFWF Programs	USBR Challenge Grant Program	EPA Wetlands Program Development Grants	NPS Rivers, Trails, and Conservation Assistance Program	NRCS Watershed Protection and Flood Prevention
LACWWD40	Groundwater Banking													Х												Х								
LACWWD40	Implement Evapotranspiration (ET) Controller Program				Х	Х							Х			Х															Х			
LACWWD40	Water Waste Ordinance				Х	Х							Х																		Х			
LACWWD40	Water Conservation School Education Program				Х	Х						Х																			Х			
LACWWD40	Ultra Low Flush Toilet (ULFT) Change Out Program				Х	Х							Х																		Х			
LACWWD40	Avenue M and 60th Street West Tanks													Х											Х									
LACWWD40	Avenue K Transmission Main, Phases I-IV					Х								Х											Х									
LACWWD40	Partial Well Abandonement of Groundwater Wells for Arsenic Mitigation	Х	Х	Х		Х	Х										Х																	
LACWWD40	North Los Angeles/Kern County Regional Recycled Water System (All Phases)					Х								Х																				
LADPW	Quartz Hill Storm Drain							Х							Х									Х	Х									
Leona Valley Town Council	Precision Irrigation Control System				Х	Х							Х			Х															Х			
Leona Valley Town Council	Stormwater Harvesting				Х	Х		Х					Х		Х	Х															Х			
No Current Sponsor/J. Goit	Amargosa Water Banking & Stormwater Retention Project							Х																										
PWD	Littlerock Dam Sediment Removal					Х																												
PWD	Water Conservation Demonstration Garden				Х	Х						Х	Х			Х															Х			
PWD	Groundwater Recharge - Recycled Water Project													Х																				
PWD	New PWD Treatment Plant						Х										Х								Х									
PWD	ET-Based Controller Program				Х	Х							Х			Х															Х			
QHWD	Partial Well Abandonement of Groundwater Wells for Arsenic Mitigation	Х	Х	Х		Х	Х										Х								Х									
RCSD	KC & LAC Interconnection Pipeline						Х							Х											Х									
RCSD	Place Valves and Turnouts on Reclamaimed Water Pipeline													Х											Х									
RCSD	Purchasing Spreading Basin Land					Х																			Х									
RCSD	Deep wells to Recapture Banked Water					Х								Х											Х									
RCSD	Gaskell Road Pipeline					Х								Х											Х									
RCSD	Tropico Park Pipeline Project													Х											Х									
RCSD	RCSD's Wastewater Pipeline					Х								Х											Х									
Western Development & Storage, LLC	Antelope Valley Water Bank					Х								Х																				

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future funding opportunities such as for Proposition 84 or Proposition 1E.

The initial resulting priority package for Proposition 50 Round 2 as determined by the Stakeholders is shown below in Table 8-6. Local match percentages are preliminary estimates and will not be finalized until the grant application has been submitted. For project details on project cost, and local match sources, refer to the high priority project templates provided in Appendix F.

One benefit of using this approach is to more accurately compare this IRWM Plan's performance with regards to meeting its planning targets as shown in Table 8-7. When

Table 8	Table 8-6 Package Selected for Proposition 50, Round 2 Grant Application													
	Project Name	Total Cost (Millions \$s)(a)	Prop 50 Funding(a)	Local Match(a)	% Match(a)	WS benefits (AFY)								
RW-1	Antelope Valley Recycled Water Project Phase 2	\$10.90	\$3.00	\$7.90	72%	8,400								
WS-1	Upper Amargosa Creek Recharge, Flood Control & Riparian Habitat Restoration Project	\$13.50	\$3.00	\$10.50	78%	10,000								
WC-1	Comprehensive Water Conservation/Water Use Efficiency Program	\$0.90	\$0.63	\$0.27	30%	3,500								
WI-2	Littlerock Dam Sediment Removal	\$5.50	\$1.10	\$4.4	80%	1,000								
WQ-1	Lancaster Stage V	\$74.80	\$7.50	\$67.30	90%	NA								
WQ-3	Palmdale Stage V	\$94.60	\$7.50	\$87.10	92%	NA								
RW-2	Groundwater Recharge Using Recycled Water Pilot Project	\$6.00	\$2.00	\$4.00	67%	2,500								
	Grant Administration Costs		\$0.5											
	Total Package	\$206.20	\$25.23(b)	\$181.47	88%	25,400(c)								

Notes:

(a) Total project cost, funding request amounts, and local match estimates are preliminary amounts that the Stakeholders have identified in order to come up with a suite of packages best suited for the current funding opportunity at this time. These estimates will continue to be refined until the Proposition 50, Step 2 application Proposal Solicitation Package is prepared.

(b) The maximum amount that can be requested is \$25 million.

(c) This total package benefit has been revised from the original estimate of 72,200 AFY in the Draft AV IRWM Plan submitted for Public Review and referenced in some of the letters of support contained in Appendix H.

Table 8-7 Comparison of Cumulative Project Benefits to	Selected Planning Targ	jets	
WMSA Benefit Type	Planning Target	Quantified Benefit	% of Target
Water Supply (AFY)			
Reduce mismatch of supply and demand in average years	73,600 to 236,800 AFY	25,400 AFY	11%
Supplement average supply to meet dry year demand	50,600 to 57,400 AFY	0 AFY	0%
Supplement average supply to meet multi-dry demand	0 to 62,000 AFY	0 AFY	0%
Water Quality			
Increase in recycled water use by 2015 (33%)	13,200 AFY	10,900 AFY	83%
Increase in recycled water use by 2025 (66%)	36,300 AFY	10,900 AFY	30%
Increase in recycled water use by 2035 (100%)	65,000 AFY	10,900 AFY	17%
Environmental Management			
Open Space & Habitat (acres) by 2015	2,000	115	6%
Land Use Management			
Farmland in rotation (acres)	100,000	TBD	TBD
Public parks and recreational amenities (acres)	5,000	TBD	TBD

new projects are implemented their benefits can be added to the table and the percentages recalculated. Measuring IRWM Plan performance is discussed further in Section 8.5.3 below. public, and consolidate information to be used in other state programs. These strategies are explained in more detail below.

#### 8.4 DATA MANAGEMENT

This section discusses the importance of collecting, managing, disseminating and utilizing data to create a sustainable integrated plan. A comprehensive data management approach will help to quickly identify data gaps, detect and avoid duplication, support statewide data needs, and integrate with other regional and statewide programs.

A wide variety of information is necessary to effectively manage water. The kinds of data needed include information regarding water quality, quantity, population demographics, climate and rainfall patterns, treatment plant effluent, habitat locations and needs, water costs, and more. Data is vitally important to agencies trying to maximize operating efficiency and design projects with limited budgets. The types of data available, current relevance and trends, and knowledgeable people that can interpret the data are all important. Equally important is the opportunity for Federal and State agencies to view local data for their own monitoring needs and to better understand local conditions.

The collection, management, dissemination and utilization of data (e.g., information gathered from studies, sampling events, or projects) are an essential element to creating a sustainable integrated plan. Information needs to be available to regional leaders, stakeholders, and the public to facilitate effective planning and decision-making. A comprehensive data management approach will help to quickly identify data gaps, detect and avoid duplicate data collection efforts, support statewide data needs, and integrate with other regional and statewide programs.

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As part of this IRWM Plan, the data management strategies described below will be applied to coordinate data collection between implementation projects, leverage existing data available from ongoing statewide and regional programs, and provide timely data to stakeholders and the

#### 8.4.1 Management and Data Reporting

Dissemination of data to stakeholders, agencies, and the general public is integrated into the AV IRWM Plan process to ensure overall success. A requirement of the Proposition 50 Guidelines is the routine reporting on project performance. The routine collection of this data naturally lends itself to the routine collection and reporting that is required as part of the AV IRWM Plan process. The stakeholders have suggested, as one potential option which would have to be agreed to by the RWMG, that the AVSWCA, as the potential grant contracting entity, compile the reporting of this IRWM Plan and work individually with the project proponents to receive updates on individual project progress. It was suggested that a standardized reporting format be created which the AVSWCA could use to compile this data, which could then be uploaded to the project website described in more detail below. Data collected or produced as part of the AV IRWM Plan will then be presented and disseminated during quarterly meetings as discussed in Section 8.6.1.

A public website has been created to store data and information about the AV IRWM Plan process so that the public can find information about public meeting dates, agendas, and notes. The website provides information on the AV IRWM Plan process and posts annual reports and relevant documents that can downloaded. Data collected during the AV IRWM Plan process will be available on the website as well. The website will also provide links to other existing monitoring programs to promote data between these programs and the AV IRWM Plan. This will provide a means to identify data gaps (e.g., information needed to provide a more complete assessment of the status of a specific issue or program) and to ensure that monitoring efforts are not duplicated between programs.

The AV IRWM Plan website, www.avwaterplan.org, provides a mechanism for stakeholders to upload project information regarding water supply, water quality, and other benefits of the project, which will be collected in a database to manage, store, and disseminate information to the public. A data collection template will be available on the website in the future so that data collected during the AV IRWM Plan can be stored and managed in a consistent format. This template will be compatible with those used in the statewide Groundwater Ambient Monitoring and Assessment (GAMA) and the Surface Water Ambient Monitoring Program (SWAMP) programs to assist in the sharing and integration of data with these programs.

#### 8.4.2 Statewide Data Needs

This subsection identifies statewide data needs including information required to evaluate the effectiveness of projects that produce non-traditional data.

Data sets and reports will be reviewed for their applicability to the Antelope Valley Region and statewide data needs. This knowledge will provide information necessary to identify data gaps, and data gaps represent information crucial to a greater understanding of the Antelope Valley Region and help develop context for future projects (as discussed in Section 8.5.2 below). The IRWM Plan can identify multiobjective projects that integrate appropriate management strategies to meet the statewide water supply, water quality, and beneficial use needs.

The AV IRWM Plan process will also collect non-traditional data (i.e., summarizing the effectiveness of water conservation programs throughout the Antelope Valley Region) in a comprehensive way that can be a powerful contribution to statewide water management efforts. Comprehensive data collection and measurement of these efforts will provide leadership and guidance to growing metropolitan areas throughout California.

#### **8.4.3 Existing Monitoring Efforts**

This subsection will provide the existing surface and groundwater level and quality monitoring efforts in the Antelope Valley Region and will identify opportunities for additional monitoring and/or for partnership.

Overall the AV IRWM process has identified a need for better coordination of groundwater level and quality monitoring efforts in the Region. As discussed in more detail below, there is some coordination of groundwater monitoring efforts in the Region, and there is local historical data (accumulated and consolidated by C. Seal through the assistance of the Antelope Valley College) that has been collected which can be made available for coordination with these efforts. However there are still portions of the basin which are not well mapped, or where there are data gaps. One of the planning targets for the Plan calls for additional mapping and monitoring of the groundwater basin, which will help to address these identified problems, as well as the plan performance measures once they are better refined.

#### 8.4.3.1 Surface Water

Surface water for the Region comes from the state aqueduct and Littlerock Reservoir. According to PWD, of the two surface water sources, normally the State water is more prevalent (dependant on the amount of snow pack in the northern sierras and rainfall in northern California in any given year), whereas, water from Littlerock Reservoir is less prevalent (dependent on the amount of snow pack and rainfall in the local mountains in any given year). Both of these waters are transferred either from the aqueduct or Littlerock dam into Palmdale Lake to provide local storage. This surface water is then filtered and disinfected to make it safe for potable uses. See Section 8.4.3.2 below for the discussion of drinking water quality monitoring.

#### 8.4.3.2 Drinking Water

Drinking water quality is monitored through the following means:

- Safe Drinking Water Act (SDWA) compliance monitoring and reporting: All public water systems are required to produce water that complies with the SDWA. To this end, specific monitoring information is required and conducted routinely. Results of the monitoring are reported to the California DPH. In addition, monitoring information is required to be published in the annual Consumer Confidence Report (also required by the SDWA).
- Unregulated Contaminant Monitoring Rule Results: The 1996 SDWA Amendments mandate that EPA publish a list of unregulated contaminants that may pose a potential public health risk in drinking water. This list is called the Contaminant Candidate List (CCL). The initial 1998 accounting listed 60 contaminants. USEPA uses this list to prioritize research and data collection efforts for future rulemaking purposes. The 1996 SDWA amendments incorporated a tiered monitoring approach. The rule required all large public water systems and a nationally representative sample of small public water systems serving less than 10,000 people to monitor the contaminants. The information from the monitoring program for the Antelope Valley Region will be compiled and submitted to the State as well as be available on the website.

#### 8.4.3.3 Groundwater

AVEK and the USGS have coordinated groundwater monitoring efforts in the Antelope Valley Region for several years. Groundwater monitoring is also required in areas on and surrounding the Edwards Air Force Base (AFB) as well as regional landfills.

### 8.4.4 Integration of Data into Existing State Programs

Data collected as part of this IRWM Plan can be used to support existing state programs such as the SWAMP, GAMA, and California Environmental Resources Evaluation System (CERES).

- Surface Water Ambient Monitoring Program (SWAMP): All the surface water data collected as part of the IRWM Plan will be consistent with SWAMP database comparability guidelines. Data will be collected in a database that is compatible with the SWAMP database and will be exported annually to the state database using the required data submission formats. Where appropriate IRWM Plan sampling activities will be performed according to SWAMP quality assurance requirements.
- Groundwater Ambient Monitoring and Assessment (GAMA): Groundwater data collection efforts as part of the IRWM Plan will be coordinated with the needs of the GAMA program so that the data can be shared and integrated into the GAMA database. Field sampling efforts will be coordinated with the GAMA program to eliminate duplicative data collection efforts and fill data gaps. Data will be consistent with GAMA database specifications so that it can be easily submitted, integrated and shared.
- California Environmental Resources Evaluation System (CERES): All data and reports will be sent to CERES so that information will be available and useful to a wide variety of users.

## 8.5 TECHNICAL ANALYSIS AND PLAN PERFORMANCE

#### 8.5.1 Technical Analysis

This subsection describes how the projects identified for implementation in the AV IRWM Plan are supported through technical studies, including the commission and recommendations from a Technical Advisory Committee (TAC) (discussed in Section 3 and in more detail in Section 8.5.1.1 below), to help document the Antelope Valley Region's water supply picture and the ability of the projects to meet their intended objectives.

The projects identified for implementation in the AV IRWM Plan are supported through technical studies and reports that document their ability to meet the intended objectives. The technical support for these projects and related project concepts on a programmatic level is summarized by IRWM Plan objective below.

## Provide reliable water supply to meet the Antelope Valley Region's expected demand between now and 2035.

Projects selected to meet this objective could include water conservation, desalination, recycled water projects, and groundwater recharge projects. Water conservation projects typically involve educational programs, ultra low flush toilet change out programs and the use of proven technology, such as irrigation controllers. The technical feasibility of desalting projects has been well established and efficiency is increasing due to improvements in membrane technology. However, economic feasibility of desalting projects would need further consideration. Recycled water projects utilize treatment processes for producing water that meets Title 22 standards. Groundwater recharge projects would require technical feasibility and hydrogeological studies.

Establish a contingency plan to meet water supply needs of the Antelope Valley Region during a plausible disruption of SWP water deliveries. Projects selected to meet this objective are similar to the projects of the previous objective and include water conservation, desalination, recycled water projects, and groundwater recharge projects. The same technical support described above would apply.

Stabilize groundwater levels at current conditions. The objective will be implemented though management of groundwater, groundwater banking and aquifer storage and recovery projects utilizing State Water Project (SWP) and/or recycled water, and likely under the direction of the adjudication. Conceptual level studies have been conducted to determine the feasibility of using recycled water for groundwater recharge.

Provide drinking water that meets customer expectations. Protecting and improving drinking water quality involves using treatment unit processes that have been well documented including disinfection processes such as ultraviolet light and ozone injection; and contaminant removal processes including granular activated charcoal,

ion exchange, and reverse osmosis.

Protect aquifer from contamination. Groundwater protection involves pumping management and monitoring injection water quality. Groundwater models have been developed for the Antelope Valley Region and the USGS has conducted studies related to injection, storage and recovery in Lancaster. As stated above, conceptual level studies have been conducted to determine the feasibility of using recycled water for groundwater recharge.

Protect natural streams and recharge areas from contamination. Projects that will meet this objective include stream restoration and wetlands restoration, as

well as projects that are developed from integrated land use management planning documents. Stream restoration projects are supported through a number of studies that document proven hydromodification techniques.

Maximize beneficial use of recycled water. This objective will be met through several recycled water projects including using reclaimed water for injection, storage, and recovery. Recycled water projects utilize treatment processes for producing water that meets Title 22 standards. Groundwater recharge projects would require technical feasibility and hydrogeological studies.

Reduce negative impacts of storm water, urban runoff, and nuisance water. This objective will be implemented by a series of runoff reduction, capture and infiltration projects, as well as non-structural programs. A key element for success of the program is optimal project site selection to ensure high levels of capture and pollutant reduction.

Preserve open space and natural habitats that protect and enhance water resources and species in the Antelope Valley Region. The Antelope Valley Conservancy, local General Planning documents and local agencies have developed a number of documents that identify potential opportunities for preserving existing open space and creating additional open space and recreation. Projects identified under this objective include ecosystem and riparian habitat restoration.

Maintain agricultural land use within the Antelope Valley

Region. Projects that will assist in the maintenance of agricultural land use within the Antelope Valley Region include the utilization of recycled water for irrigation purposes as well as the implementation of water conservation practices including the use of precision irrigation control systems.

Meet growing demand for recreational space. The Antelope Valley Conservancy, local General Planning documents and local agencies have developed a number of documents that identify potential opportunities for preserving existing open space and creating additional open space and recreation. These documents also contain information that assists in determining planning criteria such as appropriate density as well as how to allow access while minimizing the negative impacts of human activity on the natural environment.

Improve integrated land use planning to support water management. The local General Planning documents have identified a number of water management resource strategies that integrate with land use planning efforts. Coordination of projects proposed in this IRWM Plan with those planning documents will help to achieve this objective. Further, the Antelope Valley Conservancy is actively working to enhance watershed based management planning with the Antelope Valley which integrates with the need to coordinate a regional land use management plan.

#### 8.5.1.1 Technical Advisory Committee (TAC)

As discussed in Section 3, a TAC was formed to discuss the water budget elements for the Antelope Valley Region, including water supply and water demand issues. The TAC consisted of 13 representatives from 11 agencies including local land use owners, the County Farm Bureaus, and water/ wastewater management agencies. These representatives were nominated by the stakeholder groups; nominations were open to all participants. The TAC summarized and reviewed approximately 12 documents regarding the water budget elements. In a day long workshop on March 28, 2007, the TAC discussed the key assumptions and data used in those documents to address each of the water budget elements and reached board agreement for how to proceed with Section 3 of this IRWM Plan. The TAC focused on sources of agricultural acreage data, crop water use requirements, estimates of natural recharge, and estimates of return flow for agricultural, urban, and wastewater users. The primary TAC recommendations included the following (refer to Section 3 for discussion of all assumptions):

#### **Urban Water Demands:**

- Remove assumption about baseline conservation; allows for use of conservation as a management action
- Evaluate household-based population projections and compare to per capita projections
- Assume groundwater extractions by smaller mutuals are 5 percent of municipal and industrial (M&I) pumping until additional data is received

#### Agricultural Water Demand:

- Compare sources of Agricultural acreage data from:
- » Agricultural Commissioner
- » Farm Advisor Inspection Reports
- » AVEK Satellite Imagery
- Present and use County Farm Advisor's Crop Water Requirements
- Assume Agricultural demand remain at 2005 levels for projections

#### Groundwater:

- Add discussion of change in groundwater levels
- Add groundwater contour maps

#### Natural Recharge:

- · Assume recharge occurring in alluvial fans
- · Assume deep percolation on valley floor is 0 AFY
- Discuss previous estimates of recharge
- Assume a range of natural recharge approximately 30,300 to 81,400 AFY for projections

#### Agricultural Return Flows:

- Assume irrigation efficiency of 75 percent, thus:
- » Return flow = 33 percent of required water
- » Return flow = 25 percent of applied water
- Remove 10-year time delay for agricultural return flows to reach groundwater table

#### Wastewater Return Flow:

· Assume return flow rate is 10 percent of applied water

#### **Urban Return Flow:**

- Assume irrigation efficiency is same as for agriculture (75 percent) thus:
- » Return flow = 25 percent of applied water
- Assume outdoor water use is 70 percent of total urban
   use
- · Verify indoor/outdoor ratio

#### 8.5.2 Data Gaps

This subsection discusses the data sets and reports used for preparation of this IRWM Plan and discussion of data gaps that were identified. Numerous data sets and reports were reviewed for their applicability to the Antelope Valley Region and statewide data needs. This knowledge provided the information necessary to identify the data gaps. Data gaps represent information crucial to a greater understanding of the Antelope Valley Region and help develop context for future projects and management actions.

Data gaps that have already been identified during the preparation of the AV IRWM Plan and discussed in Section 3, Issues and Needs, include the ability to quantify:

- Actual agricultural pumping
- Agricultural acreage by crop-type
- Outdoor verses Indoor water use
- Groundwater Return Flows
- Water Demand by Water Sector for the Antelope Valley Region
- Subsurface Flow

- Consumptive Use Losses in the Basin
- The amount of water available for recovery from surface water runoff, particularly from Amargosa Creek
- The amount of water available for recovery through stormwater capture
- · Natural groundwater recharge
- · Groundwater recharge loss due to septic removal
- · Safe yield of the basin
- · Historical and current groundwater pumping records

It is recommended that additional monitoring and studies be conducted to fill in these data gaps.

#### 8.5.3 IRWM Plan Performance

#### 8.5.3.1 Performance Measures

This subsection develops measures that will be used to evaluate strategy performance, monitoring systems that will be used to gather performance data, and mechanisms to adapt strategy implementation and operations based on performance data collected.

Generally, the success of the AV IRWM Plan will depend on how well the individual plan objectives are accomplished. Achievement of all of these objectives will, in large part, determine the success of local integrated regional water management planning processes. Additionally, the success may be attributed to the AV IRWM Plan when individual projects meet their goals and objectives and help to cumulatively and positively address individual plan objectives.

This IRWM Plan is a dynamic document, part of an ongoing local effort to achieve integration of local water management. The process, through stakeholder participation and plan revisions, will continue for many years and will be an effective mechanism for addressing the water management issues facing the Antelope Valley Region. As a consequence, on an ongoing basis, plan objectives, regional priorities, and statewide priorities will be reviewed for relevance and modified as needed to ensure the overall IRWM Plan reflects changing needs and continues to be effective. Additionally, the projects identified for future implementation will be reviewed and evaluated periodically to ensure that current plan objectives will be met and that the proposed projects offer the greatest benefit possible. Periodically, a new set of projects will be developed to address plan objectives and State and regional priorities.

Performance measures for each of the planning targets discussed in Section 4 are addressed below. These

measures are based on the AV IRWM Plan objectives, and were developed to allow progress of the overall IRWM Plan to be measured. This section describes the monitoring methods and programs that will be used to collect data and the mechanisms by which this data will drive future improvements to projects and the AV IRWM Plan.

It is recognized that more detail is needed for a number of these performance measures in order for them to sufficiently be measured and implemented. Therefore, the Stakeholder group agreed to continue to refine these performance measures as the draft Plan was finalized and until adopted. In order to develop measures that will realistically provide the Stakeholder group with a mechanism to measure its progress out until the year 2035, the group decided to commission a 'Performance Advisory Committee' or PAC. The PAC researched, collaborated, and recommended the following set of performance measures to the larger Stakeholder group.

# Reduce (73,600 to 236,800 AFY) mismatch of expected supply and demand in average years by providing new water supply and reducing demand, starting 2009.

Implementation of a project with a quantifiable benefit, either supply enhancement, or demand reduction with a known timeline for implementation or realization of the benefit will allow for measurement of this planning target. For example, on the demand management side, the performance of this planning target could be measured through the number of water conservation devices installed. Each agency participating in a water conservation program would maintain records of water conservation devices provided to customers for installation, primarily ultra low flush toilets (ULFT). The number of water conservation devices provided on an annual basis would be recorded and the estimated water savings per unit determined through use of existing documentation and accepted methodologies, such as CUWCC worksheets, and would be submitted on a monthly or guarterly basis for inclusion in a central data management program as described in Section 8.4. The volume of recycled water produced will be monitored by the treatment plants and Wastewater Operations Reports maintained by the governing agency. This target will also be met by additional potable water produced and stored. Annual precipitation data for groundwater and surface water conditions, total volumes of recycled water produced, potable water produced, and potable or recycled water stored will be recorded on a monthly or quarterly basis by the individual agencies managing the projects and included in the central data management program, as described in Section 8.4.

Provide adequate reserves (50,600 to 57,400 AFY) to supplement average condition supply to meet demands

during single-dry year conditions, starting 2009. The performance of this planning target can be measured through monitoring the amount of water in reserve each year, and recording the volumes of groundwater banked and withdrawn quarterly, with the cumulative total amount of water banked also recorded quarterly. As water is put into storage for purposes of reserve, the total mismatch and reduction in demand for meeting this single-dry year target volume would be recorded and included in the central data management program. .

Provide adequate reserves (0 to 62,000 AF/4-year period) to supplement average condition supply to meet demands during multi-dry year conditions, starting 2009. The performance of this planning target would similarly be measured through monitoring the amount of water in reserve each year, and recording the volumes of groundwater banked and withdrawn quarterly, with the cumulative total amount of water banked also recorded quarterly. As water is put into storage for purposes of reserve, the total mismatch and reduction in demand for meeting multidry year conditions would be recorded and included in the central data management program.

Demonstrate ability to meet regional water demands without receiving SWP water for 6 months over the summer, by June 2010. The ability to provide a diversity of water supply sources to meet peak demands over the summer without receiving SWP water can be measured by first determining how much water is needed during that time period and then comparing that number to how much water is available as an emergency or demand-reduction source. The total volume of water required during the 6-month peak summer period would be measured through monitoring SWP deliveries from AVEK, LCID, and PWD in 2010 average conditions. Once the demand is determined, the current reserve supply can be quantified by measuring the total water supply available as emergency supply sources, such as banked water reserves, emergency transfer contracts, short-term paid non-use contracts, the maximum demand reduction that can be achieved through an aggressive water conservation program, and the overall storage capacity within recharge and extraction facilities. Annual total volumes would be recorded and included in a central data management program, and the demand compared against the supply reserves to show whether there is sufficient supply (or potential to reduce demand) to meet the loss of SWP supply.

Manage groundwater levels throughout the basin such that a 10-year moving average of change in observed groundwater levels is greater than or equal to 0, starting January 2010. The ability to stabilize long-term groundwater levels in the region by showing groundwater

recharge and extractions are in balance can be measured through monitoring groundwater levels through a GAMA Program well monitoring program, and recording volumes of groundwater pumped and banked. Groundwater levels should be monitored, at a minimum, on a quarterly basis to account for seasonal variations. In order to sufficiently measure the performance of this planning target, a number of details about measuring needs to be identified including, but not limited to, the number of groundwater monitoring wells, which wells to be monitored, which subbasins to be monitored, who will collect the data, and how it will be coordinated. The data acquired through these monitoring efforts will be included in the central data management program.

## Continue to meet Federal and State water quality standards as well as customer standards for taste and

aesthetics throughout the planning period. To measure the performance of this planning target, water quality will be tested in accordance with EPA and Consumer Confidence Reporting (CCR) Protocols, and the data compared to adopted water quality standards, such as California Drinking Water Standards established by the California Department of Public Heath (DPH). If the measurements indicate that compliance is not being achieved, additional water quality monitoring of taste and odor causing compounds, such as geosmin and algaes could be undertaken. To monitor overall customer satisfaction and perceived taste and aesthetics, consumer input would be solicited at community fairs and in semi-annual mail-in surveys. The data acquired through these monitoring efforts will be recorded by the local water districts and agencies responsible for providing drinking water and included in the central data management program.

## Prevent unacceptable degradation of aquifer according to the Basin Plan throughout the planning period. To

preserve the acceptable quality of groundwater, with close attention paid to potential contaminants such as arsenic, nitrate, salinity and other problem pollutants, monitoring of groundwater quality would be undertaken, using GAMA Program methodology, as feasible. The quality of groundwater in recharge zones will also be monitored to ensure that the non-impacting activities that helpmeet Basin Plan requirements are sited appropriately. The difference between the baseline groundwater quality measured and the Basin Plan goals will be an indicator of plan performance. In order to sufficiently measure the performance of this planning target, a number of details about measuring need to be identified including, but not limited to: identification of sampling sites, establishing groundwater monitoring wells, the number of wells to be monitored, the frequency of monitoring, who will collect the data, and how it will be handled. The data acquired through the groundwater monitoring, as well as monitoring of areas where impacting activities are located near recharge zones, will be included in the central data management program.

## Map contaminated and degraded sites and monitor contaminant movement, by December 2008.

Achievement of this planning target would be establishment of a process for identifying, mapping and monitoring contaminated sites. To measure program performance, general groundwater quality monitoring of the Region would be conducted to identify locations of contaminated sites, in order to set up a monitoring program in the problem area to document the change in contaminant plume over time and rate of migration. Sites can be identified by reviewing historical land use to search for potential high risk uses including industrial, agricultural or military, as well as through databases listing known pollutant leaks, spills or contamination issues. Additional details needed for measuring performance including identification of water quality constituents of concern, the number of groundwater monitoring wells needed per site, the frequency of monitoring, who will map and collect the data, and how it will be recorded in the central data management program.

Identify contaminated portions of aquifer and prevent migration of contaminants, by June 2009. To prevent migration of existing contaminants to currently uncontaminated portions of the aquifer, as with the previous planning target, groundwater quality monitoring will be used to collect data to determine the potential sources of contaminants and the drivers influencing migration, such as seasonal variation. The data would then be input into a database for continual monitoring and modeling, if required, to help evaluate management alternatives to prevent further migration. To measure the performance of this planning target, a number of details to be further defined include the identification of a groundwater modeling expert, determination of the number of groundwater monitoring wells needed, and identifying who will collect and incorporate the data into the central data management program.

#### Prevent unacceptable degradation of natural streams and recharge areas according to the Basin Plan throughout the planning period. To preserve the ecosystem health of current stream systems and groundwater recharge areas, the sources of flow that could carry contaminants would be measured through surface water monitoring efforts. Potential contamination sources and mechanisms, and areas that need protection and additional monitoring would be identified using standard methods and procedures for water quality testing, such as GAMA Program methodologies, as feasible. Additional information to be developed in support of this planning target include

establishing groundwater monitoring wells, determining the number of wells to be monitored and how frequently, as well as identification of who would collect and disseminate the data for the central data management program.

Increase infrastructure and establish policies to use 33 percent of recycled water to help meet expected demand by 2015, 66 percent by 2025, and 100 percent by 2035. To increase the use of recycled water, and thereby reduce the demand on imported water or groundwater resources, the annual volume of recycled water produced, and the annual volume of recycled water banked or delivered would be measured using flow meters. The recycled water infrastructure is already planned for expansion, as shown by the LACWWD 40 Regional Recycled Water Backbone System and the LACSD's tertiary treatment facility upgrades. Additional urban and agricultural recycled water users should also be identified through ongoing planning efforts. The data acquired through these monitoring efforts would then be included in the central data management program.

Coordinate a regional flood management plan and policy mechanism by the year 2010. Development of a Regional Flood Management Plan and policy mechanism would require identification of data gaps related to flood management, preparation of detailed flood use maps for the Region, identification of policies to protect aquifer, natural streams and recharge areas from contamination in the area, and identification of flood management opportunities. The progress of this planning target would be measured by monitoring the progress of development of the plan, on a section by section basis. The signing of an MOU (or other suitable governance structure) and the commitment of funds for the regional flood plan would also be indicators of program performance. Progress development of the plan would be included in the central data management program to ensure close coordination of efforts.

Contribute to the preservation of an additional 2,000 acres of open space and natural habitat, to integrate and maximize surface water and groundwater management by 2015. This planning target will be measured by recording the existing acres of open space and natural habitat and comparing those totals to the newly developed acres of open space and natural habitats created, restored or enhanced annually. The change between baseline acreage and new, measured open space and natural habitat created or preserved through community-based projects would be reported and included in the central data management program. A stakeholder process would further help to identify projects, create awareness for, or provide financial contributions towards the development of open space, and this information could be compiled and mapped for future project concepts or integration with other IRWM Plan projects.

Preserve 100,000 acres of farmland in rotation through 2035. To measure the economic health of the Agricultural community in the Region, and the land remaining in agricultural use, the existing acreage of agricultural land in rotation will be compared to the future, measured agricultural land in rotation. Landowners working would work with local water agencies in coordinated water banking rotation projects, and the resulting number of acres of farmland and the number of water resource projects that integrate agricultural land with irrigation practices would be indicators of progress. This data would be included in the central data management program.

Contribute to local and regional General Planning documents to provide 5,000 acres of recreational space by 2035. Providing low impact recreational opportunities for residents and visitors into the future will require the measurement of existing acreage of recreational space to compare against future acreage. A stakeholder process would contribute to the identification of community-based projects that could be developed to increase recreational space, and coordination with General Plan updates and policy directives would further build consensus. The annual acreages would then be included in the central data management program.

Coordinate a regional land use management plan by

the year 2010. Development of a Regional Land Use Management Plan would require identification of data gaps, preparation of detailed land use maps for the Region, identification of policies to protect and enhance land uses in the area, and identification of land use management opportunities. The progress of this planning target would be measured by monitoring the progress of development of the plan, on a section by section basis. The signing of an MOU (or other suitable governance structure) and the commitment of funds for the regional plan would also be indicators of performance. Quarterly progress reports on the development of the plan would be included in the central data management program to ensure close coordination of efforts.

Table 8-8 summarizes the project monitoring and program performance measures.

The following table identifies a list of questions and action items that the AV IRWM Plan Leadership Team are tasked with responding to in order to determine the parameters of the planning targets and performance metrics to be used in project implementation. The table also documents the types of ongoing decisions and tasks needed by the

Leadership Team throughout Plan implementation to address a systematic approach to tracking, measuring and reporting on the Plan's performance over time.

## 8.6 FUTURE AV IRWM PLAN ACTIVITIES

### 8.6.1 Process for Developing Future Projects

The development of the AV IRWM Plan provided an opportunity for the Stakeholders to identify, evaluate and prioritize their projects and management actions. Those that were given a 'high' priority are those that they collectively decided to pursue within the next two years. The 'medium' and 'low' projects are those projects that the group still feels are important to implement in order to help meet the objectives and goals for the Antelope Valley Region, however their implementation is not as timely as the 'high' priority projects. Therefore, the 'medium' and 'low' priority projects will need to be revisited by the Stakeholder group at a later date for further evaluation to determine when it is most appropriate for their implementation and action. Additionally, as these projects, whether 'high', 'medium', or 'low,' are implemented in the Antelope Valley Region, the Stakeholders may see their issues and needs begin to shift, warranting the call for new types of projects. For example, should the adjudication place a restraint on the amount of groundwater that can be extracted from the groundwater basin by the year 2015, the group will need to look more closely at those projects that do not rely on groundwater to meet their needs. Or if a new contaminant is discovered in the Antelope Valley Region, they will have to adapt and identify projects and management actions to address those needs as they arise. Therefore, the process for developing future projects must be flexible, and allow for changing conditions. Any potential future project or management action will be assessed on how well it can be integrated within the Antelope Valley Region and within the existing projects to provide multiple benefits.

As projects are developed and/or refined in the future, the continued or new involvement of some state and/or federal agencies as identified in Table 8-1 may be warranted.

#### 8.6.1.1 Responsiveness of Decision-Making to Regional Changes

As the IRWM Plan is updated and developed through the planning horizon, there will be a process to revisit the evaluation, assessment, and ranking process outlined herein to identify changes that should be made to the criteria and prioritization in response to new regional conditions and project implementation status. If changes are deemed appropriate, then the priority project list (as shown in Table 7-2 and in Appendix E) will be re-assessed and re-prioritized using the modified criteria and/or other evaluation criteria determined by the Stakeholder group.

#### 8.6.1.2 Assessing Responses to Project Implementation

As projects are implemented in the Region as part of this Plan, project performance will be assessed and outcomes will be monitored, and the results from this monitoring will be used to guide future project implementation. Specific mechanisms for monitoring project performance are presented in Table 8-8.

#### 8.6.1.3 Altering Project Sequencing Based on Project Implementation Responses

The results from monitoring project performance will be used to guide future project implementation and sequencing. If project monitoring reveals that a project is progressing as planned and regional changes do not necessitate revisiting project implementation, then changes to project sequencing are not anticipated. However, if project monitoring reveals that a project is not producing the anticipated result, the governance structure will dictate the responsible party to work with the project proponent to identify and implement corrective actions.

#### 8.6.2 Future AV IRWM Plan Updates

The AV IRWM Plan is a dynamic planning document. The AV IRWM Plan at a minimum will be updated every two years as further study and planning is conducted, projects continue to be developed and objectives and priorities are adjusted. There will be an ongoing process for keeping the proposed project list up-to-date, through regular quarterly updates with additional meetings and revision as needed before major grant applications, as conditions change, funding is identified, projects are implemented and objectives revised.

As stated in Section 8.4.1, the AV IRWM Plan website, www. avwaterplan.org, provides a mechanism for stakeholders to upload project information, including submittal of new project ideas and concepts. Appendix E contains the prioritized list of projects in the AV IRWM Plan. Appendix G contains the electronic list of projects in this IRWM Plan.

Table 8-8 Project	Monitoring and Progra	am Performance	Measures							
			Output Indicators	Outcome Indicator	Measurement Tools and Metl	hods			Measurement to be	
Water Resource Strategy	Planning Target	Desired Outcome	(measures to effec- tively track output)	(measures to evaluate change that is a direct result of the work)	What needs to be measured:	How it should be measured:	Measurement/ Reporting Frequency	Who should measure	Reported and Overall Reporting Guidelines	Decisions Needed/ Unknowns
Water Supply	Reduce (73,600 to 236,800 AFY) mismatch <sup>1</sup> of expected supply and demand in average years by providing new water supply and reducing	Supply and demand balance in average years (no mismatch) over the planning horizon	Update estimated supply and demand each year (for that year and future years) using similar approach to that used in the IRWM Plan including	Create an "accounting table" that starts with the estimated mismatch from the IRWM Plan (and then subsequent updates) and report expected changes to the mismatch that would result	Precipitation measurement to determine if it an average, dry, single dry year Also measure ETo from CIMIS weather stations in Victorville and Palmdale.	Rain gauges in mountains and Stream/Run-off gauges for groundwater conditions and recharge estimates (still need to determine how many, where to place these, who will operate, and how to report the data.) Littlerock precipitation data for surface water conditions Northern California conditions for imported water conditions	Daily/Annually	TBD	Measurement to be reported: Total reduction in mismatch Reporting: Report quarterly with updates to regional board and compare against	Do we measure additional supply as new water sources or any water in addition to what was projected for that year? Reduction in mismatch =
	demand, starting 2009.		such as new population estimates, per capita	a groundwater banking project, a low flow toilet rebate program,	Imported water delivered to AVEK, PWD, LCID, how much they deliver, and how much water is banked	Annual Water Production Reports	Monthly/Quarterly	AVSWCA	objectives	total new supply plus reduc- tion in demand?
			use, etc.	This would allow quarterly reporting of expected adjust- ments to the mismatch based	Inflows to and Deliveries from Littlerock Reservoir (including water levels in reservoir, delivered water, spill over, and amount evaporated)	PWD	Monthly/Quarterly	PWD		to mismatch? Use annual projected mismatch for each given year or as percent of 236.800? OR compare actual
				on project actions being implemented. In addition to accounting for the expected changes to the mismatch, require projects that are estimating	Amount of recycled water produced, delivered (by water use category), and banked (including quantity, timing, and location)	Wastewater Operations Reports flow meters at injection sites	Monthly/Quarterly	LACSD		supply and demand differ- ence to projected mismatch for given year?
				increases in supply, or reductions in demand to track tangible metrics that demonstrate the progress they are making over time.	Amount of local groundwater produced, delivered by purveyors to customers, and extracted by minimal and agricultural water users (broken down by water use category)	Annual Water Production Reports/ Billing Records	Monthly/Quarterly	TBD		
					Amount of irrigation return flows from M&I users, recycled water users, and agricultural users	<ul> <li>LACSD Waste Discharge Permit. Method to be determined but could include:</li> <li>Using indoor/outdoor water ratio and evaporation estimates to determine how much applied water consumed and how much percolates.</li> <li>Using infrared spectoral analysis to measure ETo</li> <li>Using RCSD estimates of water delivered and water inflows to wastewater plant</li> </ul>	Monthly/Quarterly	TBD		
					Population Projections	Census tract (updated with release of new census tract data or other new population data available for Region.)	Annually	TBD		
					M&I Demand	Recalculate the regional average per capita demand. Then use this number and the projected population estimates to calculate total demand.	Annually	TBD		
					Agricultural Demand	Continue obtaining annual agricultural acreage by crop type from LA and Kern County Agricultural Commissioners and calculate demand using the crop use requirements in the Plan. Update crop estimates with release of new data (Use actual demand measurements when available.)	Annually	TBD		
					Proposed/Actual amount of new water supply	<ul> <li>All Projects: Estimated in 5-year intervals from project information</li> <li>Amount of water produced from project (operation records)</li> <li>Amount delivered from project (billing records)</li> </ul>	Monthly/Quarterly	Project Proponent		
						<ul> <li>For projects with banking/ recharge element: monitored daily, reported monthly</li> <li>Overall Project injection, storage, and pumpback capacity</li> <li>Actual amount injected</li> <li>Actual amount pumped from bank</li> <li>Total amount in storage</li> <li>Need to account for percent remaining in storage to improve ground-water levels</li> </ul>				
						For Water Deals/Transfers: • Amount agreed/allotted (water right) • Actual amount transferred.				

1 The "mismatch" between supply and demand in the IRWM Plan is based on estimated supply and demand values and cannot be measured directly. Some aspects of supply can be measured directly such as the amount of water received from the State Water Project. Other aspects of supply are more difficult to measure directly such as the volume of water pro-vided from precipitation and the volume pumped from groundwater. Demand cannot be measured directly, because demand is a behavior that is influenced by the desired use, available supply.

Table 8-8 Project I	Monitoring and Progra	am Performance	Measures (continued	)						
				Outcome Indicator	Measurement Tools and Met	nods			M	
Water Resource Strategy	Planning Target	Desired Outcome	(measures to effec- tively track output)	(measures to evaluate change that is a direct result of the work)	What needs to be measured:	How it should be measured:	Measurement/ Reporting Frequency	Who should measure	Measurement to be Reported and Overall Reporting Guidelines	Decisions Needed/ Unknowns
Water Supply (continued)					Planned and actual reduction in demand	Proposed/Actual number of units installed/lines replaced/ rebates planned (est. water savings per unit from existing documentation such as CUWCC worksheets and methods for estimating water savings for various BMPs) Also need to consider impacts of demand reduction on wastewater inflows and recycled water availability. Should try to reduce outdoor use as much as possible.	Monthly/Quarterly	Project Proponent		
Water Supply	Provide adequate reserves (50,600 to 57,400 AFY) to supplement average condition supply to meet demands during single- dry year conditions, starting 2009.	Establish a mechanism to dedicate supply in groundwater for dry year use. Start banking water in average year conditions to meet the expected quantity by 2009 and beyond.	Amount of water in reserve each year.	Amount of water banked and withdrawn quarterly and a cumulative total in bank quarterly.	Amount of water banked	Water put in storage for purpose of reserve	Quarterly	TBD	Measurement to be reported: Total mismatch and reduction in demand Reporting: Report every two years with update of the Plan and compare against objectives	
Water Supply	Provide adequate reserves (0 to 62,000 AF/4-year period) to supplement average condition supply to meet demands during multi-dry year conditions, starting 2009.	Establish a mechanism to dedicate supply in groundwater for dry year use. Start banking water in average year conditions to meet the expected quantity by 2009 and beyond.	Amount of water in reserve each year.	Amount of water banked and withdrawn quarterly and a cumulative total in bank quarterly.	Amount of water banked	Water put in storage for purpose of reserve	Quarterly	TBD	Measurement to be reported: Total mismatch and reduction in demand Reporting: Report every two years with update of the Plan and compare against objectives	
Water Supply	Demonstrate ability to meet regional water	Provide a diversity of water supply	Determine quantity of water needed to reason-	Percent change in SWP water deliveries over the 6-month	Amount of SWP received in a 6-month summer period	Use expected deliveries from AVEK, LCID, and PWD during 6-month summer period in 2010 average conditions.	Annually	TBD	Measurement to be reported: The difference	What the total volume of water required is?
	demands without receiving SWP water for 6 months over the summer,	sources to meet peak demands over the summer	ably meet demands in region for 6 months without receiving	period Percent change in groundwater extractions from using banked	Total water supply available over 6-month summer period without above	Account for available emergency supply sources, such as banked water reserves, emergency transfer contracts, short-term paid non-use contracts, etc.	Annually	TBD	between how much water is needed, compared to how much water is available	ls this for an average year, single-year, multi-dry year?
	by June 2010.		SWP water over the summer (assuming 2010 conditions) Estimated SWP demand during 6-month summer	water Quantification of additional water transported to Region (i.e. banked water from outside	Maximum reduction in demand that can be reasonable achieved	Using Contingency/Water Conservation Plans and Emergency Response Plan assuming highest level of water shortage Compare economic tradeoffs of aggressive short-term rationing to the cost of securing other supplies	Annually	TBD	during the 6-month summer period. Reporting: Report every two years with update of the Plan and compare against	
			period Estimate of maximum savings from emergency conservation program Estimate of recycled water demand Estimate of banked water amount	of Delta Water Supplies during emergency conditions from trade agreements) Quantification of reduction in demand from emergency conservation measures	Overall Storage Capacity within existing or proposed recharge and extraction facilities.	Master Plans/Infrastructure Reports	Annually	TBD	objectives Need to show have suffi- cient reserves (or potential to reduce demand) to meet the loss of SWP supply.	

Table 8-8 Project	Monitoring and Progra	am Performance	Measures (continued	)						
				Outcome Indicator	Measurement Tools and Met	hods			M	
Water Resource Strategy	Planning Target	Desired Outcome	(measures to effec- tively track output)	(measures to evaluate change that is a direct result of the work)	What needs to be measured:	How it should be measured:	Measurement/ Reporting Frequency	Who should measure	Measurement to be Reported and Overall Reporting Guidelines	Decisions Needed/ Unknowns
Water Quality	Manage groundwater levels throughout the basin such that a 10-year moving average of change in observed groundwater levels is greater than or equal to 0, starting January 2010.	Stabilize long- term groundwater levels in region, meaning ground- water recharge and extractions are in balance.	Observed groundwater levels in a monitoring network that provides representative view of entire groundwater basin Coordination with Regional Boards for continued compliance with new or changes to existing discharge permits, regulations, etc.	Annual change in groundwater level (+ / -) from previous year averaged over past 10 years	Groundwater levels May need additional study/testing/ modeling for this. GIS based groundwater level map updating on a regular basis can use to update/ monitor GW level. Will need to coordinate with Water Master. Still need to determine how many wells, which subbasins, and how to report (i.e. as a whole or by subbasin)	Well monitoring (GAMA Program methodology will be followed, when applicable); can use Claud's data for baseline, existing wells (take note of how many wells are in a subbasin)	Quarterly	TBD	Measurement to be reported: Observed ground- water level improvements; calculate 10-year average Reporting: Report every year with update of the Plan and compare against objectives	Need yearly average. Can we report over the entire basin, or do we need to report for each subunit? Need to determine if going to fill in existing depressions before set baseline levels [for the time being take measure- ments on the subunit basis]
	Continue to meet Federal and State water quality standards as well as customer standards for taste and aesthetics throughout the planning period.	Meet Federal and State water quality standards and achieve high levels of customer satisfaction	Monitoring to ensure compliance Coordination with Regional Boards for continued compliance with new or changes to existing discharge permits, regulations, etc.	Compliance with Consumer Confidence Reporting (CCR) and EPA's unregulated contaminant monitoring rule reporting Customer Satisfaction	Standard lab methods for water quality testing, EPA Protocols, CCR Reporting Protocols Taste & aesthetic Overall customer satisfaction	See EPA and CCR Protocols Solicit consumer input at a community fair Include a bi-annual mail-in survey in the monthly water bill	See EPA and CCR Protocols Monthly/Annually Semi-annually	See EPA and CCR Protocols Local water district Local water district	Measurement to be reported: Comparison of measured water quality data to water quality stan- dards. For taste & aesthetics, overall consumer satisfac- tion with water quality. Reporting: Taste & aesthetics collect annual data, report with updates, could also add to CCR Reporting.	If problem then can do some: Basic monitoring effort of taste and odor causing compounds like: geosmin (produced by microbes like blue-green algae and gives a "dirty/earthy" taste to water), MIB, algaes.
Water Quality	Prevent unacceptable degradation of aquifer according to the Basin Plan throughout the plan- ning period.	Preserve accept- able quality of groundwater paying special attention to potential contaminants such as arsenic, nitrate, salinity and other problem pollutants	Monitoring of ground- water quality Coordination with Regional Boards for continued compliance with new or changes to existing discharge permits, regulations, etc. Monitor areas where impacting activities are located near recharge zones.	Difference between background or baseline groundwater quality and goals for arsenic, nitrate, salinity and other problem pollutants Promote non-impacting activi- ties in recharge zones (not allow impacting activity in recharge zones)	Bacteria, Coliform, Radioactivity, Taste and Odor, Ammonia, Biostimulatory, Substances, Chemical Constituents, Chlorine, Total Residual, Color, Dissolved Oxygen, Floating Materials, Oil and Grease, Non-degradation of Aquatic Communities, Populations Pesticides, pH, as required by Basin Plan and additionally measure pollutants of concern such as arsenic, nitrate, TDS How many well sites, how often, where? Surface waters that should be measures are Lake Palmdale and Littlerock Reservoir	Standard methods and procedures for water quality testing; GAMA Program methodology will be followed, when applicable. The Basin Plan requires that all drinking water requirements (MCL and Secondary MCL) are to be met	Monthly or more frequently, can refer to Title 22 for additional monitoring requirements Report quarterly	TBD	Measurement to be reported: water quality limits Reporting: Report every year with update of the Plan and compare against objectives	Locations of sampling site? Frequency of sampling? How many wells? Where to locate the wells? How often to test? Existing USGS wells?

Table 8-8 Project	Monitoring and Progra	am Performance	Measures (continued	)						
				Outcome Indicator	Measurement Tools and Meth	nods				
Water Resource Strategy	Planning Target	Desired Outcome	Output Indicators (measures to effec- tively track output)	(measures to evaluate change that is a direct result of the work)	What needs to be measured:	How it should be measured:	Measurement/ Reporting Frequency	Who should measure	Measurement to be Reported and Overall Reporting Guidelines	Decisions Needed/ Unknowns
Water Quality	Map contaminated and degraded sites and monitor contaminant movement, by December 2008.	Set up a process for identifying, mapping and monitoring contaminated sites	Locations, constitu- ents, and constituent concentrations Coordination with Regional Boards for continued compliance with new or changes to existing discharge permits, regulations, etc. Records database search for pollutant leaks, spills, contamination, etc. Enhance monitoring system to detect identi- fied potential pollutants (i.e. modify sampling plan to include identified potential pollutants or indicators of those pollutants, perform vertically discrete sampling, etc).	Change in contaminant plume over time and rate of migration of contaminant	<ul> <li>Water quality of Region to identify contaminated sites. Do a general sweep, then monitor more often in problem areas.</li> <li>Steps for a general groundwater quality monitoring methodology: <ol> <li>select area for monitoring</li> <li>identify pollution sources, causes, and methods of disposal</li> <li>identify potential pollutants</li> <li>define groundwater usage</li> <li>define hydrogeologic situation</li> <li>describe existing groundwater quality</li> </ol> </li> <li>evaluate infiltration potential of waste at the land surface</li> <li>evaluate attenuation of pollu- tions in the saturated zone</li> <li>prioritize sources and causes</li> <li>evaluate existing monitoring programs</li> <li>identify alternative monitoring approaches</li> <li>select and implement the monitoring program</li> <li>review and interpret monitoring results</li> </ul>	Database with location of the well, contaminants and detection levels, continually monitor that, monitoring of a few wells near it. Up stream and downstream well. May require additional monitoring wells.	Quarterly for common contaminants, if no contamination found for 5-10 years, then go to annually for that well. Keep in mind the Cost \$\$	Need to identify a person to do the mapping. Need to identify person to maintain database itself	Measurement to be reported: Record of contaminated sites Reporting: Report every year with update of the Plan and compare against objectives	Water quality constituents? How often are we going to monitor? Where to monitor?
Water Quality	Identify contaminated portions of aquifer and prevent migration of contaminants, by June 2009.	Provide information for groundwater management that will prevent migration of existing contami- nants to currently uncontaminated portions of the aquifer	Locations, constitu- ents, and constituent concentrations Potential sources of contaminants Potential drivers influencing migration (e.g., nearby cone of depression) Coordination with Regional Boards for continued compliance with new or changes to existing discharge permits, regulations, etc. Install monitoring wells (need several years of data to know if the contamination is due to seasonal variation or not)	Change in contaminant plume over time and rate of migration of contaminant Locate production wells geographically and with respect to depth in order to manipulate groundwater movement	Water quality of Region to identify contaminated sites. Do a general sweep, then monitor more often in problem areas. Migration of the contaminant	Database with location of the well, contaminants and detection levels, continually monitor that, monitoring of a few wells near it. Up stream and downstream well. May require additional monitoring wells. Modeling	Quarterly	TBD	Measurement to be reported: water quality data, contour level data, TBD Reporting: Report every year with update of the Plan and compare against objectives	Need groundwater modeling expert to help evaluate management alternatives to prevent migration Determining best methods for preventing migration; might be different based on contaminant; might be different based on location May require modeling of rate of change of contaminant when identified

Table 8-8 Project Monitoring and Program Performance Measures (continued)										
			Output Indicators	Outcome Indicator	Measurement Tools and Methods				Measurement to be	
Water Resource Strategy	Planning Target	Desired Outcome	(measures to effec- tively track output)	(measures to evaluate change that is a direct result of the work)	What needs to be measured:	How it should be measured:	Measurement/ Reporting Frequency	Who should measure	Reported and Overall Reporting Guidelines	Decisions Needed/ Unknowns
Water Quality	Prevent unacceptable degradation of natural streams and recharge areas according to the Basin Plan throughout the planning period.	Preserve ecosystem health of current stream systems Preserve opportu- nity to use existing and promising future ground- water recharge areas	Identify potential contamination sources and mechanisms Identify areas that need to be protected and monitored. Coordination with Regional Boards for continued compliance with new or changes to existing discharge permits, regulations, etc.	Sources of flow that could carry contaminants Contaminants in flows entering areas desired to protect	Bacteria, Coliform, Radioactivity, Taste and Odor, Ammonia, Biostimulatory, Substances, Chemical Constituents, Chlorine, Total Residualm Color, Dissolved Oxygen, Floating Materials, Oil and Grease, Non-degradation of Aquatic Communities, Populations Pesticides, pH, as required by Basin Plan and additionally measure pollutants of concern such as arsenic, nitrate, and ?? (TDS?) How many well sites, how often, where? Surface waters that should be measures are Lake Palmdale and Littlerock Reservoir	Standard methods and procedures for water quality testing; GAMA Program methodology will be followed, when applicable. The Basin Plan requires that all drinking water requirements (MCL and Secondary MCL) are to be met.	Monthly or more frequently, can refer to Title 22 for additional monitoring requirements Report quarterly	TBD	Measurement to be reported: water quality limits Reporting: Report every year with update of the Plan and compare against objectives	Locations of surface water samples during storm events? Locations of gw sampling site? Frequency of sampling? How many wells? Existing USGS wells?
Water Quality	Increase infrastructure and establish policies to use 33% of recycled water to help meet expected demand by 2015, 66% by 2025, and 100% by 2035.	Increased use of recycled water, which would decrease demand on other resources, such as imported water or groundwater.	New users for 40,000 AFY in 2015, 55,000 AFY in 2025, and 65,000 AFY of recycled water under contract by 2035.	Volume of recycled water created: 40,000 AFY in 2015, 55,000 AFY in 2025, and 65,000 AFY in 2035 of recycled water will be used in the urban or agricultural setting where it is not currently used.	Amount of recycled water delivered and banked.	Deliveries would be measured using flow meters. Monitoring will be consistent with the permit requirements for the use sites.	Monthly/Quarterly	LACSD	Measurement to be reported: Total volume of recycled water banked or delivered compared to 33%, 66%, 100% Reporting: Report every year with update of the Plan and compare against objectives	Users, if not already identified.
Flood Management	Coordinate a regional flood management plan and policy mechanism by the year 2010.	Identification of data gaps, preparation of detailed flood use maps for the Antelope Valley Region, identifica- tion of policies to protect aquifer, natural streams and recharge areas from contamina- tion in the Valley, and identifica- tion of flood management opportunities.	Identification of entities that would be involved in coordination of the regional flood management plan; the establishment of a regional flood manage- ment committee; and the identification of the funding mechanism for creating and imple- menting a plan.	Signing of an MOU (or other suitable governance structure) and commitment of funds for the regional flood plan.	Monitoring progress of development of the Plan and policy mechanism	TBD Plan development, by Section	Quarterly	TBD	Measurement to be reported: Measuring prog- ress of a flood management plan development. Reporting: Report every year with update of the Plan and compare against objectives	Need to define the Region for the flood management plan; same boundary as the IRWM Plan? When it's going to start? Who's responsible? Adopting it?
Environmental Resource Management	Contribute to the pres- ervation of an additional 2,000 acres of open space and natural habitat, to integrate and maximize surface water and groundwater manage- ment by 2015.	Help contribute through identifi- cation of, aware- ness for, financial contribution towards, or similar for creating, restoring, or preserving near-term open space and natural habitat in the Antelope Valley.	Stakeholder-coordinated meetings with imple- mentation partners to develop community projects. Increase in restoration plantings or mitigation planting sites.	Community consensus and agreement on project list/alter- native, as developed through meetings and coordination Work with individual landowners to revegetate the areas Number of acres preserved & treated for open space and natural habitat; measurement of the health of open space and natural habitat	To measure 'preservation': existing acres of open space and natural habitat to measure additional open space and natural habitat acreage Fugitive dust management (measured and mapped); tons of soil per acre (particulate matter ([pm]10, pm2.5) Acreage of new plantings	Land use maps; satellite imagery; AV conservancy database; General Plan GIS data? Measure fugitive dust according to Air Quality Management District (AQMD) standards	Annually Soil data measured daily/reported annually	TBD AVRCD	Measurement to be reported: Comparison between existing (2005) acreage of open space and natural habitat and measured open space and natural habitat. Reporting: Report every year with update of the Plan and compare against objectives	Identify priority open space areas that can contribute to successful integrated management of surface and groundwater.

Table 8-8 Project Monitoring and Program Performance Measures (continued)										
	Planning Target	Desired (n Outcome ti	Output Indicators (measures to effec- tively track output)	Outcome Indicator (measures to evaluate change that is a direct result of the work)	Measurement Tools and Methods					
Water Resource Strategy					What needs to be measured:	How it should be measured:	Measurement/ Reporting Frequency	Who should measure	Measurement to be Reported and Overall Reporting Guidelines	Decisions Needed/ Unknowns
Land Use Management	Preserve 100,000 acres of farmland in rotation through 2035.	The Agricultural community in the Antelope Valley stays economically healthy and land use remains in agriculture.	Landowners working with local water agen- cies in coordinated water banking rotation projects.	Number of water-resource integrated projects The number of acres of farmland in active rotation	Existing (2005) acreage in rotation (at least 24,000 acres of active farm land need to determine total in rotation) and current land use by type (active farming, fallowing, recharge, etc.) Fugitive dust management (measured and mapped); tons of soil per acre (particulate matter ([pm]10, pm2.5) {**Note: fugitive dust affects the health of agricultural land and thus was asked to be included by the AVRCD for routine measurement}	Land use maps; satellite imagery; survey of landowners; General Plan GIS data, County commissioner reports Measure fugitive dust according to Air Quality Management District (AQMD) standards	Quarterly/Annually Soil data measured daily/reported annually	TBD (USDA, LA Farm Bureau, Kern County Farm Bureau, LA County Agricultural Commissioner, Kern County Agricultural Commissioner, AVRCD)	Measurement to be reported: Comparison between existing (2005) acreage of agricultural land in rotation and measured agricultural land in rotation. Reporting: Report every year with update of the Plan and compare against objectives	How costly to measure? Note that if objective is meet, the agricultural demand in the Plan may go up, and likewise the mismatch between supply and demand may go up.
Land Use Management	Contribute to local and regional General Planning documents to provide 5,000 acres of recreational space by 2035.	Provide low impact recre- ational opportuni- ties for residents and visitors into the future.	Stakeholder-coordinated meetings with imple- mentation partners to develop community projects	Community consensus and agreement on project list/alter- natives, as developed through meetings and coordination	Existing acreage of recreational space and future acreage	Land use maps; satellite imagery; General Plan GIS data?	Quarterly/Annually	TBD	Measurement to be reported: Comparison between existing acreage of recreational land and measured recreational land. Reporting: Report every year with update of the Plan and compare against objectives	
Land Use Management	Coordinate a regional land use management plan by the year 2010.	Identify data gaps, prepare detailed land use maps for the Antelope Valley Region, identify policies to protect land uses in the Valley, identify land use management opportunities	Identification of entities that would be involved in coordina- tion of the regional land management plan; the establishment of a regional land manage- ment committee; and the identification of the funding mechanism for the plan.	Signing of an MOU and commit- ment of funds for the regional land plan. A broadly supported regional land use management plan.	Monitoring progress of development of the Plan and policy mechanism	Plan development, by Section	Quarterly	TBD	Measurement to be reported: Measuring prog- ress of a land use manage- ment plan development. Reporting: Report every year with update of the Plan and compare against objectives	Need to define the Region for the land use plan; same boundary as the IRWM Plan? When it's going to start? Who's responsible? Adopting it?

Table 8-9 Antelope Valley IRWM Plan Performance Measures Action Item Task List				
Planning Targets	What Needs Measuring	Action Items		
WATER SUPPLY MANAGEMENT		·		
Reduce (73,600 to 236,800 AFY) mismatch of expected supply and demand in average years by providing new water supply and reducing demand, starting	In General	Decisions Needed/Unknowns:		
2009.		to what was projected for that year?		
		<ul> <li>Reduction in mismatch = total new supply plus reduction</li> </ul>		
		Decisions Needed/Unknowns:		
		<ul> <li>How to compare numbers to mismatch? Use annual p for each given year or as percent of 236,800? OR com demand difference to projected mismatch for given y</li> </ul>		
	Precipitation measurement to determine if it an average, dry, or single dry year	How it should be measured:		
		Rain gauges in mountains and Stream/Run-off gauge tions and recharge estimates.		
		• Determine how many, where to place these, who will report the data.		
		Who should measure:		
		Identify.		
	Amount of local groundwater produced, delivered by purveyors to customers, and extracted by minimal and agricultural water users (broken down by water use category)	Who should measure:		
		• Identify.		
	Amount of irrigation return flows from M&I users, recycled water users, and	How it should be measured:		
		Determine method; it could include:		
		<ul> <li>Using indoor/outdoor water ratio and evaporation how much applied water consumed and how much</li> </ul>		
		» Using infrared spectoral analysis to measure ETo.		
		» Using RCSD estimates of water delivered and water plant.		
	Population Projections	Who should measure:		
	MOL Demand	Identify.		
	M&I Demand	who should measure:		
	Agricultural Demand	Who should measure:		
		Identify		
Provide adequate reserves (50,600 to 57,400 AFY) to supplement average condi-	Amount of water banked	Who should measure:		
tion supply to meet demands during single-dry year conditions, starting 2009 .		Identify.		
Provide adequate reserves (0 to 62,000 AF/ 4 year period) to supplement average	Amount of water banked	Who should measure:		
condition supply to meet demands during multi-dry year conditions, starting 2009 .		• Identify.		

	Responsible Party
or any water in addition	
ction in demand?	
projected mismatch pare actual supply and year?	
es for groundwater condi-	
operate, and how to	
n estimates to determine ch percolates. er inflows to wastewater	

Table 8-9 Antelope Valley IRWM Plan Performance Measures Action Item Task List (continued)					
Planning Targets	What Needs Measuring	Action Items			
Demonstrate ability to meet regional water demands without receiving SWP water for 6 months over the summer, by June 2010.	Amount of SWP received in a 6-month summer period	<ul> <li>Who should measure:</li> <li>Identify.</li> <li>Decisions Needed/Unknowns:</li> <li>What is the total volume of water required?</li> <li>Decisions Needed/Unknowns:</li> <li>Is this for an average year, single-year, multi-dry year?</li> </ul>			
	Iotal water supply available over 6-month summer period without above SWP	<ul><li>Identify.</li></ul>			
	Maximum reduction in demand that can be reasonable achieved	<ul><li>Who should measure:</li><li>Identify.</li></ul>			
	Overall Storage Capacity within existing or proposed recharge and extraction facilities.	<ul><li>Who should measure:</li><li>Identify.</li></ul>			
Manage groundwater levels throughout the basin such that a 10-year moving average of change in observed groundwater levels is greater than or equal to 0, starting January 2010.	Groundwater levels	<ul> <li>What needs to be measured:</li> <li>Additional study/testing/modeling needed? GIS based groum map updating on a regular basis can use to update/monitor coordinate with Water Master.</li> <li>What needs to be measured:</li> <li>Determine how many wells, which sub-basins, and how to rewhole or by subbasin).</li> <li>How it should be measured:</li> <li>Well monitoring (GAMA Program methodology will be follow cable); Use Claud's data for baseline, existing wells (take note wells are in a subbasin)?</li> <li>Who should measure: <ul> <li>Identify.</li> </ul> </li> <li>Decisions Needed/Unknowns: <ul> <li>Can we report over the entire basin, or do we need to report [For the time being take measurements on the subunit basis]</li> </ul> </li> </ul>			
WATER QUALITY MANAGEMENT		beternine ingoing to him mexisting depressions before set			
Continue to meet Federal and State water quality standards as well as customer standards for taste and aesthetics throughout the planning period.	Standard lab methods for water quality testing, EPA Protocols, CCR Reporting Protocols	<ul> <li>Decisions Needed/Unknowns:</li> <li>If problem then can do: Basic monitoring effort of taste and compounds, such as geosmin (produced by microbes like bl and gives a "dirty/earthy" taste to water), MIB, and/or algae.</li> </ul>			

	Responsible Party
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of how many	
or each subunit?	
seline levels.	
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dor causing e-green algae	
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Table 8-9 Antelope Valley IRWM Plan Performance Measures Action Item Task List (continued)					
Planning Targets	What Needs Measuring	Action Items	Responsible Party		
Prevent unacceptable degradation of aquifer according to the Basin Plan	Bacteria, coliform	Measurement/Reporting Frequency:			
throughout the planning period.	Chemical Constituents	Identify. Check Title 22 for monitoring requirements.			
	Radioactivity	Who should measure:			
	Taste and Odor as required by Basin Plan and additionally measure pollutants of	• Identify.			
	concern such as arsenic, nitrate, and TDS	Decisions Needed/Unknowns:			
		Locations of sampling site?			
		Decisions Needed/ Unknowns:			
		Frequency of sampling?			
		Decisions Needed/ Unknowns:			
		How many wells? Where to locate the wells? How often to test?			
		Decisions Needed/ Unknowns:			
		Existing USGS wells?			
Map contaminated sites and monitor contaminant movement, by December	Water quality of Region to identify contaminated sites. Do a general sweep, then	Who should measure:			
2006.	monitor more often in problem areas.	Identify a person to do the mapping.			
		Who should measure:			
		Identify person to maintain database itself.			
		Measurement to be reported:			
		Identify.			
		Decisions Needed/Unknowns:			
		Water quality constituents? How often are we going to monitor?			
		Decisions Needed/Unknowns:			
		Where to monitor?			
Identify contaminated portions of aquifer and prevent migration of contami- nants, by June 2009.	Water quality of Region to identify contaminated sites. Do a general sweep, then monitor more often in problem areas.	Measurement/Reporting Frequency:			
	Migration of the contaminant	Is Quarterly measurement OK?			
		who should measure:			
		Identify.			
		Measurement to be reported:			
		Identify.			
		<ul> <li>Need groundwater modeling expert to help evaluate management alterna- tives to prevent migration?</li> </ul>			
		Need to determine best method for preventing migration: might be different			
		based on contaminant; might be different based on location			

Table 8-9 Antelope Valley IRWM Plan Performance Measures Action Item Task List (continued)				
Planning Targets	What Needs Measuring	Action Items		
Planning Targets         Prevent unacceptable degradation of natural streams and recharge areas according to the Basin Plan throughout the planning period.         Increase infrastructure and establish policies to use 33% of recycled water to help meet expected demand by 2015, 66% by 2025, and 100% by 2035.	What Needs Measuring         Bacteria, Coliform,         Radioactivity Taste and Odor, Ammonia, Biostimulatory, Substances, Chemical Constituents, Chlorine, Total Residual Color,         Dissolved Oxygen, Floating Materials, Oil and Grease, Non-degradation of Aquatic Communities, Populations Pesticides,         pH, as required by Basin Plan and additionally measure pollutants of concern such as arsenic, nitrate, and TDS.         Amount of recycled water delivered and banked.	Action Items         What needs to be measured:         Identify what additional pollutants of concern, if any, required (e.g., TDS).         What needs to be measured:         How many well sites, how often, where?         Measurement/Reporting Frequency:         Identify. Check Title 22 for monitoring requirements.         Who should measure:         Identify.         Measurement to be reported:         Identify.         Decisions Needed/Unknowns:         Locations of surface water samples during storm events?         Decisions Needed/Unknowns:         Locations of GW sampling site?         Decisions Needed/Unknowns:         Frequency of sampling?         Decisions Needed/Unknowns:         How many wells?         Decisions Needed/Unknowns:         Users Needed/Unknowns:         Users if not already identified.		
		Users, if not already identified.		
Coordinate a regional flood management plan and policy mechanism by the year 2010.	Monitoring progress of development of the Plan and policy mechanism.	<ul> <li>How it should be measured:</li> <li>Identify Plan development, by Section.</li> <li>Who should measure:</li> <li>Identify.</li> <li>Decisions Needed/Unknowns:</li> <li>Need to define the Region for the flood management plan; set the IRWM Plan?</li> <li>Decisions Needed/Unknowns:</li> </ul>		
		When it's going to start? Who's responsible? Who's adopting		
ENVIRONMENTAL RESOURCE MANAGEMENT Contribute to the preservation of an additional 2,000 acres of open space and natural habitat, to integrate and maximize surface water and groundwater management by 2015.	To measure 'preservation': Existing acres of open space and natural habitat to measure additional open space and natural habitat acreage.	<ul> <li>How it should be measured:</li> <li>Identify if additional data needed beyond: land use maps; sa AV conservancy database; General Plan GIS data.</li> <li>Who should measure: <ul> <li>Identify.</li> </ul> </li> <li>Decisions Needed/Unknowns: <ul> <li>Identify priority open space areas that can contribute to succemanagement of surface and groundwater.</li> </ul> </li> </ul>		

	Responsible Party
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Table 8-9 Antelope Valley IRWM Plan Performance Measures Action Item Task List (continued)					
Planning Targets	What Needs Measuring	Action Items	Responsible Party		
LAND USE PLANNING/MANAGEMENT					
Preserve 100,000 acres of farmland in rotation through 2035.	Existing (2005) acreage in rotation (at least 24,000 acres of active farm land. Still	What needs to be measured:			
	need to determine total in rotation) and current land use by type (active farming, fallowing, recharge, etc.)	Acreage of farm land in rotation			
	ranowing, recharge, etc.,	Who should measure:			
		Identify.			
		Decisions Needed/Unknowns:			
		How to measure and how much it will cost? Note that if objective is met,			
		the agricultural demand in the Plan may go up, and likewise the mismatch			
Contribute to local and regional General Planning documents to provide 5 000	Existing acreage of recreational space and future acreage.	How it should be measured:			
acres of recreational space by 2035.					
		General Plan GIS data.			
		Who should measure:			
		Identify.			
Coordinate a regional land use management plan by the year 2010.	Monitoring progress of development of the Plan and policy mechanism.	Who should measure:			
		Identify.			
		Decisions Needed/Unknowns:			
		• Need to define the Region for the land use plan; same boundary as the IRWM			
		Plan?			
		Decisions Needed/Unknowns:			
		When it's going to start? Who's responsible? Who would adopt it?			

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10: Glossary and Acronym List

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## Section 10: Glossary & Acronyms

**10.1 GLOSSARY** 

A

Acre-Foot: The quantity of water required to cover one acre to a depth of one foot; equal to 43,560 cubic feet, or approximately 325,851 gallons.

Adjudication: A case that has been heard and decided by a judge. In the context of an adjudicated groundwater basin, landowners or other parties have turned to the courts to settle disputes over how much groundwater can be extracted by each party to the decision.

Adopted IRWM Plan: The version of the IRWM Plan that is adopted by the governing bodies of at least three or more member agencies to the Regional Water Management Group (RWMG), two of which have statutory authority over water supply, as evidenced by resolutions.

Agronomic Rate: The rate of nutrient application to fulfill a plant's nitrogen requirements while minimizing the amount of nutrients that passes to groundwater.

Alluvium: Sediment deposited by flowing water, such as in a riverbed, flood plain or delta.

Alluvial Aquifer: Earth, sand, gravel or other rock or mineral materials laid down by flowing water, capable of yielding water to a well.

Antelope Valley Region: The Antelope Valley Region, as defined for the purposes of this IRWM Plan, follows the Antelope Valley's key hydrologic features, bounded by the San Gabriel Mountains to the south and southwest, and the Tehachapi Mountains to the northwest, forming a well-defined triangular point at the Valley's western edge. The Region covers portions of northern Los Angeles and southeastern Kern Counties, and encompasses the majority of the AVEK service area.

Applied Water Demand: The quantity of water that would be delivered for urban or agricultural applications if no conservation measures were in place.

Aquifer: An underground layer of rock, sediment or soil, or a geological formation/unit that is filled or saturated with water in sufficient quantity to supply pumping wells.

Arid: A term describing a climate or region in which precipitation is so deficient in quantity or occurs so infrequently that intensive agricultural production is not possible without irrigation.

Article 21 Water: Refers to the SWP contract provision defining this supply as water that may be made available by DWR when excess flows are available in the Delta. Article 21 water is made available on an unscheduled and interruptible basis and is typically available only in average to wet years, generally only for a limited time in the late winter.

Artificial Recharge: The addition of water to a groundwater reservoir by human activity, such as irrigation or induced infiltration from streams, wells, or recharge/spreading basins. See also GROUNDWATER RECHARGE, RECHARGE BASIN.

# В

Bedrock Aquifer: A consolidated rock deposit or geological formation of sufficient hardness and lack of interconnected pore spaces, but which may contain a sufficient amount of joints or fractures capable of yielding minimal water to a well.

Beneficial Uses: Include fish, wildlife habitat, and education, scientific and recreational activities which are dependent upon adequate water flow thorough rivers, streams and wetlands. The Regional Water Quality Control Board's Basin 4A Plan categorizes beneficial uses per water quality standards.

Best Management Practice (BMP): An urban water conservation (water use efficiency) measure that the California Urban Water Conservation Coalition agrees to implement among member agencies. The BMP's are intended to reduce long-term urban water demand.

Brackish Water: Water containing dissolved minerals in amounts that exceed normally acceptable standards for municipal, domestic, and irrigation uses. Considerably less saline than sea water.

Closed Basin: A topographic water basin with no outlet to the ocean

**Confined Aquifer:** A water-bearing subsurface stratum that is bounded above and below by formations of impermeable, or relatively impermeable, soil or rock.

Conjunctive Use: The operation of a groundwater basin in coordination with a surface water storage and conveyance system. The purpose is to recharge the basin during years of above average water supply to provide storage that can be withdrawn during drier years when surface water supplies are below normal.

**Conservation:** Urban water conservation or water use efficiency includes reductions realized from voluntary, more efficient, water use practices promoted through public education and from state-mandated requirements to install water-conserving fixtures in newly constructed and renovated buildings. Agricultural water conservation or agricultural water use efficiency, means reducing the amount of water applied in irrigation through measures that increase irrigation efficiency. See NET WATER CONSERVATION.

**Critical Dry Period:** A series of water-deficient years, usually an historical period, in which a full reservoir storage system at the beginning is drawn down (without any spill) to minimum storage at the end.

Critical Dry Year: A dry year in which the full commitments for a dependable water supply cannot be met and deficiencies are imposed on water deliveries.

Cubic Feet Per Second (CFS): A unit of measurement describing the flow of water. A cubic foot is the amount of water needed to fill a cube that is one foot on all sides, about 7.5 gallons.



Decision 1641: An action by the State Water Resources Control Board (SWRCB) to establish water quality objectives for water users in the Delta. The Bay/Delta Water Quality Control Plan was developed as a means to attain these water quality objectives.

Desalting/Desalination: A process that converts sea water or brackish water to fresh water or an otherwise more usable condition through removal of dissolved solids.

**Disadvantaged Community:** A community with an annual median household income that is less than 80 percent of the statewide annual median household income (CWC § 79505.5 (a)).

Distribution Uniformity (DU): The ratio of the average lowquarter depth of irrigation water infiltrated to the average depth of irrigation water infiltrated, for the entire farm field, expressed as a percent.

Drainage Basin: The area of land from which water drains into a river; as, for example, the Sacramento River Basin, in which all land area drains into the Sacramento River. Also called, "WATERSHED."

Dry-Weather Runoff: Urban runoff that enters the drainage system due to human activities such as car washing and lawn irrigation. Dry-weather runoff can also result from illicit connections to the stormwater or sewer systems.

E

Efficient Water Management Practice (EWMP): An agricultural water conservation measure that water suppliers could implement. EWMPs are organized into three categories: 1) Irrigation Management Services; 2) Physical and Structural Improvements; and 3) Institutional Adjustments.

Effluent: Waste water or other liquid, partially or completely treated or in its natural state, flowing from a treatment plant.

Empirical Yield: See SAFE YIELD (GROUNDWATER)

**Ephemeral:** An ephemeral water body is one that exists for only a short period of time following precipitation or snowmelt. This is not the same as an intermittent or seasonal water body which exists for a longer period of time.

**Evapotranspiration (ET or ETO):** The quantity of water transpired (given off), retained in plant tissues, and evaporated from plant tissues and surrounding soil surfaces. Quantitatively, it is expressed in terms of depth of water per unit area during a specified period of time.

Final IRWM Plan: The version of the IRWM Plan that is deemed ready for adoption by 50 percent or more of the representatives from the RWMG member agencies.

Firm Yield: The maximum annual supply of a given water development that is expected to be available on demand,

with the understanding that lower yields will occur in accordance with a predetermined schedule or probability.

Forebay: A groundwater basin immediately upstream or upgradient from a larger basin or group of hydrologically connected basins. Also, a reservoir or pond situated at the intake of a pumping plant or power plant to stabilize water levels.

Groundwater: Water that occurs beneath the land surface and completely fills all pore spaces of the alluvium or rock formation in which it is located.

Groundwater Basin: A groundwater reservoir, together with all the overlying land surface and underlying aquifers that contribute water to the reservoir.

Groundwater Mining: The withdrawal of water from an aquifer greatly in excess of replenishment; if continued, the underground supply will eventually be exhausted or the water table will drop below economically feasible pumping lifts.

Groundwater Overdraft: The condition of a groundwater basin in which the amount of water withdrawn by pumping exceeds the amount of water that replenishes the basin over a period of years.

Groundwater Recharge: Increases in groundwater quantities or levels by natural conditions or by human activity. See also ARTIFICIAL RECHARGE.

Groundwater Storage Capacity: The space contained in a given volume of deposits. Under optimum use conditions, the usable groundwater storage capacity is the volume of water that can, within specified economic limitations, be alternately extracted and replaced in the reservoir. (Directly related to SAFE YIELD).

Groundwater Table: The upper surface of the zone of saturation (all pores of subsoil filled with water), except where the surface is formed by an impermeable body.

Hydraulic Conductivity: A property of vascular plants, soil or rock, that describes the ease with which water can move

through pore spaces or fractures. It depends on the permeability of the material and on the degree of saturation. value of mg/l is very close to the mass ratio expressed in parts per million (ppm).

Instream Use: Use of water that does not require diversion from its natural watercourse. For example, the use of water for navigation, recreation, fish and wildlife, esthetics, and scenic enjoyment.

**Irrigation Efficiency:** The efficiency of water application. Computed by dividing evapotranspiration of applied water by applied water and converting the result to a percentage. Efficiency can be computed at three levels: farm, district, or basin.

Irrigation Return Flow: Applied water that is not transpired, evaporated, or deep percolated into a groundwater basin, but that returns to a surface water supply.

Lacustrine: In geology, the sedimentary environment of a lake.

Land Subsidence: Land subsidence is the lowering of the land-surface elevation from changes that take place underground. Overdrafting of aquifers is the major cause of subsidence in the southwestern United States.

Leaching: The flushing of salts from the soil by the downward percolation of applied water.

Maximum Contaminant Level (MCL): The maximum level of a drinking water contaminant allowed under the federal Safe Water Drinking Act. MCLs set under National Primary Drinking Water Regulations are legally enforceable standards that apply to public water systems.

M&I: Municipal and Industrial (water use); generally urban uses for human activities.

Milligrams Per Liter (mg/L): The mass (milligrams) of any substance dissolved in a standard volume (liter) of water. One liter of pure water has a mass of 1000 grams. For dilute solutions where water is the solvent medium, the numerical

Mineralization (of Groundwater): The addition of inorganic substances, usually dissolved from surface or aquifer material, to groundwater.

N

Naturally Occurring Contaminants (in Groundwater): A deleterious substance present in groundwater which is of natural origin, i.e., not caused by human activity.

Natural Habitat: See OPEN SPACE.

Net Water Conservation: The difference between the amount of applied water conserved and the amount by which this conservation reduces usable return flows.

Net Water Demand: The applied water demand less water saved through conservation efforts (= net applied water = actual water used).

Non-Point Source Pollution: A diffuse discharge of pollutants throughout the natural environment. See POINT SOURCE.

Open Space: Open space can mean natural open space, passive and active recreation which may or may not be compatible with natural habitats or natural open space preservation. As an example, open space can mean soccer fields, playgrounds, etc and should not be considered as natural habitat. See also NATURAL HABITAT.

**Overdraft:** Withdrawal of groundwater in excess of a basin's perennial yield. See also PROLONGED OVERDRAFT.

P

Parts Per Million (ppm): A ratio of two substances, usually by mass, expressing the number of units of the designated substance present in one million parts of the mixture. For water solutions, parts per million is almost identical to the milligrams per liter.

Per-Capita Water Use: The amount of water used by or introduced into the system of an urban water supplier divided by the total residential population; normally expressed in gallons per-capita-per-day (GCPD).

Perched Groundwater: Groundwater supported by a zone of material of low permeability located above an underlying main body of groundwater with which it is not hydrostatically connected.

**Percolation:** The downward movement of water through the soil or alluvium to the groundwater table.

Perennial Yield: Perennial yield is an estimate of the longterm average annual amount of water that can be withdrawn without inducing a long-term progressive drop in water level. The term "safe yield" is sometimes used in place of perennial yield, although the concepts behind the terms are not identical: the older concept of "safe yield" generally implies a fixed quantity equivalent to a basin's average annual natural recharge, while the "perennial yield" of a basin or system can vary over time with different operational factors and management goals.

**Permeability:** The capability of soil or other geologic formation to transmit water.

Playa: A dry lakebed, also known as an alkali flat. Playas consist of fine-grained sediments infused with alkali salts and are devoid of vegetation.

Playa Deposit: A thick salt deposit that forms over time through the accumulation of layers of dissolved minerals from rocks. Dissolved salts that form a playa deposit are laid by rainfall that rapidly evaporates once reaching the earth's surface.

Point Source: Any discernable, confined and discrete conveyance site from which waste or polluted water is discharged into a water body, the source of which can be identified. See also NON-POINT SOURCE.

**Pollution (of Water):** The alteration of the physical, chemical, or biological properties of water by the introduction of any substance into water that adversely affects any beneficial use of water.

Potable Water: Water suitable for human consumption without undesirable health consequences. Drinkable. Meets Department of Health Services drinking water requirements. Prolonged Overdraft: Net extractions in excess of a basin's perennial yield, averaged over a period of ten or more years.

Proposition 50: The "Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002", as set forth in Division 26.5 of the California Water Code (commencing with § 79500).

**Quaternary Geology:** Younger of the two geologic periods of the Cenozoic era of geologic time lasting from 2 million years ago to the present. Comprising all geologic time from the end of the Tertiary period to today.

Reach Repayment Capacity: SWP contractors, via their water supply contracts with DWR, are allocated specified shares of "reach repayment" capacity in various reaches of the SWP system. This share of capacity pertains to SWP supplies only, and provides each contractor with delivery priority for its SWP supplies. Reach repayment capacity is often less than the actual constructed physical capacity of SWP facilities.

Recharge Basin: A surface facility, often a large pond, used to increase the infiltration of water into a groundwater basin.

Recycled Water: Urban wastewater that becomes suitable for a specific beneficial use as a result of treatment.

Regional Priorities: The short-term and long-term issues and/or objectives that are determined to be most important on the Region's needs.

Regional Water Management Group: A group that, at a minimum, includes three or more local public agencies, at least two of which have statutory authority over water management, which may include but is not limited to water supply, water quality, flood control, or storm water management. The Antelope Valley Regional Water Management Group includes Antelope Valley-East Kern Water Agency, Palmdale Water District, Quartz Hill Water District, Littlerock Creek Irrigation District, City of Palmdale, City of Lancaster, Los Angeles County Sanitation District Nos. 14 & 20,

Rosamond Community Services District, and Los Angeles County Waterworks District No. 40, Antelope Valley.

**Reverse Osmosis:** Method of removing salts from water by forcing water through a membrane.

Return Flow: The portion of withdrawn water that is not consumed by evapotranspiration and returns instead to its source or to another body of water.

Reuse: The additional use of once-used water.

Riparian: Of, or on the banks of, a stream or other of water.

Riparian Vegetation: Vegetation growing on the banks of a stream or other body of water.

Runoff: The surface flow of water from an area; the total volume of surface flow during a specified time.

Safe Yield (Groundwater): The maximum quantity of water that can be withdrawn from a groundwater basin over a long period of time without developing a condition of overdraft. Sometimes referred to as sustained yield.

Sag Pond: An enclosed depression formed where active or recent fault movement results in impounded drainage.

Salinity: Generally, the concentration of mineral salts dissolved in water. Salinity may be measured by weight (total dissolved solids), electrical conductivity, or osmotic pressure. Where seawater is the major source of salt, salinity is often used to refer to the concentration of chlorides in the water. See also TDS.

Serious Overdraft: Prolonged overdraft that results, or would result, within ten years, in measurable, unmitigated adverse environmental or economic impacts, either long-term or permanent. Such impacts include but are not limited to seawater intrusion, other substantial quality degradation, land surface subsidence, substantial effects on riparian or other environmentally sensitive habitats, or unreasonable interference with the beneficial use of a basin's resources.

Seawater Intrusion: Occurs when extractions exceed freshwater replenishment of groundwater basins and causes seawater to travel laterally inland into fresh water aquifers. Secondary Treatment: In sewage treatment, the biological process of reducing suspended, colloidal, and dissolved organic matter in effluent from primary treatment systems. Secondary treatment is usually carried out through the use of trickling filters or by an activated sludge process.

Sheet Flow: Shallow-depth, low velocity water flow.

Silt: A sedimentary material composed of very fine particles intermediate in size between sand and clay.

Siltation: The deposition or accumulation of silt.

Spreading Basin: See RECHARGE BASIN.

Spreading Grounds: See RECHARGE BASIN.

Stakeholder: An individual, group, coalition, agency or others who are involved in, affected by, or have an interest in the implementation of a specific program or project.

**Solute:** A substance dissolved in another substance, usually the component of a solution present in the lesser amount.

Subsidence: See LAND SUBSIDENCE.



Table A Amount: A reference to the amount of water listed in "Table A" of the contract between the State Water Project (SWP) and the contracting agencies and represents the maximum amount of water an agency may request each year.

**Tertiary Geology:** Geologic time period between roughly 65 million and 2 million years ago.

Tertiary Treatment: In sewage, the additional treatment of effluent beyond that of secondary treatment to obtain a very high quality of effluent.

Total Dissolved Solids (TDS): A quantitative measure of the residual minerals dissolved in water that remain after evaporation of a solution. Usually expressed in milligrams per liter (mg/l) or in parts per million (ppm). See also Salinity.

Turbidity: A measure of cloudiness and suspended sediments in water. Water high in turbidity appears murky and contains sediments in suspension. Turbid water may also result in higher concentrations of contaminants and pathogens, that bond to the particles in the water.

Turnback Pools: A means in which SWP contractors with excess Table A Amount water in a given hydrologic year may sell that excess to other contractors. This is included in a provision in the SWP water supply contracts. The program is administered by DWR.

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Wash: A wash, also called an arroyo, is a usually dry creek bed or gulch that temporarily fills with water after a heavy rain, or seasonally.

Water Management Stategies: Specified categories of approaches to meet regional objectives. According to the IRWM Grant Program Guidelines, the water management strategies include, but are not limited to, ecosystem restoration, environmental and habitat protection and improvement, water supply reliability, flood management, groundwater management, recreation and public access, storm water capture and management, water conservation, water quality protection and improvement, water recycling, wetlands enhancement and creation, conjunctive use, desalination, Imported water, land use planning, non-point source pollution control, surface storage, watershed planning, water and wastewater treatment, and water transfers.

Water Management Stratey Alternative: A set of projects, project concepts, actions, and/or studies that when implemented together would fill the gaps, minimize the overlaps, maximize benefits for multiple water management strategies, and ultimately achieve the regional planning objectives.

Water Management Strategy Area: A group of similar or related water management strategies to make the Antelope Valley IRWM Plan development more efficient and manageable (data collection, management, and dissemination).

Water Management Strategy Integration: A process to design water management strategy alternatives to maximize regional benefits by identifying potential synergies, linkages, and gaps between water management strategies and evaluating geographical distribution of project benefits.

Water Management Strategy Objective: A goal for the Region to achieve in order to meet the needs for a water management strategy. A quantifiable objective can be used to allow future measurement of progress towards accomplishment of the objectives (e.g., conserve 10,000 AFY of drinking water by 2030). Water Quality: A term used to describe the chemical, physical, and biologic characteristics of water with respect to its suitability for a particular use.

Water Quality Contamination: For the purposes of the IRWM Plan, any increase in water constituent levels over the State or Federal standards is considered contamination.

Water Quality Degradation: Any increase in water constituent levels over naturally occurring levels is considered degradation.

Water Reclamation: The treatment of water of impaired quality, including brackish water and seawater, to produce a water of suitable quality for the intended use.

Water Right: A legally protected right, granted by law, to take possession of water occurring in a water supply and to divert the water and put it to beneficial uses.

Watershed: The area or region drained by a reservoir, river, stream, etc.; drainage basin.

Water Table: The surface of underground, gravitycontrolled water.

#### **10.2 ACRONYMS**

**AB:** Assembly Bill

AF: acre-foot

AFB: Air Force Base

AFY: acre-feet per year

AQMD: Air Quality Management District

ASR: Aquifer Storage and Recharge/Recovery

AV: Antelope Valley

AVEK: Antelope Valley-East Kern Water Agency

AVSWCA: Antelope Valley State Water Contractors Association

AVWCC: Antelope Valley Water Conservation Coalition

**BIA:** Building Industry Association

**BLM:** Bureau of Land Management

**BMP:** Best Management Practice

CAS: Conventional Activated Sludge

- CCD: Census County Division
- **CCR:** California Code of Regulations

CDFG: California Department of Fish and Game **IWRP:** Integrated Water Resources Plan CDFA: California Department of Food and Agriculture JPA: Joint Powers Authority **CEQA:** California Environmental Quality Act LACSD: Los Angeles County Sanitation District cfs: cubic feet per second LACWWD 40: Los Angeles County Waterworks District No. 40 **CIMIS:** California Irrigation Management Information System LADPW: Los Angeles Department of Public Works **CIP:** Capital Improvements Plan LADWP: Los Angeles Department of Water and Power **CLWA:** Castaic Lake Water Agency LAFCO: Local Area Formation Commission **CMWD:** Calleguas Municipal Water District Lancaster: Lancaster, City of CUWCC: California Urban Water Conservation Council LAWA: Los Angeles World Airports **CVP:** Central Valley Project LCID: Littlerock Creek Irrigation District CWA: Clean Water Act LWRP: Lancaster Water Reclamation Plant **DAC:** Disadvantaged Communities M&I: municipal & industrial **DPH:** Department of Public Health **MBR:** Membrane bioreactor MCL: Maximum Contaminant Level DMM: Demand management measure **DU:** Distribution Uniformity MG: million gallon **DWMA:** Desert Wildlife Management Area mgd: million gallons per day **DWR:** Department of Water Resources mg/L: milligrams per liter **EIR:** Environmental Impact Report MHI: median household income ESA: Federal Endangered Species Act **MOA:** Memorandum of Agreement ETc: Evapotranspiration (for a particular crop) **MOU:** Memorandum of Understanding ETo: Evapotranspiration (general or reference) MW: megawatt **EWMP:** Efficient Water Management Practice **MWD:** Municipal Water District NLFC: Newhall Land and Farming Company FEIR: Final Environmental Impact Report FWSMPU: Final Water System Master Plan Update NPDES: National Pollutant Discharge Elimination System gal: gallon O&M: operations and maintenance **GIS**: Geographic Information System **OEHHA:** Office of Environmental Health Hazard Assessment gpcd: gallons per-capita-per-day NRCS: Natural Resource Conservation Service gpd: gallons per day PHG: Public Health Goal **gpm:** gallons per minute ppb: parts per billion GWR-RW: Groundwater Recharge Using Recycled Water ppm: parts per million **GWR:** Groundwater recharge PAC: Performance Advisory Committee HCP: Habitat Conservation Plan Palmdale: Palmdale, City of ° F: degree Fahrenheit **PID:** Palmdale Irrigation District IRWM Plan: Integrated Regional Water Management Plan **PM:** Particulate Matter IUWMP: Integrated Urban Water Management Plan **PWD:** Palmdale Water District

- PWRP: Palmdale Water Reclamation Plant
- QHWD: Quartz Hill Water District

**RCSD:** Rosamond Community Services District

RO: reverse osmosis

ROC: reactive organic compound

RRBWSD: Rosedale-Rio Bravo Water Storage District

RWMG: Regional Water Management Group

**RWQCB:** Regional Water Quality Control Board

RWQCB-LR: Regional Water Quality Control Board – Lahontan Region

SB: Senate Bill

SCAG: Southern California Association of Governments

SEA: Significant Ecological Area

Semitropic: Semitropic Water Storage District

SMART: Specific Measurable Attainable Relevant Timebased

- SWP: State Water Project
- SWRCB: State Water Resources Control Board

TAC: Technical Advisory Committee

**TDS:** Total Dissolved Solids

THM: Trihalomethanes

**TTHM:** Total Trihalomethanes

TMDL: Total Maximum Daily Load

TOC: total organic carbon

TTP: Tertiary Treatment Plant

UCCE: University of California Cooperative Extension

ug/L (or µg/L): micrograms per liter

**ULFT:** Ultra Low Flush Toilet

uS/cm (or µg/cm): microsiemens per centimeter

U.S.: United States

USACE: U.S. Army Corps of Engineers

USBR: U.S. Bureau of Reclamation

USFWS: U.S. Fish and Wildlife Service

USGS: U.S. Geological Survey

UWMP: Urban Water Management Plan

WDR: Waste Discharge Requirements

- WMS: Water Management Strategy
- WMSA: Water Management Strategy Area
- WRP: Water Reclamation Plant
- WSMP: Water System Master Plan
- WSMS: Water Supply Management Strategy

WTP: Water Treatment Plant

WWTP: Wastewater Treatment Plant

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