

## **Section E**

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### Goals and Objectives

## Section E – Goals and Objectives

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### E.1 Introduction

This section identifies the Tule River Basin IRWM Plan’s Vision, Goals, and Objectives. The intent of this section is to establish the intent of the Tule River Basin Integrated Regional Water Management Plan (IRWMP), and to demonstrate which regional water management issues the IRWMP is designed to address.

The IRWMP goals and objectives provide a basis for decision making and are used to evaluate project benefits of IRWMP Projects and Programs. The goals and objectives are based on input and from the Regional Water Management Group (RWMG), the Deer Creek and Tule River Authority (DCTRA), and other Interested Stakeholders. The Goals and Objectives:

- Focus the IRWM Plan
- Provide a basis for determining the most appropriate resource management strategies for the Region
- Are used to evaluate project benefits
- Guide development and implementation of IRWM project/program

**IRWM Vision:**  
*Sustain Agricultural, Urban and  
Ecological Viability through Effective  
Water Management*

### E.2 Process and Determination of IRWM Plan Goals and Objectives

The goals and objectives for the IRWMP were formulated in the multiple meetings of the Tule River Basin IRWMP Stakeholders Advisory Group meetings. These objectives have been ratified by the Board of Directors of the Tule River Basin IRWM Governing Board, acting as the lead initial role in preparing the Tule River IRWMP, based on further recommendation of its Advisory Committee.

### **E.2.1 Stakeholder Input: Identifying Critical Water Issues**

The Tule River Basin IRWM Advisory Committee met several times to identify key issues that would assist in the development of the IRWMP goals and objectives. The Advisory Committee involved in this process are those representatives from the public agencies, water districts, communities, and the County within the Tule River Basin. The 3 most critical issues identified by the Advisory Committee were:

- Storm water Management
- Declining groundwater levels
- Groundwater quality

### **E.2.2 Consistency with Applicable Resource Documents and Management Plans**

With the stakeholder-identified critical water resource issues in mind, the 2017 IRWM Plan utilizes a number of resource and guidance documents to develop the Goals and Objectives. Additionally, the IRWM Plan considers and/or seeks consistency with the following:

- DWR IRWM Guidelines (July 2016)
- Groundwater Quality Control Plan for The Tule River Basin (September 2016)
- Tulare Basin Groundwater Management Plan (July 2012)
- California Water Action Plan (Updated 2016)
- California Water Code

The 2016 guidelines specifically require that all IRWM Plans consider overarching goals of the Tule Basin Basin Water Quality Coalition Plans, the California Water Code, and those of the state led-documents are briefly described below.

#### DWR IRWM Guidelines (July 2016)

Release of the 2016 IRWM Program Guidelines provided the lead document for the approach and content required for the Region's IRWM Plan. The Guidelines reflect current legislation impacting what should be included in, and funded under, IRWM Plans throughout the state of California. The 2016 IRWM Program Guidelines discuss specific elements that must be included in an IRWM Plan.

**Table E-1. How IRWM Plan meets requirements for objectives set by the 2016 DWR IRWM Guidelines.**

2016 DWR IRWM Guidelines Requirements for Objectives	How the IRWM Plan Addresses the Requirement
<b>IRWM Plan must clearly present Plan Objectives and describe the process used to develop the objectives.</b>	Section E clearly describes the process by which IRWMP Objectives were developed.
<b>Plan objectives must address major water related issues and conflicts of the region.</b>	Section E describes how major water related issues and conflicts in the region were identified
<b>RWMG’s must consider the objectives in the appropriate basin plan or plans and strategies to meet applicable water quality standards, Water Code §10541.(e)(2).</b>	Tables E-2 through E-4 describe how objectives in other relevant regional plans were used to shape IRWMP projects and programs.
<b>Objectives must be measurable by some practical means so achievement of objectives can be monitored.</b>	Table E-5 provides the intended qualitative and quantitative metrics, as appropriate and practical, for each objective.
<b>Objectives may be prioritized for the Region and must contain an explanation of the prioritization or reason why objectives are prioritized.</b>	Section E provides an explanation as to why objective prioritization was not utilized in this IRWMP.
<b>Address adapting to changes in the amount, intensity, timing, quality and variability of runoff and recharge.</b>	Objectives 10, 11, and 12 seek to increase understanding of regional climate change impacts and develop strategies to adapt to these impacts.
<b>Consider the effects of sea level rise (SLR) on water supply conditions and identify suitable adaptation measures.</b>	Objectives 10 and 11 seek to increase understanding of climate change impacts and develop strategies to adapt to these impacts.
<b>Reduce energy consumption, especially the energy embedded in water use, and ultimately reducing GHG emissions.</b>	Objective 12 seeks to limit GHG emissions through implementation of hydroelectric energy generation facilities. Objectives 13, 14, 15 seek to reduce energy consumption by reducing water demand and increasing efficiency of water use.
<b>Consider, where practical, the strategies adopted by California Air Resources Board (CARB) in its AB 32 Scoping Plan, when evaluating different ways to meet IRWM plan objectives.</b>	Objective 12 seeks to limit GHG emissions through implementation of hydroelectric energy generation facilities. Objectives 13, 14, 15 seek to reduce energy consumption by reducing water demand and increasing efficiency of water use.
<b>Consider options for carbon sequestration and using renewable energy where such options are integrally tied to supporting IRWM Plan objectives.</b>	Objectives 1 and 2 seek to protect, restore, and regenerate aquatic, riparian, and native habitats in the region, which would result in increased carbon sequestration. Objective 12 seeks to increase renewable energy options through implementation of hydroelectric energy generation facilities.

Deer Creek and Tule River Authority Groundwater Management Plan (2012)

The DCTRA Groundwater Management Plan was first established by member agencies of the Deer Creek and Tule River Authority (DCTRA) in 1995 to collectively monitor, manage, and implement groundwater activities by the participants of the DCTRA. The latest update to the Tule Basin Groundwater Management Plan occurred in 2012. The objectives of the 2012 Tule Basin Groundwater Management Plan are:

- To promote and realize groundwater resource protection
- To facilitate groundwater resource sustainability
- To develop groundwater resource understanding
- To develop groundwater basin understanding
- To promote and facilitate information dissemination regarding the groundwater resource

***Table E-2. How IRWMP Meets 2012 Tule Basin Groundwater Management Plan Objectives***

2012 Tule Basin Groundwater Management Plan Objectives	How the IRWM Plan Meets the Objectives
<b>To promote and realize groundwater resource protection</b>	Objectives 6, 7, 8 and 9 seek to limit groundwater contamination.
<b>To facilitate groundwater resource sustainability</b>	Objectives 13, 14 and 15 seek to implement strategies to reduce water demand and increase water use efficiency. These strategies are critical to achieving groundwater sustainability.
<b>To develop groundwater resource understanding</b>	Objective 14 seeks to increase knowledge and understanding of all groundwater related conditions.
<b>To develop groundwater basin understanding</b>	
<b>To promote and facilitate information dissemination regarding the groundwater resource</b>	

California Water Code

The California Water Code is the primary legislation pertaining to water management in California. However, other California legislation relevant to IRWMP guideline compliance were also considered in the development of IRWMP goals and objectives. The laws necessary to comply with IRWMP guidelines are summarized below and description of how the IRWMP objectives comply with the California Water Code is presented in Table E-3.

**Table E-3. Summary of California Water Codes**

<p><b>20x2020:</b> In February 2008, Governor Schwarzenegger set a goal of a 20 percent reduction in per capita urban water use by the year 2020 (20x2020). Actions toward the 20x2020 goal were furthered by the passage of Senate Bill SBx7-7 in November 2009, which amended the CWC to contain provisions not only to improve urban water use efficiency, but to improve agricultural water use efficiency as well.</p>
<p><b>California Water Code §10540 (c):</b> In September 2011, the senate passed §10540 (c). §10540 (c) states that, at minimum, all IRWM Plans shall address the CWC requirements listed in Table E-4</p>
<p><b>AB 685:</b> AB 685 Establishes State Policy that every human being has that right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes.</p>
<p><b>California Water Code §10541:</b> California Water Code §10541 was passed in September 2014 and requires that IRWM regions with nitrate, arsenic, perchlorate, or hexavalent chromium contamination to include specific information. Additionally, this legislation requires the evaluation of the adaptability of water management systems in a region to climate change in all IRWM Plans.</p>
<p><b>California Water Code §10562:</b> SB 985 (Pavley, Chapter 555, Statues 2014) – Water Code §10562 – requires the development of a stormwater resource plan and compliance with these provisions to receive grants for stormwater and dry weather runoff capture projects from a bond act approved by voters after January 1, 2014</p>
<p><b>AB 1739, SB 1168, SB 1319:</b> AB 1739, SB 1168, and SB 1319 are collectively referred to as the Sustainable Groundwater Management Act (SGMA). SGMA allows local agencies to customize groundwater sustainability plans to their regional economic and environmental needs. SGMA creates a framework for sustainable, local groundwater management by requiring local agencies to establish a new governance structure, known as Groundwater Sustainability Agencies, prior to developing groundwater sustainability plans for groundwater basins or sub-basins.</p>
<p><b>Water Code §10551:</b> SB 208 (Lara, Chapter 675, Statues 2015) – Water Code §10551 – requires a Resource Water Management Group (RWMG), within 90 days of notice that a grant has been awarded, to provide DWR with a list of projects that benefit a DAC or where the project proponent is a nonprofit organization or a DAC. Within 60 days of receiving the project information, DWR is to provide advanced payment of 50% of the grant award</p>
<p><b>AB 52:</b> AB 52 (Gatto, Chapter 532, Statutes of 2014) – Public Resources Code §21080.3.1 – requires the California Environmental Quality Act (CEQA) lead agency to consider project effects on Tribal cultural resources and to conduct consultation with California Native American Tribes</p>
<p><b>Executive Order B-29-15:</b> Executive Order B-29-15 requires agricultural water suppliers that supply water to more than 25,000 acres to include in their required 2015 Agricultural Water Management Plans (AWMP) a detailed drought Proposition 1 2016 IRWM Program Guidelines Page 7 management plan that describes the actions and measures the supplier will take to manage water demand during drought.</p>

**Table E-4. How RWMP plan addresses applicable California Water Code Requirements.**

California Water Code Requirement	How the IRWM Plan Addresses the Requirement
<b>Protection and improvement of water supply reliability, including identification of feasible agricultural and urban water use efficiency strategies.</b>	Objectives 13, 15, and 15 seek to maintain or improve water supply quantity and reliability for all use sectors.
<b>Identification and consideration of the drinking water quality of communities within the area of the Plan.</b>	Objective 6, 7, 8, and 9 seek to maintain and improve the water quality of water resources for all uses, including drinking water
<b>Protection and improvement of water quality within the area of the Plan consistent with relevant basin plan.</b>	Objectives 6, 7, 8, and 9 seek to protect and improve water quality within the IRWM planning area.
<b>Identification of any significant threats to groundwater resources from over drafting.</b>	Objectives 13, 14, and 15 seek to limit over drafting of groundwater resources by increasing water use efficiency and increasing public awareness of groundwater issues.
<b>Protection, restoration, and improvement of stewardship of aquatic, riparian, and watershed resources within the region.</b>	Objectives 1 and 2 seek to protect, restore, and regenerate aquatic, riparian, and native habitats in the region.
<b>Protection of groundwater resources from contamination.</b>	Objectives 6, 7, 8, and 9 seek to protect and improve water quality within the IRWM planning area, including groundwater. Objective 14 seeks to increase awareness of groundwater resource issues, including contamination.
<b>Identification and consideration of water-related needs of disadvantaged communities in the area within the boundaries of the Plan.</b>	Objectives 12, 13, and 14 seek to maintain or improve water supply quantity and reliability for all use sectors.

### E.2.3 Regional Priorities

Within the Tule River Basin IRWMP process, short-term priorities, which can be implemented within a five-year time frame, have been identified. These priorities fall into three focused areas. The first of is addressing drinking water quality issues throughout the IRWMP area. This includes urban suppliers, rural water suppliers and individual rural water systems. The second group priorities fall into the category of water supply reliability for agricultural, municipal, and industrial suppliers. The third category is related to improved water management, including stormwater management and optimization of surface water systems. These priorities include new control systems, replacement of older and deteriorated distribution facilities, recharge basins, pipeline projects, and pumping facilities.

Additional priorities for the five-year term include completing the updates to the Groundwater Management Plan of the DCTRA, along with annual updates, further defining the role of urban water suppliers utilizing groundwater in the Tule River Basin groundwater management activities and completing the update to this IRWMP as contractually will be required by DWR IRWMP approval.

**Table E-5. How IRWMP objectives address regional priorities.**

Tule River Basin Regional Priority	How IRMP objectives address regional priorities
<b>Address drinking water quality issues.</b>	Objectives 6, 7, 8 and 9 seek to maintain and improve water quality for all uses, including drinking water. Objective 5 aims to better coordinate land use with water quality availability.
<b>Promote water supply reliability.</b>	Objectives 13, 14. And 15 seek to balance water supply and demand by decreasing water demand and increasing water use efficiency. Objective 4 seeks to improve conveyance infrastructure. This would promote basin to basin transfers which would increase the reliability of water supply. Objective 15 specifically seeks to encourage basin to basin transfers.
<b>Improve and update infrastructure.</b>	Objective 4 seeks to improve diversion and conveyance infrastructure.
<b>Improve stakeholder coordination and communication.</b>	Objectives 3, 7, 8, and 14 seek to improve communication between water managers and land use planners, water users, and tribal communities.
<b>Update DCTRA groundwater management plan.</b>	Objective 14 seeks to increase knowledge regarding groundwater management. This includes updating the DCTRA Groundwater Management Plan.

### E.3 Adopting the IRWM Goals and Objectives

The adoption of the IRWM Objectives was done in a manner to ensure adequate consideration of the diverse regional water management issues had by multiple stakeholder groups. The steps taken to adopt the final IRWMP Objectives were as follows:

1. Identify primary water resources issues through stakeholder advisory group meetings
2. Compare stakeholder-identified water issues to the various requirements listed above.
3. Draft IRWMP Goals to address identified water resource issues
4. Develop Objectives intended to achieve Goals
5. Submit to the Governing Board for Ratification
6. Revise draft IRWM Goals and Objectives after consideration of comments received
7. Submit final draft IRWM Goals and Objectives to RWMG for review and approval
8. The Final Goals and Objectives of the 2018 IRWMP were approved on XXX <date>

## E.4 IRWM Goals and Objectives



Figure E-1. IRWM Vision, Goals, and Objectives

#### **E.4.1 Maintain or Improve the Health of Ecosystems within the Region**

##### **1. Conserve, Enhance and Regenerate Riparian Habitats**

The Work Plan documents related to both the Habitat Conservation Plan and the National Communities Conservation Plan and the Natural Communities Conservation Plan have yet to be developed, but are a long-term priority of DCTRA given the need to develop projects to address groundwater management, promote carbon sequestration and mitigate the effects of settlement of litigation related to San Joaquin River Restoration.

##### **2. Conserve and Restore Native Species and Related Habitats**

The established Recharge Basin objectives have three (3) principal components. These components build upon chosen property characteristics of being in the Tule River corridor, on soils with above-average to outstanding percolation characteristics and capable of diverting water from and returning water to the River or one of its distributaries. The components consist of the site functioning as a groundwater recharge site, a flood impact reduction site and a habitat restoration location. The flood impact reduction function is not limited to urban and/or transportation facility flood/flood damage reduction capabilities, but extends to agricultural lands. Protection of permanent crops and maintenance of the soil mantle are the primary objectives in this case.

##### **3. Protect Water Resources that are critical to Native American Tribal Communities**

Water resources have significant cultural, spiritual, and economic significance to Tribal communities. Although the Tule River Reservation is located outside of the IRWMP boundary, a dialogue exists between the DCTRA member districts and the Tule River Tribe to prevent or mitigate the distribution of these important resources. It is an objective of the IRWMP to protect water resources that are critical to Native American Tribal Communities, and to encourage open communication between Tribal communities and other stakeholder groups to find effective water management solutions. The CEQA process supports this objective by requiring a cultural resource analysis prior to project implementation. This process will act as a screening process during project approval.

#### **E.4.2 Protection of Life, Structure, Equipment and Property from Flooding**

While devastating flooding, as experienced in 1955, has a potential to be significantly reduced as the result of construction of both Success Dam and the groundwater recharge basins of DCTRA and individual member agencies within the IRWM boundary, the potential for flooding still exists. Issues related to flooding are damage to infrastructure, equipment and property from flood flows from uncontrolled channels such as Frasier Creek and Deer Creek and land and habitat alteration associated with those flood flows. While outside of the IRWM boundary, projects designed and managed to provide flood control for downstream landowners extending into the historic Tulare Lake bed, are of significance. Planning is again underway to address the modification of Success Dam to address improved downstream flood protection.

#### **4. Evaluate and Modify Water Diversion and Conveyance Infrastructure**

Many of the member agencies of the DCTRA utilize natural channels for water supply conveyance and distribution purposes. Several of the member units, such as the LTRID and the Pixley Irrigation District have undertaken significant distribution system improvements over the last several years. The Porterville Irrigation District has recently completed a system expansion study and is in the process of preparing to undertake expansion related projects. It is an objective of this IRWMP to continue to seek out and implement such evaluation and improvement opportunities.

#### **5. Protect and Improve Water Resources through Land Use Practices**

The nexus between land use planning, land use practices and water management, particularly with respect to water quality, is evident within the Tule River Basin. The issues of surface and groundwater contamination, flooding, groundwater overdraft, habitat alteration and erosion are all issues related directly to land use and land use planning. Pursuit of the objective to protect and improve water resources such as flows of the Tule River, sustaining historic levels of importation of Friant Division, CVP supplies, storm water and flood waters management, actions contrary to maintenance of the quality of ground and surface waters and decisions related to the location of housing stock are all of paramount importance. Improved land use practices, maintenance and enhancement of riparian habitats and farm practices and urban runoff practices which seek to minimize sedimentation associated with erosion, are elevated objectives. Sound land use planning which avoids placement of households and locations where the drinking water supply is known to be marginal with respect to quantity or non-compliant with State and Federal drinking water standards is being highlighted as a practice which needs improvement and more diligent implementation. Likewise, sound land use planning involves proper placement of industrial and commercial land uses that recognizes that improper placement could jeopardize the viability of a currently compliant and viable water supply. In pursuit of this objective, land use planning policies have been developed and included in the recently completed Tulare County Disadvantaged Communities Study, an effort covering the counties of Fresno, Kings, Kern and Tulare. The report effort has been supported by significant citizen input including individuals in both elected and appointed positions involving significant interface with land use policy development and enforcement.

##### **E.4.3 Reduction of Contamination of Surface and Groundwater Resources**

Reducing contaminants throughout the Tule River Basin will depend on improved methods of materials application and use of pesticides and herbicides, improved treatment and reuse of domestic and industrial wastewater from POTW systems and land use and development practices that incorporate Best Management Practices to deal with issues such as disposal of wastes from septic tank treatment systems and urban and roadside runoff. Member agencies of DCTRA are participants in the Southern San Joaquin Valley Water Quality Coalition and the Tule Basin Water Quality Coalition. The principal purpose of said Coalitions is to identify and either reduce below a harmful level or eliminate sources of contamination which jeopardize beneficial uses of both surface water and groundwater resources.

## **6. Meet Applicable Regional Water Quality Control Board Basin Plan Objectives**

The numeric standards and the narrative objectives contained in the Basin Plan for the Tulare Lake Basin are currently accorded significant status in project planning within the Tule River Basin. While all surface water directly diverted from the Tule River is diverted for beneficial purposes for either agricultural purposes or groundwater recharge, water quality parameters meeting beneficial use criteria are sought to be protected and enhanced by the water management planning activities conducted within the Tule River Basin. Improving and maintaining surface water quality requires coordination with procedures ongoing pursuant to the Irrigated Lands Regulatory Program of the Regional Water Quality Control Board and the implementation of Best Management Practices, both as they relate to irrigation related discharges and urban and County and State roadway systems related discharges. In addition, coordination with the County of Tulare and the City of Porterville with respect to solid waste management is necessary in order to satisfy Basin Plan standards and objectives.

## **7. Management of Recreational Activities to Minimize Impacts on Water Resources**

Recent water quality testing has demonstrated frequent, elevated and increasing occurrence of coliform contamination within the surface waters arriving at and coursing through the waterways within the IRWM planning area. While not of historic priority relative to planning activities, increased emphasis by regulatory agencies regarding coliform contamination is elevating the need to begin to address human related impacts, such as those related to recreation, on surface water quality. It is anticipated that future efforts related to this objective will focus on education. To this end, this topic has been added to the current educational outreach topics of the DCTRA.

## **8. Promote City, Community and Regional Storm Water Management Plans**

In cooperation with the Tulare County Flood Control District and the incorporated City of Porterville, the DCTRA has as its objective the promotion of the creation and implementation of adequate storm water management plans. Directing agricultural, roadside and urban generated storm water flows to beneficial uses is an objective of this IRWMP. Planning related to evaluation of the impacts of pollutants carried with the storm waters is of ever increasing concern, particularly with respect to the potential beneficial use of the diversion of these waters for agricultural irrigation and also with regard to the impacts of the pollution on groundwater quality. It is an objective of this IRWMP to seek out reliable, cost-effective and pollution-reducing actions. The member agencies of DCTRA have assisted in the preparation of several stormwater management plans. In particular, the LTRID has contracted to receive waters from Strathmore and Frazier Creeks and properly manage the disposal of said waters utilizing both existing system elements and new additions.

## **9. Evaluate and promote strategies to reduce arsenic, nitrate, and perchlorate contamination to levels below maximum contaminant level**

Arsenic, nitrate, and perchlorate contamination can have a wide variety of negative impacts on ecosystems and human health. There are areas within the IRWMP region that have unsafe drinking water as a result of these chemicals. It is the objective of the IRWMP to reduce the presence of these harmful contaminants in water resources to safe levels. Arsenic, nitrate, and perchlorate contamination is discussed further in Section C- Region Description.

Arsenic contamination is a serious threat to public health. The Pixley Public Utility District reported arsenic levels that exceed the maximum contaminant levels, however arsenic pollution in this area is due to natural arsenic deposits, which become soluble because of the area's soil chemistry. Arsenic levels in the district have declined as well treatment programs were established. Arsenic levels will continue to be reduced through monitoring and well treatment programs.

Nitrate can pose risk to ecological and human health. Nitrate contamination in the district is most likely due to agricultural runoff. Nitrate levels have remained under the maximum contaminant threshold, however nitrate levels will continue to be limited through public education and mandatory applied nitrate reporting programs.

Perchlorate was detected at levels exceeding the maximum contaminate threshold within the IRWMP region prior to 2012, however perchlorate levels have remained under the maximum contaminant threshold from 2012 to 2017. Perchlorate contamination is caused by perchlorate salts used industrial and military applications and can lead to a variety of human health problems. Perchlorate levels will continue to be reduced through existing public education programs and state water quality legislation.

#### **E.4.4 Expand Regional Response to Climate Change through Mitigation and Adaption Strategies**

Climate change is predicted to have numerous impacts on water quality and availability both regionally and state-wide. Regional impacts include irregular water supply, reduced groundwater recharge, and increased runoff, erosion and flooding. State impacts include these, as well as sea level rise and saltwater intrusion. The magnitude of impact on the region as a result of climate change impacts is not known at this time. Although this IRWM plan attempts to address the most apparent climate change impacts, it is likely that mitigation and adaption strategies will need to be altered as new information becomes available. It is the objective of the IRWMP to facilitate adaptive management so that the region is prepared to handle both the foreseeable and unforeseeable impacts of climate change. (Climate Change impacts, along with potential mitigation and adaption strategies, are discussed in greater detail in Section O – Climate Change.)

#### **10. Increase Monitoring and Promote Research Programs to Better Understand the Effects of Climate Change on Ecosystems in the Region**

Although there has been significant research regarding the impacts of climate change globally and in specific areas, the impacts of climate change on ecosystems within the IRWM planning area is still unknown. Water managers play a critical role in limiting the severity of these impacts by developing projects and programs to increase ecosystem resiliency in response to climate change. It is the continuing objective of the DCTRA to increase knowledge regarding the impacts of climate change to ecosystems in the region in order to develop effective projects and programs to increase ecosystem resiliency.

### **11. Plan for Potential Regional Impacts of Climate Change on Water Quantity and Quality**

Climate is expected to have increasingly severe impacts on the quality and availability of water resources. Continuous evaluation and response to these impacts is essential to maintain the region's urban and agricultural viability. It is the objective of the DCTRA to continuously evaluate changes in water quality and availability as a result of climate change and to develop projects and programs to respond to these impacts.

### **12. Identify and Promote Strategies for Hydroelectric Generation Facilities**

The DCTRA aims to encourage renewable energy by promoting hydroelectric generation facilities. Hydroelectric generation facilities provide clean renewable energy which is able to offset GHG emissions that would have been produced through other means of power generation. Implementation of Hydroelectric Generation Facilities would reduce regional GHG emissions associated with energy production and is consistent with AB 32 Scoping Plan strategies. The Lower Tule River Irrigation District a member agency of DCTRA, has developed a 1.4 KW hydroelectric generating plant at Success Reservoir. Developed in 1989, the plant is identified as SPP1. The hydroelectric facility runs on the irrigation release schedules, generating electrical power based on the flow and head characteristics occurring on any given day. LTRID, as both an IRWM objective and as a partner in DCTRA, will continue to explore opportunities to enhance the production of hydroelectric power while protecting the beneficial use of the water employed in generating such power. In addition, to the extent possible, DCTRA members look to optimize power production through development of an enlarged Success Reservoir. It will be a continuing objective of DCTRA, through the implementation of the objectives contained in this IRWMP, to continue to seek those opportunities.

#### **E.4.5 Work toward Achievement of Sustainable Balanced Surface and Groundwater Supplies**

The issues of watershed conditions, water storage, water diversion, water delivery infrastructure and groundwater maintenance need to be addressed. As water demands are continuously evaluated, the need to augment naturally occurring groundwater recharge is evident and therefore additional water recharge capacity will be needed to meet future water demands. Existing diversion methodologies and delivery infrastructure will need to be as efficient as possible and balanced with conservation and recycling opportunities. Groundwater, the principal source of water supply for the entire Tule River Basin, is increasingly being pumped to meet agricultural, municipal and industrial demands. Included in this extraction process is that supply necessary to meet rural needs, both community and individual. Therefore, groundwater resources must be managed to ensure sustainability which is the expression of balance between extraction and recharge. As a significant step in the pursuit of this objective, the DCTRA has developed and implemented a groundwater management plan which is SB1938 compliant.

### **13. Optimize Efficient Use, Conservation and Recycling of Water Resources**

Supporting efficient water use both increases water availability and reduces GHG emissions by reducing energy consumption associated with groundwater extraction. Based on its founding purposes, DCTRA has sought to implement policies, procedures, and projects that optimize efficient use of available water resources. Conservation measures include education and regular groundwater recharge procedures. With respect to recycling, the DCTRA will continue to pursue projects and programs which encourage recycling of both treated effluent and urban storm water

related flow sources. Techniques such as stormwater capture, water recycling, and reuse both increase regional water supply and are strategies to reduce GHG emissions consistent with the AB 32 Scoping Plan. For example, agencies within the IRWM boundary fully recycle treated wastewater effluent, thus reducing extraction of groundwater in storage to meet crop demand requirements.

**14. Increase Knowledge Regarding Groundwater Related Conditions and Establish Groundwater Management Practices**

The DCTRA has an adopted Groundwater Management Plan (GWMP). Both the KDWCD and the Tule River Basin have developed numeric groundwater models designed to offer a tool for management of water resources within each basin, to evaluate boundary conditions between the two (2) watersheds and to allow for specific impact analysis of proposed developments within the IRWMP boundary. It is an objective of DCTRA to work with its IRWM partners to further enhance understanding of groundwater and to further develop the tools necessary to improve that knowledge base. Ongoing activities with the City of Porterville and discussions with serving utilities for several unincorporated communities are examples of opportunities to further enhance the groundwater modeling within the area, often specific to the land use and water planning efforts of IRWM partners. It is an objective of DCTRA to maintain the Tule River Basin numeric groundwater model, its related database and to share same with water management partners within the Tule River Basin for the benefit of the groundwater resource.

**15. Reduce Impacts and Optimize Benefits from Assisting Other Drought-Related Areas with Basin-to Basin Transfers of water**

DCTRA member agencies which are signatory to the Tule River Association organization Agreement implement an unwritten policy related to impact reduction resulting from out-of-basin water transfers. While it is the policy of the Board of Directors of TRA to assist other areas in need during times of extended drought, the member units examine transfers from the perspective of mitigation of impacts related to water transfers to out-of-basin entities. Adherence to this procedure and ensuring that adequate facilities exist to accept return transfers in above-normal and wet conditions is and remains an objective of this IRWMP. In the prior year of extreme drought, dry-year transfers of water were facilitated by DCTRA member agencies. This program benefited several Friant Division, CVP contract entities with a dry-year supplemental supply and will allow for the return of a multiple of the exchanged supply in future years, providing a supplemental benefit to the groundwater reservoir.

**E.4.6 Goals and Objectives Metrics**

**Table E-6. Quantitative and qualitative metrics to assess IRWMP objectives.**

Objectives	Qualitative Measurement	Quantitative Measurements
1. Conserve, Enhance and Regenerate Riparian Habitats		Increasing number of acres preserved for ecosystem restoration and/or preservation. Increasing number of acres of healthy or improved natural recharge areas associated with riparian corridors.
2. Conserve and Restore Native Species and Related Habitats		Increasing number of acres preserved or restored for native species and their related habitats
3. Protect Water Resources that are critical to Native American Tribal Communities	Decreasing number of comments or complaints from tribal communities regarding loss, or potential loss, of quality or quantity of their water supplies.	
4. Evaluate and Modify Water Diversion and Conveyance Infrastructure	Increasing improvement in existing water diversion and conveyance infrastructure	Increasing number of studies to evaluate functionality and sustainability of existing water diversion and conveyance infrastructure.  Increasing number of miles of water diversion and conveyance infrastructure
5. Protect and Improve Water Resources through Land Use Practices	Increasing level of management over land use practices to prevent impacts to water resources.	
6. Meet Applicable Regional Water Quality Control Board Basin Plan Objectives	Increase in the overall level of management and governance through adopted Basin Management Plans.	Increasing number of projects consistent with adopted Groundwater Management Plan Basin Management Objectives (BMOs) for the improvement of the health of a groundwater basin.

Objectives	Qualitative Measurement	Quantitative Measurements
7. Management of Recreational Activities to Minimize Impacts on Water Resources	Increasing number of programs with the intent to minimize recreation related water resource impacts	
8. Promote City, Community and Regional Storm Water Management Plans		Decrease the number of communities without a Storm Water Management Plan (Objective = 0)
9. Evaluate and promote strategies to reduce arsenic, nitrate, and perchlorate contamination to levels below maximum contaminant level		Decreasing arsenic, nitrate, and perchlorate levels.
10. Increase Monitoring and Promote Research Programs to Better Understand the Effects of Climate Change on Ecosystems in the Region	Increasing number of projects/programs to study/monitor the effects of climate change on ecosystems in the region	
11. Plan for Potential Regional Impacts of Climate Change on Water Quantity and Quality	Increasing number of projects/programs intended to increase regional resiliency with regard to climate change impacts on water quantity and water quality	
12. Identify and Promote Strategies for Hydroelectric Generation Facilities		Increase the number of Hydroelectric generation facilities within the Region
13. Optimize Efficient Use, Conservation and Recycling of Water Resources	Increase number of projects/programs related to water conservation and recycling	
14. Increase Knowledge Regarding Groundwater Related Conditions and Establish Groundwater Management Practices	Existence of public education programs for groundwater management efforts to promote them	
15. Reduce Impacts and Optimize Benefits from Assisting Other Drought-Related Areas with Basin-to-Basin Transfers of water	Existence of adequate facilities to give and accept basin-to-basin transfers of water.	

## **E.5 Prioritization of IRWM Goals and Objectives**

The objectives have not been established in any priority sequence, as flexibility has been demonstrated to exist between these items and issues based on either acknowledged current need for specific implementation of an element or a unique opportunity existing related to a particular objective such as a partnership opportunity or funding opportunity.