Attachment 15
IRWM Plan – Reduce Delta Water Dependence

Attachment 15 addresses the requirement to summarize the portions of the IRWM Plan that address how implementation of the IRWM Plan will reduce dependence on the Sacramento-San Joaquin Delta for water supply.

This Attachment 4 includes the following Sections:

Section 1
Summary Information

The Upper Santa Margarita Watershed Planning Region currently faces significant water supply issues and challenges that are common throughout southern California, including significant reliance on imported water supply from both the Sacramento-San Joaquin Bay Delta and the Colorado River. In fact, imported water is the largest water supply source in the upper watershed with well over 50 percent of demands met through imported water. For this reason, one of the regional objectives approved by the stakeholders, and promoted within the IRWM Plan for the Upper Santa Margarita Watershed Planning Region (IRWM Plan) is to "Develop a more reliable and diverse portfolio of water supplies."

Section 1.1 Develop a More Reliable and Diverse Portfolio of Water Supplies

Section 3.1 of the IRWM Plan presents this objective and describes several reasons to reduce dependency on imported water to address multiple concerns. While imported Bay Delta water is generally combined with imported Colorado River water, specific points address Bay Delta water individually. The following is an excerpt from pages 3-2 and 3-3 of the IRWM Plan.

Water purveyors in the watershed rely heavily on imported water supplies from the Metropolitan Water District of Southern California (MWD). Currently, RCWD [Rancho California Water District] obtains approximately 70 percent of imported water from northern California and the Colorado River. Similarly, EMWD [Eastern Municipal Water District] obtains 75 percent of its water supply from imported sources through MWD, EVMWD [Elsinore Valley Municipal Water District] 85 percent, and WMWD [Western Municipal Water District] obtains over 90 percent of its supplies from imported sources through MWD. Although imported water has historically been an economical and reliable source of good-quality water, water districts in the watershed and throughout southern California understand the need to reduce dependency on imported water to address several the following concerns:

- *Imported water supplies are susceptible to interruption during catastrophic conditions such as earthquakes or other conditions that may impact conveyance facilities.*
- *The availability of imported water supplies is a function of weather patterns in northern California and in the upper Colorado River basin. It has been documented that the Colorado River basin is experiencing the driest conditions in 500 years and some believe that previous water allocations of this resource are no longer sustainable. Furthermore, a trend in the reduction in the Sierra Nevada snow pack may also impact water supply from the Bay-Delta in northern California.*
- *Environmental protection goals and mandates may impact the ability to divert water from the Bay-Delta to southern California, a condition experienced in June 2007, when State Water Project pumps had to be shut down to protect Delta smelt populations.*
- *Climate change may further strain water resources availability.*
- *The cost of imported water is expected to increase in the future as new storage and conveyance facilities are needed*
- *Population and economic growth in the region will exert additional pressures on available water resources*

The following sub-objectives were established in order to further describe the goal of developing a more reliable and diverse water supply portfolio (Labeled further in the text as WS-1 [Water Supply-1] through WS-5)*:*

- *Continue to implement water conservation efforts to reduce water consumption for the region* (WS-1)
- *Continue to develop cost-effective, local water supplies such as groundwater, surface water, and recycled water in order to reduce dependency on imported water* (WS-2)
- *Manage drought response to increase water supply reliability through implementation of water districts' urban water management plans, drought management plans, and water facilities master plans* (WS-3)
- *Construct, operate and maintain an efficient water supply infrastructure, including water conveyance, treatment, storage and distribution* (WS-4)
- *Consider climate change in the evaluation of future water supply options* (WS-5)

The following water supply targets were developed to address the regional objective to 'Develop a More Reliable and Diverse Portfolio of Water Supplies'. The following is an excerpt from pages 3-11 and 3-12 of the IRWM Plan.

- *Water agencies in the region will develop over 114,000 acre-feet per year of additional local supply by 2030*
- *Imported water dependency will be reduced by 25 percent from conservation and local supply development by 2030*
- *Diversity of supplies will include:*
  - *Expanded groundwater*
  - *New desalination of brackish groundwater*
  - *New recycled water, including demineralization to improve water quality*
  - *Conjunctive use storage (surface and groundwater)*
  - *Water transfers*

1.2 Water Management Strategies

The IRWM Plan also identifies water management strategies which address the water supply sub-objectives listed in an effort to accomplish the water supply targets. This section presents these sub-objectives and their corresponding water management strategies, as well as specific projects which have been nominated to implement these strategies. The following is an excerpt from pages 4-8 to 4-17 of the IRWM Plan.

1.2.1 Objective WS-1: Continue to implement water conservation efforts to reduce water consumption for the region

Strategy WS-1: Water Conservation, Urban Water Use Efficiency, Agricultural Water Use Efficiency Strategies

Both urban and agricultural water users in the region are currently implementing conservation measures. RCWD, EVWMD, EMWD, WMWD, and multiple cities are signatories to the California Urban Water Conservation Council MOU to implement BMPs for water conservation. Agricultural users are also controlling water use through efficient management practices and irrigation technologies. Significant efforts are being made to increase water savings. Future conservation must focus on development of new technologies, further economic incentives, and reductions in outdoor water uses.

1.2.2 Objective WS-2: Continue to develop cost-effective, local water supplies such as groundwater, surface water, and recycled water in order to reduce dependency on imported water

Strategy WS-2a: Imported Water Strategy

The region relies on imported water from MWD for the majority of its supplies. MWD provides both treated and untreated water from northern California via the [State Water Project] SWP and Colorado River. The reliability of both supply sources is susceptible to long-term droughts and water quality issues. Water imported from northern California must be pumped through the environmentally sensitive Bay-Delta. In recent years, native fish populations in the Delta have been decreasing, which has limited the amount of water that can be pumped to southern California. Deteriorating levees, climate change, and flood and earthquake risks also raise concerns about the future of Delta exports. In addition, MWD water rates are projected to steadily increase due to implementation of its integrated plan and capital improvement program. To prepare itself for potential imported water reduction, the upper watershed region must focus on developing a local supply portfolio. The upper watershed region also must improve its management and use of imported water supplies to reduce future costs.

Strategy WS-2b: Groundwater Management, Conjunctive Use, Conjunctive Management and Groundwater Storage Strategies

Groundwater represents a significant local water supply in the watershed. RCWD, EVWMD, EMWD, and other private users rely on groundwater to meet a portion of their demands. In dry years when natural recharge is low and pumping is high, groundwater levels decline, which could increase overdraft potential, degrade water quality, or result in subsidence. To protect groundwater resources, the region has several opportunities to increase artificial recharge or improve management of the basin through conjunctive use projects.

1.2.3 Objective WS-3: Manage drought response to increase water supply reliability through implementation of water districts' urban water management plans, drought management plans, and water facilities master plans

Strategy WS-3: Water Supply Reliability Strategy

Water supply reliability highlights current concerns regarding imported water supplies, as described above, and the shift to developing more local supplies. Groundwater, desalination, conservation, local storage, and water recycling, also described above, present opportunities to improve water supply reliability in the region.

1.2.4 Objective WS-4: Construct, operate and maintain an efficient water supply infrastructure, including water conveyance, treatment, storage and distribution

Strategy WS-4: Conveyance Strategy

Conveyance infrastructure can improve the delivery of water throughout the system. Moving water more freely around the system can help meet peak demands and can also support emergency water needs. Conveyance can also support storm water and urban runoff capture. Several limitations include installation costs and use versus capacity issues.

Strategy WS-5: Water Transfers Strategy

The upper watershed region implements water transfers within the region by moving water between agricultural, urban, and environmental users. The region indirectly participates in water transfers across regions through its involvement with MWD. MWD pursues water transfers from northern California, southern Central Valley, Colorado River basin, and Mohave basin. These transfers benefit the upper watershed region's imported water supply and water supply reliability. At this time, the IRWMP does not include individual water transfer projects; however, the region recognizes benefits of water transfers and will continue to monitor opportunities. In fact, RCWD's long-term water supply plan recommends dry year water transfers and the water supply projects included in this IRWMP will facilitate these transfers.

Strategy WS-6: Desalination Strategy

The region has limited uses of desalination to meet drinking water demands. Because the region is primarily inland, ocean water desalination is not considered a likely or cost-effective source for this area. The groundwater basins are currently of sufficient quality that desalting is not necessary for drinking water purposes. The agriculture in the region is typically high value crops, including grapes, avocados, and citrus, which are susceptible to high salt levels in irrigation water. Reverse osmosis technologies will be used, however, to remove salts from recycled water in order to allow recycled water to be used for agricultural irrigation.

Strategy WS-7: Surface Storage Strategy

Surface storage is limited in the region and includes Diamond Valley Lake, Lake Skinner, Vail Lake, and some small scale reservoirs. MWD owns and operates Diamond Valley as an emergency water source for southern California during a drought and Lake Skinner for water storage. RCWD owns and operates Vail Lake, which has a storage capacity of 50,000 AF and is currently used to help groundwater recharge. Building new surface storage in the region has many challenges, including suitable sites, high costs, and environmental and water quality constraints.

Strategy WS-8: Recycled Water, Recycled Municipal Water Strategies

Recycled water is a significant resource in the region as it can offset potable water demands. RCWD, EVWMD, EMWD, and WMWD all operate water reclamation facilities to serve landscape irrigation and

other industrial applications. Recycled water, as currently treated, has too high of TDS levels to serve agricultural irrigation. Recycled water would need advanced treatment, or RO, to supply agriculture. Some other challenges for recycled water uses in the region are identifying new recycled water users, disposal of treated effluent and/or brine, water quality treatment requirements, and costs of advanced treatment and conveyance infrastructure.

1.2.5 Objective WS-5: Consider climate change in the evaluation of future water supply options

Consistent with the State Water Plan, the Upper Santa Margarita Watershed region is committed to alternative energy (such as solar) to supply energy needed to operate water facilities. RCWD, EMWD, and WMWD are currently operating energy efficient facilities and are planning to incorporate alternative energy sources into future water facilities. For example, the Recycled/Raw Water Project Phase 1 entails the installation of solar photo voltaic panels at RCWD's Santa Rosa Water Reclamation Facility for an expected generation of 1.8 to 2.0 million kWh annually. As such, this project reduces energy use and greenhouse gas emissions. As an enhancement to the Recycled/Raw Water Project, Phase I, this project will benefit agriculture and associated disadvantaged communities. The combined benefits of the Recycled/Raw Water Project will reduce CO2 emissions by over 5 million pounds per year.

Directly tied to these water management strategies are specific projects which have been proposed and included in the IRWM Plan. Projects nominated and approved after the IRWM Plan was approved are ranked along with the previously approved projects, through a formal process in the regional water management group, according to these and other IRWM Plan strategies.

The IRWM Plan notes that each of these strategies would benefit the planning region, as well as the entire San Diego Funding Area by decreasing treated water demands from MWD and opening up capacity to deliver treated water to San Diego in times of critical shutdown or prolonged drought. Water supply reliability project benefits in the upper watershed would also stretch to all other regions reliant on MWD for imported water supply. Cumulative water supply reliability benefits produced by the Upper Santa Margarita Watershed region, South Orange County, and Santa Ana Watershed reduce dry year/drought requirements for supply users and habitats connected to the Colorado River and Sacramento-San Joaquin Bay Delta.

Increased water supply reliability and drought protection through local water supply projects in the upper watershed also benefits the state because it reduces demand on the Delta pumping and takes water when it is economical and most available. Reduced pumping can benefit Delta fish populations and help meet water quality requirements. Additional benefits to the Delta area identified in the plan include economic benefits.

Section 2
IRWM Plan Excerpts

This section includes relevant plan excerpts referred to in the preceding Section 1 Summary Information.

Objective 1. Develop a More Reliable and Diverse Portfolio of Water Supplies

See pages 3-2 through 3-3 of the 2007 IRWM Plan.

Water purveyors in the watershed rely heavily on imported water supplies from the Metropolitan Water District of Southern California (MWD). Currently, RCWD obtains approximately 70 percent of imported water from northern California and the Colorado River. Similarly, EMWD obtains 75 percent of its water supply from imported sources through MWD, EVMWD 85 percent, and WMWD obtains over 90 percent of its supplies from imported sources through MWD. Although imported water has historically been an economical and reliable source of good-quality water, water districts in the watershed and throughout southern California understand the need to reduce dependency on imported water to address several the following concerns:

- Imported water supplies are susceptible to interruption during catastrophic conditions such as earthquakes or other conditions that may impact conveyance facilities.
- The availability of imported water supplies is a function of weather patterns in northern California and in the upper Colorado River basin. It has been documented that the Colorado River basin is experiencing the driest conditions in 500 years and some believe that previous water allocations of this resource are no longer sustainable. Furthermore, a trend in the reduction in the Sierra Nevada snow pack may also impact water supply from the Bay-Delta in northern California.
- Environmental protection goals and mandates may impact the ability to divert water from the Bay-Delta to southern California, a conditioned experience in June 2007, when State Water Project pumps had to be shut down to protect Delta smelt populations
- Climate change may further strain water resources availability
- The cost of imported water is expected to increase in the future as new storage and conveyance facilities are needed
- Population and economic growth in the region will exert additional pressures on available water resources

The following sub-objectives were established in order to further describe the goal of developing a more reliable and diverse water supply portfolio.

- Continue to implement water conservation efforts to reduce water consumption for the region
- Continue to develop cost-effective, local water supplies such as groundwater, surface water, and recycled water in order to reduce dependency on imported water

- Manage drought response to increase water supply reliability through implementation of water districts' urban water management plans, drought management plans, and water facilities master plans
- Construct, operate and maintain an efficient water supply infrastructure, including water conveyance, treatment, storage and distribution

Consider climate change in the evaluation of future water supply options.

4.2.1 Strategies that Develop a More Reliable and Diverse Portfolio of Water Supplies (WS)

The Upper Santa Margarita Watershed region is currently using surface, ground, recycled, and imported water to meet their demands. The following sections describe applicable water management strategies to address water supply for the region.

4.2.1.1 Water Supply Targets

- Water agencies in the region will develop over 114,000 acre-feet per year of additional local supply by 2030
- Imported water dependency will be reduced by 25% from conservation and local supply development by 2030
- Diversity of supplies will include:
  - Expanded groundwater
  - New brackish desalination of groundwater
  - New recycled water, including demineralization to improve water quality
  - Conjunctive use storage (surface and groundwater)
  - Water transfers

Objective WS-1: Continue to implement water conservation efforts to reduce water consumption for the region

Strategy WS-1: Water Conservation, Urban Water Use Efficiency, Agricultural Water Use Efficiency Strategies

Both urban and agricultural water users in the region are currently implementing conservation measures. RCWD, EVWMD, EMWD, WMWD, and multiple cities are signatories to the California Urban Water Conservation Council MOU to implement BMPs for water conservation. Agricultural users are also controlling water use through efficient management practices and irrigation technologies. Significant efforts are being made to increase water savings. Future conservation must focus on development of new technologies, further economic incentives, and reductions in outdoor water uses. Potential regional water conservation projects include Vail Lake Stabilization and Conjunctive Use, Sustainable Agriculture, Recycled/Raw Water Project Phases 1 and 2, Groundwater Recharge Improvements and New Wells, Agricultural Land Stewardship, Santa Margarita Watershed Council, Public Education and Outreach, and Anza Groundwater Study.

Sustainable Agriculture
This project will improve water use efficiency in agricultural lands, specifically avocado groves, by implementing new technologies and integrated water management practices based on the Sustainable Management Practice Workbook model of the Vintner's Association. This project will also improve water quality through reduction of non-point source pollution, and will increase water conservation. By sustaining agriculture and ensuring potable water supply for residents of the agricultural areas, this project benefits disadvantaged communities.

Agricultural Land Stewardship
The Elsinore Murrieta Anza Resource Conservation District, in partnership with RCA, would work with agricultural land-owners, including citrus farmers and wineries, on water conservation and other sustainable techniques. Tasks under this project may include both educational and structural solutions.

Santa Margarita Watershed Council
Funding for this project would result in the creation of Watershed Council with one paid staff, local stakeholder members, and an advisory group of local agencies. This council would help provide a central support system allowing for great coordination of information, projects and on-going efforts within the watershed.

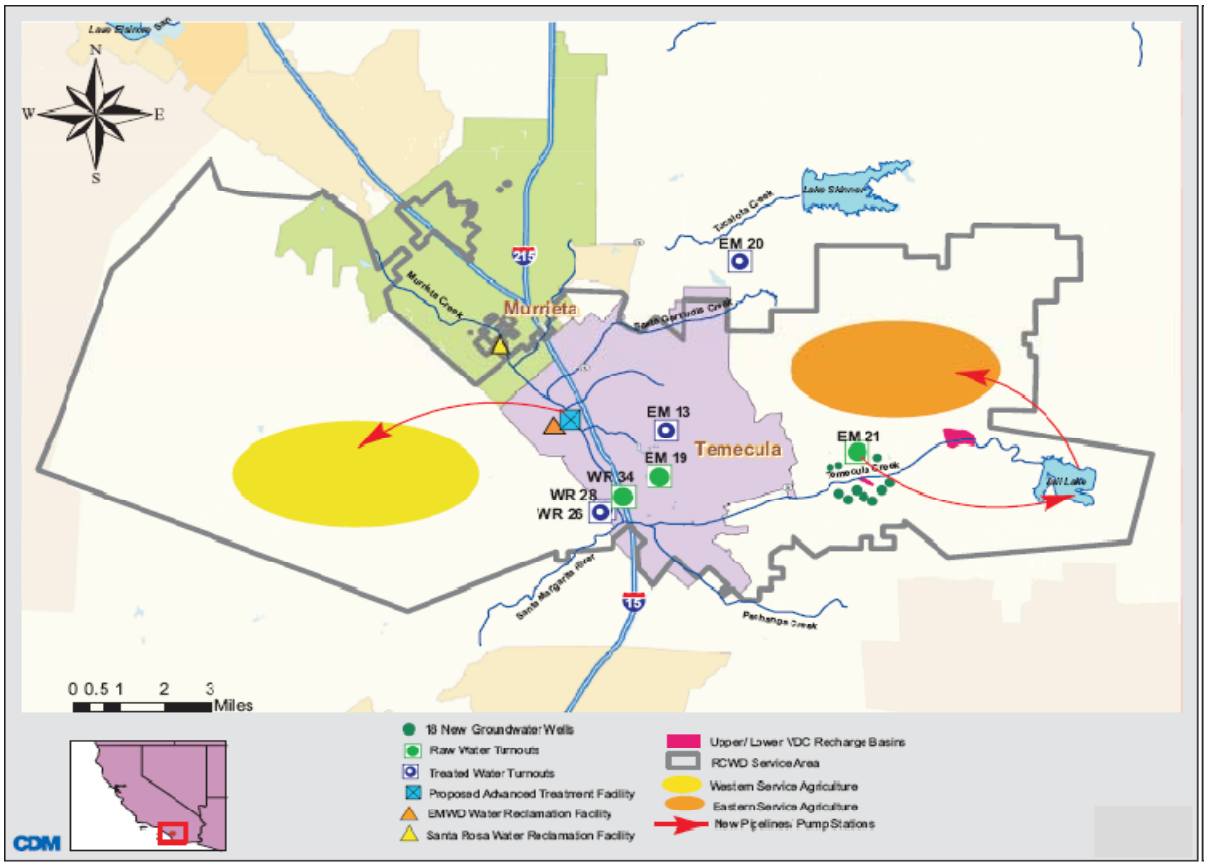
Public Education and Outreach
The Elsinore Murrieta Anza Resource Conservation District Public Education and Outreach project would provide education and outreach on watershed issues to the community, including youth groups and disadvantaged communities in watershed.

Objective WS-2 Continue to develop cost-effective, local water supplies such as groundwater, surface water, and recycled water in order to reduce dependency on imported water

Strategy WS-2a Imported Water Strategy

The region relies on imported water from MWD for the majority of its supplies. MWD provides both treated and untreated water from northern California via the SWP and Colorado River. The reliability of both supply sources is susceptible to long-term droughts and water quality issues. Water imported from northern California must be pumped through the environmentally sensitive Bay-Delta. In recent years, native fish populations in the Delta have been decreasing, which has limited the amount of water that can be pumped to southern California. Deteriorating levees, climate change, and flood and earthquake risks also raise concerns about the future of Delta exports.

In addition, MWD water rates are projected to steadily increase due to implementation of its integrated plan and capital improvement program. To prepare itself for potential imported water reduction, the upper watershed region must focus on developing a local supply portfolio. The upper watershed region also must improve its management and use of imported water supplies to reduce future costs. Potential projects that address imported water use include Vail Lake Stabilization and Conjunctive Use, Recycled/Raw Water Project Phases 1 and 2, and Murrieta-Temecula Groundwater Recharge Feasibility Study.



Recycled/Raw Water Project Phase 1

This project will convert two agricultural areas within RCWD's service area, the Santa Rosa and Rancho Divisions, from potable water supplies to demineralized and non-potable supplies. In the Santa Rosa Division, municipal wastewater will be delivered to western agricultural areas. Water would be treated by microfiltration and reverse osmosis and blended with non-demineralized reclaimed water to meet TDS concentration requirements. In the Rancho Division, agricultural demands will be met with raw imported water. This element is dependent on completion of the Vail Lake Stabilization and Conjunctive Use Project (Project 1).

This project will conserve energy and lessen greenhouse gas emissions through discontinuation of the pumping and treatment of imported water to agricultural lands. Disadvantaged communities will benefit from sustained agricultural uses and managed potable water supplies to the agricultural region. In addition, important wildlife corridors associated with these agricultural lands will be preserved across the Watershed.

To further reduce impacts of greenhouse gas emissions, RCWD will install solar photo voltaic panels at RCWD's Santa Rosa Water Reclamation Facility for an expected generation of 1.8 to 2.0 million kWh annually.

Both the recycled/raw water conversion and the installation of solar panels will eliminate over 5 million pounds of CO^2 per year currently going into the atmosphere.

Recycled/Raw Water Project Phase 2
This project is the second phase in the conversion of two agricultural areas within RCWD's service area from potable water supplies to demineralized and non-potable supplies. In the first phase, treatment facilities for 10,000 AFY of demineralized water were provided along with conveyance facilities to agricultural areas in the Santa Rosa and Rancho Divisions. This second phase includes the expansion of the demineralization treatment capacity to 18,000 AFY.

Strategy WS-2b Groundwater Management, Conjunctive Use, Conjunctive Management and Groundwater Storage Strategies

Groundwater represents a significant local water supply in the watershed. RCWD, EVWMD, EMWD, and other private users rely on groundwater to meet a portion of their demands. In dry years when natural recharge is low and pumping is high, groundwater levels decline, which could increase overdraft potential, degrade water quality, or result in subsidence. To protect groundwater resources, the region has several opportunities to increase artificial recharge or improve management of the basin through conjunctive use projects.

Vail Lake Stabilization and Conjunctive Use
This project would entail the construction of the Vail Lake Transmission Main and Pump Station to convey untreated imported water during wet years to stabilize lake levels in Vail Lake allowing for use during dry years. Currently, the source of water for Vail Lake is natural runoff. But by constructing a pipeline from one of the District's imported water turnouts to the lake would allow for seasonal storage and conjunctive use storage. During wet years and winter months, imported water would be stored in Vail Lake and then used to replenish groundwater pumping in dry years and summer months. The project would also provide a raw water connection to agricultural users, who are currently using treated imported water.

A programmatic Environmental Impact Report (EIR), which includes this project, will be completed in November, 2007. A draft Feasibility Study was recently completed, including a conceptual engineering design.

Groundwater Recharge Improvements and New Wells
RCWD would improve groundwater recharge facilities and construct up to 18 new groundwater wells to increase water supply and conjunctive use storage.

Murrieta-Temecula Groundwater Recharge Feasibility Study
Study to investigate recharge potential for Murrieta-Temecula basin, includes geotechnical, geological, hydrologic, water quality investigations, aquifer characterization, land use availability, and evaluation of facilities and capacities.

Anza Groundwater Study
This project would include the installation of groundwater wells to study groundwater aquifers for potential sustainable residential development in Anza. Water quality data would be analyzed to determine relative loading from pollutants of concern. These efforts could be coordinated with other water quality monitoring efforts within the region. Currently, the area is unable to sustain well-water draws by residential wells as a result of an ongoing 15-year drought within the region. This has led to water rights lawsuits from neighboring Native American bands.

The Anza area is a disadvantaged community as defined in Section 2. As part of the IRWMP, the development team met with stakeholders in the Anza area and attended the Anza Valley Municipal Advisory Committee (MAC) to explain the IRWMP process. The IRWMP team has assisted the MAC with planning for land use with Riverside County planning and with beginning a process to develop a water resource management plan for the area to be linked to the land use for developing a sustainable community. Ultimately, these efforts led to the submittal of the Anza Groundwater Study.

Water Supply/Infrastructure
The Bureau of Reclamation is entering into Phase 4 of an ongoing water quality and monitoring study within the Santa Margarita Watershed. The Santa Margarita Watershed Water Supply Augmentation, Water Quality Projection, and Environmental Enhancement project that includes is a stakeholder-coordinated effort that includes a watershed-wide monitoring program. Building on past analysis and review of historic water quality data available for the region, this study looks to create a comprehensive water quality monitoring program in order to create a more complete picture of water quality within the region.

Objective WS-3 Manage drought response to increase water supply reliability through implementation of water districts' urban water management plans, drought management plans, and water facilities master plans

Strategy WS-3 Water Supply Reliability Strategy

Water supply reliability highlights current concerns regarding imported water supplies, as described above, and the shift to developing more local supplies. Groundwater, desalination, conservation, local storage, and water recycling, also described above, present opportunities to improve water supply reliability in the region. Projects are Vail Lake Stabilization and Conjunctive Use, Recycled/Raw Water Project Phases 1 and 2, Groundwater Recharge Improvements and New Wells, Water Supply/Infrastructure, Murrieta-Temecula Groundwater Recharge Feasibility Study, Anza Groundwater Study.

Objective WS-4 Construct, operate and maintain an efficient water supply infrastructure, including water conveyance, treatment, storage and distribution

Strategy WS-4 Conveyance Strategy

Conveyance infrastructure can improve the delivery of water throughout the system. Moving water more freely around the system can help meet peak demands and can also support emergency water needs. Conveyance can also support storm water and urban runoff capture. Several limitations include installation costs and use versus capacity issues. Project opportunities in the region include Raw/Recycled Water Project Phase 1 and 2, Murrieta Creek Flood Control Environmental Restoration and Recreation Project, Groundwater Recharge Improvement and New Wells, Implementation of the Anza Master Drainage Plan, Implementation of the Murrieta Creek Master Drainage Plan, Implementation of Wildomar Master Drainage Plan, Capital Improvement Projects, Retrofit Public Property with Water Quality Measures, Funding for NPDES related Public Education, Enhance Master Drainage Plan, and TMDL Implementation.

Murrieta Creek Flood Control, Environmental Restoration and Recreation Project
This project entails structural alterations along seven miles of Murrieta Creek from Temecula to Murrieta and the creation of a 270-acre detention basin for flood control. A new 50-acre public park will include playfields, pedestrian, bicycle, and equestrian trails and other recreational uses. Three bridges will be constructed across Santa Gertrudis Creek and Murrieta Creek. Environmental restoration will encompass 163 acres of transitional wetland habitat from freshwater marsh to willow riparian woodland with an upland buffer of mulefat and coastal sage scrub. Low-flow channels with natural backwaters will be created within Murrieta Creek, along with a 14-acre sediment catchment area at the confluence of Murrieta and Warm Springs Creek.

Implementation of Master Drainage Plans
These projects propose to construct un-built MDP flood control facilities in various MDPs. Additionally, these projects will identify opportunities to enhance the flood control facilities proposed for construction with water quality measures within each area covered by the plans. Plans included are:

- Anza Master Drainage Plan
- Murrieta Creek Master Drainage Plan
- Wildomar Master Drainage Plan

Capital Improvement Projects
Funds for this project would pay for the planning, design, and/or implementation of flood control capital improvement projects not covered in the MDPs. Additional projects may be identified that provide a water quality benefit, especially in disadvantaged areas in Riverside County.

Retrofit Public Property with Water Quality Measures
This project proposes an evaluation of public properties including roads, parks, and other areas for their potential for water quality management measures including but not limited to:

- Low Impact Design (LID) features
- Structural Best Management Practices (BMPs)
- Other Water quality / conservation / management measures

Following evaluation and determination of appropriate measures (as needed), additional funds would be used for implementation of proposed retrofits.

Funding for NPDES related Public Education
Public Education is a necessary component of an effective NPDES program. It targets the anthropogenic source of pollutants. This project will help fund public education activities, especially those that are directed toward addressing the Total Maximum Daily Load (TMDL) impairments in the watershed.

Enhance Master Drainage Plan

This project proposes updates to the Riverside County Flood Control and Water Conservation District's MDP to reflect current environmental constraints, in particular, to incorporate water quality and water conservation aspects. An update will result in plans that promote feasible environmental benefits, identify retrofit opportunities, and utilize regional opportunities for environmental mitigation for regulatory and permitting compliance.

TMDL Implementation
This multi-phased project would, plan and construct projects designed specifically to address TMDL and 303(d) pollutants affecting the upper watershed. A range of structural and non-structural opportunities may be considered under this project. Priority of design may be given to those projects that address multiple pollutants of concern.

Strategy WS-5 Water Transfers Strategy

The upper watershed region implements water transfers within the region by moving water between agricultural, urban, and environmental users. The region indirectly participates in water transfers across regions through its involvement with MWD. MWD pursues water transfers from northern California, southern Central Valley, Colorado River basin, and Mohave basin. These transfers benefit the upper watershed region's imported water supply and water supply reliability. At this time, the IRWMP does not include individual water transfer projects; however, the region recognizes benefits of water transfers and will continue to monitor opportunities. In fact, RCWD's long-term water supply plan recommends dry year water transfers and the water supply projects included in this IRWMP will facilitate these transfers.

Strategy WS-6 Desalination Strategy

The region has limited uses of desalination to meet drinking water demands. Because the region is primarily inland, ocean water desalination is not considered a likely or cost-effective source for this area. The groundwater basins are currently of sufficient quality that desalting is not necessary for drinking water purposes. The agriculture in the region is typically high value crops, including grapes, avocados, and citrus, which are susceptible to high salt levels in irrigation water. Reverse osmosis technologies will be used, however, to remove salts from recycled water in order to allow recycled water to be used for agricultural irrigation (see the Recycled/Raw Water Project Phase 1 and 2 projects).

Strategy WS-7 Surface Storage Strategies

Surface storage is limited in the region and includes Diamond Valley Lake, Lake Skinner, Vail Lake, and some small scale reservoirs. MWD owns and operates Diamond Valley as an emergency water source for southern California during a drought and Lake Skinner for water storage. RCWD owns and operates Vail Lake, which has a storage capacity of 50,000 AF and is currently used to help groundwater recharge. Building new surface storage in the region has many challenges, including suitable sites, high costs, and environmental and water quality constraints. Opportunities for surface storage should focus largely on better management of existing reservoirs. Projects include Vail Lake Stabilization and Conjunctive Use.

Strategy WS- 8 Recycled Water, Recycled Municipal Water Strategies

Recycled water is a significant resource in the region as it can offset potable water demands. RCWD, EVWMD, EMWD, and WMWD all operate water reclamation facilities to serve

landscape irrigation and other industrial applications. Recycled water, as currently treated, has too high of TDS levels to serve agricultural irrigation. Recycled water would need advanced treatment, or RO, to supply agriculture. Some other challenges for recycled water uses in the region are identifying new recycled water users, disposal of treated effluent and/or brine, water quality treatment requirements, and costs of advanced treatment and conveyance infrastructure. Opportunities to expand recycled water use in the region include Recycled/Raw Water Project Phases 1 and 2, Historic Downtown Murrieta Wastewater Construction Project, Water Supply/Infrastructure.

Historic Downtown Murrieta Wastewater Construction Project
This project entails installation of new sewer conveyance facilities in the Historic Downtown Murrieta community. By replacing septic systems in disrepair, this project would benefit water quality and preserve future water sources from contamination.

Strategy WS-9 System Reoperation Strategy

System reoperation allows for better management and movement of existing water supplies and could increase water supplies during dry years. System reoperation projects include Raw/Recycled Water Project Phase 1 and 2.

Objective WS-5 Consider climate change in the evaluation of future water supply options

Consistent with the State Water Plan, the Upper Santa Margarita Watershed region is committed to alternative energy (such as solar) to supply energy needed to operate water facilities. RCWD, EMWD, and WMWD are currently operating energy efficient facilities and are planning to incorporate alternative energy sources into future water facilities. For example, the Recycled/Raw Water Project Phase 1 entails the installation of solar photo voltaic panels at RCWD's Santa Rosa Water Reclamation Facility for an expected generation of 1.8 to 2.0 million kWh annually. As such, this project reduces energy use and greenhouse gas emissions. As an enhancement to the Recycled/Raw Water Project, Phase I, this project will benefit agriculture and associated disadvantaged communities. The combined benefits of the Recycled/Raw Water Project will reduce CO2 emissions by over 5 million pounds per year.