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| **Subject:** | **Objectives Technical Memorandum** |
| **Prepared For:** | Merced Integrated Regional Water Management Plan – Regional Advisory Committee |
| **Prepared by:** | RMC Water and Environment |
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The Merced Region is undertaking development of an Integrated Regional Water Management Plan (MIRWMP). This effort was initiated by the Merced Area Groundwater Pool Interests (MAGPI), which currently serves as an interim Regional Water Management Group (RWMG) responsible for developing the IRWM Plan. The Region has received a grant from the California Department of Water Resources (DWR) to prepare a plan that meets statewide IRWM Plan standards.

The purpose of this technical memorandum (TM) is to identify the objectives of the IRWM Plan and establish planning targets that can be used to gauge success in meeting the objectives for the Merced IRWM region. This TM will serve as the basis for the Objectives section of the MIRWMP.

# Objectives

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| Integrated Regional Water Management (IRWM) Plans must:* Present plan objectives, which must address major water-related issues and conflicts of the region and must be measurable by some practical means so achievement of objectives can be monitored
* Describe the process used to develop the objectives
* Contain an explanation of the prioritization or reason why the objectives are not prioritized
* Consider climate change
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Through a series of facilitated public workshops and meetings, the Regional Advisory Committee (RAC) to the Merced Region Integrated Regional Water Management (IRWM) Plan developed 11 specific IRWM Plan objectives. Detailed descriptions of each of the objectives are presented in the following sections along with the rationale for development and inclusion of each objective.

**IRWM Plan Objectives**

**LIST TO BE UPDATED FOLLOWING CONSENSUS ON OBJECTIVES**

1. Manage flood flows for water supply, recharge and natural resource management
2. Meet demands for all uses, including agriculture, urban, and environmental resource needs.
3. Improve coordination of land use and water resources planning.
4. Maximize water use efficiency.
5. Protect and improve water quality for all beneficial uses, consistent with the Basin Plan.
6. Correct groundwater overdraft conditions.
7. Protect, restore, and improve natural resources.
8. Address water-related needs of disadvantaged communities (DACs).
9. Protect and enhance water-based recreation opportunities.
10. Establish and maintain effective communication among water resource stakeholders in the Region.
11. Effectively address climate change adaptation and/or mitigation in water resource management.
12. Enhance public understanding of water management issues and needs.

## Regional Water Management Issues

Water management issues in the Merced IRWM Region were identified by reviewing existing water management plans in the region and brainstorming with the RAC, which represents a broad cross-section of water management interests throughout the Region. In addition, a series of technical workshops were held focused on water conservation, groundwater recharge, salt and nutrient management, and climate change. These meetings, which were publically noticed and announced through media vehicles including local radio announcements, were open to any interested stakeholders. A key focus of these meetings was to identify specific water management issues in the region and develop objectives to address those issues. Based on these meetings, the following regional water management issues were identified.

* **Disconnect between land use planning and water management planning:** The Merced Subbasin, which serves the majority of demands in the Region, is in overdraft. However, significant population growth is projected. In addition, throughout the Region, range lands and lands with relatively low water demands uses are being converted to more water-intensive land uses such as irrigated agriculture. Improved coordination between water and land use management is needed to ensure that future development is sustainable.
* **Failure of water rights to protect supply.** The current water rights system does not recognize the need to manage the groundwater basin sustainably for all uses. There is minimal control over private use of groundwater supplies despite overdraft conditions.
* **Inadequate flood control.** Some creeks such as Deadman Creek have little or no flood control infrastructure in place. Improved flood management should be coordinated with surface storage and / or recharge facilities to maximize use of local supplies. For example, Merced Irrigation District (MID) is currently evaluating connecting creeks on the east side and conveying the flows west to better manage flood flows while providing enhanced recharge through corridors in the southeastern portion of the Region with sandy soils. Flood control combined with surface storage is also being evaluated for the dry creek watershed.
* **Lack of holistic water management.** Current water resources are not being managed in a sustainable way. There are opportunities to improve current water use patterns to improve basin health. For example, converting some existing groundwater irrigators to surface water could recharge the basin as opposed to contributing to overdraft conditions. A long-term view must be taken in planning efforts so that water management policies are not heavily impacted by political will and other short-term changes.
* **Need for better groundwater information and management.** There is a need for better information related to current groundwater conditions and management actions necessary to maintain the health of the basin for all water users. Water users need to understand how their water use impacts the basin as a whole.
* **Impacts to sensitive ecosystems.** Lower groundwater levels impact environmental resources. For example, protecting vernal pools in eastern Merced County requires adequate water supply
* **Water quality impacts.** Water quality in the region is being impacted by saline intrusion from groundwater near the San Joaquin River, the use of pesticides and herbicides in the region, mining impacts, fracking occurring in the grasslands area, urban runoff, and legacy nitrate issues. Emerging contaminants such as pharmaceuticals and personal care products must also be considered. Deep well injection of wastewater being practiced in the Hilmar area must be managed to prevent potential water quality impacts.
* **Need for groundwater recharge.** There is currently a limited number of managed groundwater recharge operations in the Region. Opportunities to recharge flood water should also be explored.
* **Inadequate wastewater management.** Wastewater collection and treatment capacity is limited in many parts of the region. Adequate wastewater collection and treatment is necessary to protect water quality.
* **Inefficient water use practices.** Improved water use efficiency could reduce the mismatch between water demands and available supplies. Onsite water reuse, effective use of stormwater and flood flows, increased water conservation, and improved water use efficiency should be explored.
* **Funding challenges.** Water management projects cannot be implemented without funding, and it is difficult to raise water rates for needed projects.
* **Lack of public understanding related to water management.** There is a need for education of the general public related to local hydrology, water issues, the need to lower water use, and opportunities to conserve water.

## Process to Develop Objectives

A series of objectives were developed to address the water management issues identified above. For each objective, performance measures were identified. Performance measures are benchmarks that can be used to measure the region’s progress toward achieving each objective. The Merced Region IRWM objectives were developed through a series of facilitated workshops and meetings that were advertised and open to the public, including:

* Two RAC meetings
* Four technical workshops, focused on water conservation, groundwater recharge, salt and nutrient management, and climate change
* One general public meeting

In addition, local water and land use management plans were reviewed to identify local planning objectives that may be appropriate to include in the IRWM Plan. Objectives identified in local planning documents are summarized in Appendix A to this document.

## Water Management Objectives

Using the process outlined above, the following objectives and performance measures were developed for the Merced IRWM Region.

Table : Merced Region IRWM Plan Objectives

**LIST TO BE UPDATED FOLLOWING CONSENSUS ON OBJECTIVES**

| Merced Region IRWM Objective | Performance Measures |
| --- | --- |
| A. Manage flood flows for water supply, recharge and natural resource management | 1. Occurrence of flooding at the Black Rascal Creek diversion and Deadman Creek2. Volume of flood water stored and / or recharged |
| B. Meet demands for all uses, including agriculture, urban, and environmental resource needs. | 1. Occurrence of voluntary and / or mandatory water use restrictions 2. Stability of groundwater levels |
| C. Improve coordination of land use and water resources planning. | 1. Number of cooperative planning meetings held between land use and water resource planning entities2. Number of General Plans with water resource elements |
| D. Maximize water use efficiency. | 1. Estimated annual savings from demand management programs2. Volume of water per year put to beneficial reuse3. Percent of water users with meters and commodity pricing |
| E. Protect and improve water quality for all beneficial uses, consistent with the Basin Plan. | 1. New 303(d) listings and / or delistings2. Surface water and groundwater quality  |
| F. Correct groundwater overdraft conditions. | 1. Groundwater surface elevation  |
| G. Protect, restore, and improve natural resources. | 1. Acres of habitat protection / restoration / enhancement completed per year2. Development trends in the largest and most ecologically sensitive areas of Merced County (including the Merced and San Joaquin River corridors) |
| H. Address water-related needs of disadvantaged communities (DACs). | 1. Projects implemented that focus on meeting critical water-related needs of DACs. |
| I. Protect and enhance water-based recreation opportunities. | 1. Number of new projects providing new or enhanced water-based recreation opportunities  |
| J. Establish and maintain effective communication among water resource stakeholders in the Region. | 1. Number of stakeholders and members of the public attending IRWM-related meetings2. Number of collaborative projects jointly implemented by multiple entities |
| K. Effectively address climate change adaptation and/or mitigation in water resource management. | 1. Number of projects implemented that consider climate change |
| L. Enhance public understanding of water management issues and needs. | 1. Number of educational programs / number of people participating in water-focused educational events in the Region  |

## Prioritizing Objectives

The RAC discussed the benefits and drawbacks of prioritizing objectives.

**UPDATE FOLLOWING RAC DISCUSSION**