

RECLAMATION

Managing Water in the West

Mid-Pacific Region

2014 Standard Criteria



U.S. Department of the Interior
Bureau of Reclamation
Mid-Pacific Region

The Standard Criteria (Criteria) were developed by the Bureau of Reclamation (Reclamation) in response to the Central Valley Project Improvement Act of 1992 (CVPIA) (Public Law 102-575) and in accordance with the Reclamation Reform Act of 1982 (RRA) (Public Law 97-293).

Who Must Use These Criteria

The Criteria apply to any Water Management Plan (Plan) submitted to Reclamation as required by applicable Central Valley Project (CVP) water service contracts, repayment contracts, Settlement Contracts, or any contract that specifically invokes the Criteria.

Exceptions

The following are exempted from preparing a Plan using the Criteria:

- All contractors that receive only irrigation water from any Federal Reclamation project, and deliver water to less than a current five-year average of 2,000 acres of land.

- All contractors that receive less than a five-year average of 2,000 acre-feet per year (AFY) of only municipal and industrial (urban) water from any Federal Reclamation project.
- All contractors that receive any combination of irrigation and/or urban water amounting to less than a current five-year average of 2,000 acre-feet from any Federal Reclamation project.

For new Plans and if data called for in the Criteria are not available, the contractor shall include in their Plan how they (the contractor) will gather the data and make it available for the next Plan revision.

Where to Submit Plans

Contractors shall submit Plans in electronic format to the local Area Office for review. For Area Office representatives and contact information, please visit <http://www.usbr.gov/mp/watershare/contacts.html>. After Plans are reviewed by the Area and Regional Offices and deemed adequate, the Board of Directors is required to pass a resolution adopting the Plan.

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INTRODUCTION

Background and General Information

The purpose of the Criteria is to promote, using the best available cost-effective technology and Best Management Practices (BMPs), the highest level of delivery water management achievable by contractors, along with the implementation of water-use efficiency measures reasonably achievable by their customers.

Section 210 of the RRA requires contractors to prepare and submit Plans every five years with definite goals, appropriate water conservation measures, and timetables.

Section 3405 (e) of the CVPIA requires that the Secretary of the Interior establish Criteria to evaluate CVP Plans by April 30, 1993. The Criteria shall be reviewed at least every three years and revised, if necessary.

The CVPIA specifies that the Criteria identify BMPs including, but not limited to, efficient water management practices being developed pursuant to California State law or reasonable alternatives.

Reclamation developed and distributed a Water Management Planner detailing the type of information required by the Criteria. The Water Management Planner will be updated to conform to the revised Criteria.

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GLOSSARY

For the purposes of the Criteria only, the following definitions will be used:

Agricultural Water Management Council (AWMC) – A consortium of agricultural water agencies and public interest groups working together to implement water conservation practices in California. This effort was formalized in a Memorandum of Understanding (MOU) signed in 1996. Signatory water suppliers agree to develop and implement comprehensive conservation efficient water management practices using sound economic criteria. AWMC is going through a transitional phase. Reclamation will continue with the management of the agricultural annual BMP reporting database and will notify contractors of any changes in the future.

Best Management Practice (BMP) – A policy, program, practice, rule, regulation and/or ordinance, or the use of devices, equipment, or facilities that meet either of the following:

- An established and generally accepted practice among contractors that results in more efficient use, conservation/management of water;
- A practice for which sufficient data are available from existing water management projects to indicate that significant efficiency improvements or management-related benefits can be achieved; that the practice is technically and economically reasonable and not socially or environmentally unacceptable; and that the practice is not otherwise unreasonable for most contractors to carry out.

California Urban Water Conservation Council (CUWCC) – A consortium of urban water agencies and public interest groups working together to develop water best management practices in California. This effort was formalized in a MOU. Signatory water suppliers agree to develop and implement comprehensive conservation BMPs using sound economic criteria.

Class 1 Water – The Friant Division of the Central Valley Project employs a “Class 1/Class 2” water contracting system. Class 1 Water is the supply of water stored in or flowing through Millerton Lake which will be available for delivery from Millerton Lake and the Friant-Kern and Madera Canals as a dependable water supply during the year.

Class 2 Water – The supply of water which can be made available for delivery from Millerton Lake and the Friant-Kern and Madera Canals in addition to the supply of Class 1 Water. Because of its uncertainty as to availability and time of occurrence, such water will be undependable in character and will be furnished only if, as, and when it can be made available as determined by the Contracting Officer.

Conjunctive Use – The planned and coordinated use of surface and groundwater supplies to increase water supply reliability, as may be included in a groundwater management plan or banking program.

Contractor – Entities that contract with Reclamation for urban and/or agricultural water.

Customer type (urban) – Urban customer types may include: single-family, multi-family, commercial, industrial, institutional, landscape irrigation, wholesale, or recycled.

District – The physical boundaries of the contractor’s service area.

Five-Year Plan Revision – The revision of a Plan using the most recently adopted Criteria. Under the RRA, contractors are required to submit an updated Plan to Reclamation every five years, using the previous water year’s data. If it is not a normal water year and the District would like to use a different year’s data, please see Section II – Inventory of Water Resources.

Frost Free Days – According to National Oceanic and Atmospheric Administration (NOAA), frost free days are days with temperatures greater than 28 degrees Fahrenheit.

Groundwater Banking Program – The intentional storage of water supplies in subsurface aquifers with plan for retrieval and beneficial use. Groundwater banking usually involves keeping an account of water input and the subsequent use by predetermined or specified parties. Groundwater recharge alone is not a groundwater management plan or banking program. An acceptable groundwater management plan or groundwater banking program must have a reasonable rationale of how the contractor or customers will retrieve such water for beneficial use.

Groundwater Management Plan – A set of practices and management actions that improve groundwater conditions (with the intent of protecting and/or increasing benefits, including the sustainability of groundwater aquifers).

Groundwater Recharge – Infiltration of water into the saturation zone can occur by one of the following processes:

- Natural recharge - recharge of a groundwater basin due to precipitation and stream flow;
- Planned recharge - intentional recharge of a groundwater basin via percolation ponds or injection wells; or
- Incidental recharge - recharge resulting from canal seepage or deep percolation from excess irrigation

Implementation – Achieving and maintaining the staffing, funding, and the priority levels necessary to achieve the level of activity called for in the descriptions of the various BMPs. Also, to satisfy the commitment by the contractor to

use good-faith efforts to optimize benefits from implementing BMPs.

Inflow – Water that enters the district boundaries, which also enters the district distribution system.

MOU – Memorandum of Understanding.

Outflow – Water from the distribution or drainage system that leaves the district boundaries.

Subcontractor – A contractor who purchases water from a Wholesaler and sells all water directly to the end user. A subcontractor may also be referred to as a retailer or retail agency in the urban sector.

Riparian Evapotranspiration (ET) – ET from non-crop vegetation that usually grows along the banks of water conveyance and storage facilities.

Water Conservation/Water Management – Use of less water to accomplish the same purpose(s) or the use of the same amount of water to accomplish additional benefits. An example of the latter is implementation of a BMP that results in increased total crop production using the same amount of water. Water management that results in the increased benefits of water can be achieved through the implementation of BMPs identified in these Criteria. For the purpose of these Criteria, water conservation is considered the same as water management.

Water Inventory – An approach used in the Plan that identifies and quantifies all inflows, outflows, and other uses of water by the contractor in order to identify areas of potential improved water management.

Wholesaler – A contractor who sells water to the subcontractor who then resell the water, usually to multiple end users.

PLAN EVALUATION, IMPLEMENTATION, AND COMPLIANCE

Water management and water management planning are on-going processes that begin with the preparation of a comprehensive Plan. The purpose of preparing a Plan is for the contractor to implement the programs developed during the planning process. Implementation of programs identified in the Plan is critical to the success of water management within a district. The Criteria focuses not only on what constitutes an adequate Plan, but also on the implementation of the programs described in that Plan.

The Plan should be prepared using the Plan Format identified in the guidebook. Plans shall include description of the district, inventory of water resources, and BMPs.

Flexibility and Coordination

The Criteria recognizes the differences between contractors and are flexible enough to allow each contractor to develop and implement the types of programs that will best accomplish improved water management within their boundaries. In some cases, the contractors may choose to pool their resources and implement joint programs. The Criteria allows and encourages joint efforts toward program implementation.

Wholesalers are responsible for their subcontractor's water conservation compliance. Wholesalers may include subcontractors in a single Plan containing data on each subcontractor or require each retailer to prepare their own Plans. If retailers prepare their own Plan, the wholesaler should be involved to the extent necessary to ensure it is found to meet the Criteria. These wholesalers and subcontractors have been notified to adjust their Plan due date to align the submittal of the subcontractors' Plans to the year prior of when the wholesaler's Plan is due. For those wholesalers that include their subcontractors' information such as supplies, demographics, and water conservation Plan and activities; no adjustment is needed.

Review Process

Contractors are required to submit draft Plans to the Area Office for review. Once forwarded to the Regional Office, contractors will receive notification of Reclamation's acceptance or request for modification. Following notification by Reclamation that the Plan conditionally meets the requirements of the Criteria, contractors submit an electronic copy of the complete Plan. A resolution by the contractor's Board of Directors formally adopting the Plan must also be submitted. A "Notice of Availability" regarding your Plan will be published in the *Federal Register*.

Congress established the *Federal Register* publication system as a method of informing the public of the regulations affecting them. The official agency actions published in the Federal Register are available to the public and subject to the Freedom of Information Act. The Federal Register and archives can be accessed at <http://www.gpo.gov/fdsys/browse/collection.action?collectionCode=FR>. Once published in the Federal Register, the public is given 30 days in which to view and comment on the Plan. If no significant comments are received within 30 days, the review process is officially completed and the Plan will be posted on the Reclamation WaterShare web site: <http://www.usbr.gov/mp/watershare/>. If public comments are received, additional changes to the Plan may be required. For planning purposes, it is anticipated that a Federal Register will be processed around the Spring and Fall of each year.

Annual BMP Updates

Pursuant to water service, repayment, and settlement contract terms, most contractors must report on Plan implementation annually. Consistent with the provision of the water service contract, the Contractor shall include a summary of all its surface water deliveries in the annual BMP reporting.

Agricultural contractors complete annual updates by filling in the information for BMPs on the Agricultural Water Management Council (AWMC) web site at <http://www.agwatercouncil.org>.

Urban contractors complete annual updates by filling in the information for Urban BMPs on the CUWCC web site at <http://www.cuwcc.org>.

For clarification, Urban and Agricultural Annual BMP Updates are due April 30th of each year unless specified in writing by Reclamation. Annual BMP Updates are also due the year the Plan is due. If a Plan takes longer than a year to complete, this would create a gap in the BMP information.

Five-Year Plan Revision Procedure

Pursuant to water service and settlement contract terms, most contractors are required to submit an updated Plan every five years. Contractors must use the most recently adopted Criteria for an updated Plan. Contractor's Plan are due every five years, independent of when the last Plan was completed or approved. For example, if a Plan was due in 2015 and it took four years to get approved, in 2019, the next Plan will be due the following year in 2020.

Deadline date for a final Plan is Dec. 31st of the year the Plan is due. This is a final Plan that has gone through the Federal Register, not the initial submittal of a Plan. It is recommended that a draft Plan be submitted in January or February of the year the your plan is due, if not earlier, to allow time for review and processing through the Federal Register.

The contractor must continue to file an annual update every year to report implementation actions taken.

Consequences of Non-Compliance

Consistent with provisions of the water service contract, continued project water delivery is dependent upon the contractor implementing an approved water conservation program. Water deliveries will occur providing the contractor cooperates with Reclamation in determining that its water conservation plan meets Federal conservation and efficiency criteria. It is important that an adequate Plan be deemed acceptable through the Federal Register process by Reclamation before Reclamation approves certain discretionary contract actions such as, benefits of financial and technical assistance and the following examples:

- Reclamation grant program requests
- Rescheduling requests
- Water banking requests
- Water transfer or exchange requests
- Inclusion and exclusion requests

Multiple noncompliance letters could impact Reclamation's contract renewals in future years.

Verification

All information is subject to verification and Reclamation may review plan implementation in coordination with the contractor.

PLAN CONTENTS

Section I. Description of the District

Intent

To describe general physical information about the district so that a basis can be formed to evaluate improvements by and within the district, as well as provide the reader with information about the district's physical aspects that may affect the potential for improved water management.

A. History

Give a historical overview of the district. Provide a timeline that includes the formation of the district, date the district was formed, population served, original size, water supplies, contract information with Reclamation and others, and changes in land use. For agricultural districts describe the changes in irrigated acreages, cropping patterns, and evolving irrigation methods.

B. Location and Facilities

Describe the district's incoming flow measurement method and locations, water conveyance and delivery system (unlined canals, lined canals, pipelines, etc.), and storage facilities (reservoirs, regulating reservoirs, etc.). Agricultural contractors should describe district outflow points, spill recovery systems, and whether the delivery system is on-demand (e.g. no lead time or scheduling necessary); scheduled (e.g. water order 24 hours in advance); rotation (e.g. farmer receives water every ten days); or other. Describe any restrictions on the contractor's water source(s) and proposed changes that will be implemented during the next five years.

C. Topography and Soils

Describe the topography and terrain of the district (e.g. hilly, flat, sloping to a water course, etc.). Discuss the effect of topography on water operations and management within the district. Describe major soil classifications and corresponding acreages within the district that affect the use of water (e.g. salinity or high-water table, high or low infiltration rates, etc.).

D. Climate

Describe the general climate of the district. Include average precipitation, maximum and minimum temperatures, and frost-free days. If there are areas within the district known to have significantly different microclimates, describe how these affect water management decisions and operations. Also include climate data source(s).

E. Natural and Cultural Resources

Describe any known natural resources (wetlands, rivers, streams, lakes, etc.) within the district. Indicate if any of these resources were managed (past or present) by the contractor. Describe any known recreational and/or cultural resources (specifically structures on the National Register of Historic Places) within the district.

F. Operating Rules and Regulations

Attach a copy of the contractor's operating rules and regulations which describe information on water allocation policies, lead time necessary for water orders and water shut-off, policies regarding return flows and outflow leaving the district, and policies related to water transfers into or out of the district (by farmer and contractor).

G. Water Measurement, Pricing, and Billing

List the total number of connections/turn-outs, the number currently measured, and the percentage of measured water deliveries. List the types and quantity of measurement devices (meters, calibrated gates, weirs, etc.), level of accuracy (along with documentation verifying the accuracy of the devices), frequency of calibration, and maintenance and reading schedule.

Describe the basis for water charges for agricultural and urban uses. If details are complex, provide an overview and reference the page of the contractor's written operating rules and regulations that provides additional detail. Be sure the following information can be easily found: basis of charges for agricultural water (by quantity, acre, crop, land assessment, other charges, etc.)

and/or for urban (by customer class, quantity, flat rate, etc.).

For water use billed by quantity, describe the rate structure (e.g. declining, uniform or increasing block rate, etc.). Include the billing frequency (e.g. monthly, bimonthly, annually, etc.), a sample of each type of bill, and a description of the record management system.

H. Water Shortage Allocation Policies

Attach a copy of the contractor's agricultural and/or urban water shortage plan.

Describe how reduced water supplies, including hardship water, are allocated. Describe the contractor's policies that address wasteful use of water and describe enforcement methods.

I. Evaluate Policies of Regulatory Agencies Affecting the Contractor and Identify Policies that Inhibit Good Water Management

Evaluate policies of agencies that provide the contractor with water. Discuss possible modifications to policies and solutions for improved water management.

Section II. Inventory of Water Resources

Intent

This section shall include a description of contractor's surface water supply, groundwater supply, other water supplies, source water quality monitoring programs, water uses within the district, outflow from the district, urban wastewater disposal, and water budget. Provide this information for either the last complete calendar year or the last complete water year prior to preparation of each five-year Plan update. Indicate which data set(s) are used for preparing the Plan.

In addition to the data set(s), the contractor may choose to submit data from a different year, or a combination of different years, that better represent average water conditions. This may be necessary if the conditions in the district in the year preceding the five-year Plan update were a deviation from the norm (i.e., the district received either below or above normal precipitation). These data are intended for planning purposes.

For new Plan elements, if data are not available during the preparation of this Plan, the contractor shall describe how the information will be obtained for the next Plan update.

A. Surface Water Supply

Describe the acre-foot amounts delivered to the contractor by each of the contractor's surface sources (includes local/water rights water) for the specified years. Describe any water quality limitations or management concerns associated with the identified water sources. Provide the amount of water received for each of the last ten years.

B. Groundwater Supply

Describe the general characteristics of the groundwater basin(s) that underlie the district. Provide a map that includes contractor-operated water wells, and managed groundwater recharge areas. Describe groundwater recharge programs (direct, indirect, or in lieu), groundwater banking programs, surface water storage programs, and other similar programs detailing the amount of CVP and non-CVP water utilized annually for such programs. If there is conjunctive use of surface and groundwater, describe it. Attach a copy of the contractor's groundwater management plan or a description of the contractor's groundwater banking program.

C. Other Water Supplies

Identify any long-term water supplies not described above (drainage from upstream contractors, reclaimed urban waste water, transfer agreements, etc.).

D. Source Water Quality Monitoring Practices

Describe current water quality testing program (frequency of measuring and analyses performed) and which agencies conducted the water testing. Also, describe the contractor's role in the program.

E. Water Uses within the District Agricultural

Describe the type and acreage of crops grown in the district; include seasonal ET amounts, water required for cultural practices, and the leaching requirement for each crop. List the types of irrigation systems used for each crop.

Urban

Describe the urban water use, by customer type, within the district. Describe where applicable, the waste water collection and treatment systems, recycled water uses, and methods of disposal.

Groundwater Management Plan/Banking Programs

List the quantity of water used for planned groundwater recharge, including method of recharge and retrieval. Do not include incidental recharge, such as canal seepage or deep percolation due to excess irrigation unless the quantity recharged and the method of retrieval is specified.

Transfers, Exchanges, Rescheduling, Purchases, or Sales

Describe the source and quantity of water in any transfer, exchange, reschedule, purchase or sale in or out of the district, and for what uses. Describe any other water transactions, such as trades, wheeling, wet year/dry year exchanges, etc.

Other

Describe any other water uses.

F. Outflow from the District

Identify where outflow leaves the district, how it is measured, the measurement accuracy, and where the outflow goes. Describe any water quality monitoring programs for outflow water (frequency of measuring and analyses performed). Identify any constituents (selenium, pesticides, salinity, etc.) that limit reuse of the outflow water and how. Also provide a brief discussion of the contractor's involvement in Central Valley Regional Water Quality Control Board programs or requirements for remediating or monitoring any contaminants that would significantly degrade water quality in the receiving surface waters.

Section 3405 of the CVPIA states that all new, amended, and renewed CVP contracts after October 31, 1992, requires that the contractor or agency be responsible for compliance with all State and Federal water quality standards applicable to surface and subsurface agricultural drainage discharge generated within its boundaries. Contractors included in the drainage problem area, as identified in "A Management

Plan for Agricultural Subsurface Drainage and Related Problems on the Westside San Joaquin Valley (September 1990)," should also complete Addendum C.

G. Water Accounting

Develop a water inventory for the contractor based on the last calendar year or the last water year prior to preparation of each five-year Plan revision. Indicate which dataset(s) is used for the inventory. If a contractor so chooses, a representative water supply year can also be included. The inventory should include the following:

1. Quantify Contractors' Water Supplies
 - a. Surface water supplies, imported and originating within the district, by month
 - b. Groundwater extracted by the district, by month
 - c. Estimated annual groundwater extracted by non-district parties (if records are not available, provide an estimate and basis for estimation)
 - d. Recycled water by month (water originating from a municipal wastewater treatment plant)
 - e. Other supplies by month
2. Quantify Water Used
 - a. Conveyance losses, including seepage, evaporation, and operational spills
 - b. Consumptive use by riparian vegetation
 - c. Applied irrigation water, crop ET, water used for leaching and cultural practices (frost protection, soil reclamation, etc.)
 - d. Urban water use
 - e. Groundwater recharge
 - f. Water exchanges, transfers and banking
 - g. Estimated deep percolation within the district
 - h. Flows to perched water table or saline sink
 - i. Outflow water leaving the district
 - j. Other

3. Overall Water Inventory. Compare total water estimated to be available for sale within the district with the total water actually sold by the contractor.

Section III: BMPs for Agricultural Contractors

Intent

To develop an implementation plan for agricultural BMPs that is proven to accomplish improved (more efficient) water management.

For the purposes of the Criteria, the Plan needs to describe the program that the contractor determines will best accomplish each BMP. The success of some of the practices will depend on cooperative work with other entities. There may be constraints to successful implementation of planned programs. Monitoring and updating will allow the contractor to modify planned programs that do not accomplish the BMP as designed.

A. Critical BMPs for Agricultural Contractors

This section lists the BMPs that all contractors are to implement. Provide a description of how the BMP is being implemented and include time schedules, budgets, monitoring, and maintenance data for each BMP. The contractor must include the current year actual expenditures and a projected budget for the cost of implementing the BMPs for the five years following the Plan update.

Water Measurement

Measure the volume of water delivered by the contractor to each customer. Measurement is not required if a contractor receives only Class 2 water. Measure flows with devices that are operated and maintained to a reasonable degree of accuracy, under most conditions, to +/- 6 percent by volume. Three typical categories of measurement devices include: devices with totalizers, standard flow measurement devices, and non-standard but calibrated devices. Include frequency and date of last calibration.

Designate the Water Conservation Coordinator

Provide the job description and minimum qualifications. Job duties should include five-year Plan preparation, implementation and annual updates. Include the coordinator's title, business address, business phone number, and business email address.

Provide or Support the Availability of Water Management Services to Water Users

Develop and conduct individual programs or cooperative programs with other contractors in regional programs. Some contractors may want to contract or arrange program delivery through consulting firms, cooperative extension, or others. Services required include, but are not limited to:

1. On-farm evaluations
 - a. On-farm irrigation and drainage system evaluations using a mobile lab type assessment, and/or
 - b. Timely field and crop specific water use information to the water user.
2. Normal year and real-time irrigation scheduling and crop ET information (e.g., California Irrigation Management Information System (CIMIS)).
3. Surface, ground, and drainage water quantity and quality data.
3. Agricultural water management educational programs and materials for farmers and staff, and the public (e.g., soil moisture and salinity monitoring; in-school awareness programs; Agwater software; efficient irrigation techniques, crop water budget and other approaches; program delivery via workshops, seminars, newsletters, field days and demonstrations, websites, etc.)
4. Other - provide details

Pricing Structure

Adopt a water pricing structure based (at least in part) on the measured quantity delivered.

Evaluate and Improve Efficiencies of Contractor's Pumps

Many contractors operate booster pumps or groundwater pumps as part of their delivery facilities. A program to evaluate and improve the efficiencies of such pumps can result in energy savings or peak load reductions, or reveal capacity limitations due to inefficient facilities. Over the long term, the contractor can reduce operational costs and improve operational efficiency.

B. Exemptible BMPs for Agricultural Contractors

Provide a description of how the BMP is being implemented and include time schedules, budgets, and monitoring results. Each contractor shall

implement the following BMPs, unless the contractor has an approved exemption from Reclamation. The contractor is required to follow the exemption process (see Addendum A) to justify exemptions. Refer to Addendum B for example justifications for each exemptible BMP. Document the exemption in this section.

Facilitate Alternative Land Use

Facilitate alternative uses (voluntary or compensated) for lands with exceptionally poor production potential or whose irrigation contributes to significant problems such as drainage.

Facilitate Use of Available Recycled Water that Otherwise Would Not be Used Beneficially, Meets all Health and Safety Criteria, and Does Not Cause Harm to Crops or Soils

The use of recycled urban waste water for agricultural irrigation provides an opportunity for reuse of an available water supply. Reuse of urban waste water can be an important element in overall water management.

Facilitate the Financing of Capital Improvements for On-Farm Irrigation Systems

Financial aid to farmers may include cataloging available funding sources and procedures and/or obtaining funding, administering the program, and providing low-interest loans.

Incentive Pricing

Implement a pricing structure that promotes one or more of the following goals:

1. More efficient water use at the farm level
2. Conjunctive use of groundwater
3. Appropriate increase of groundwater recharge
3. Reduction in problem drainage
3. Improved management of environmental resources
4. Effective management of all water sources throughout the season by adjusting seasonal rates based on current conditions

Canal Lining/Piping and Regulatory Reservoirs

1. Line or pipe distribution systems to increase distribution system flexibility and capacity, decrease maintenance, and reduce seepage

2. Construct regulatory reservoirs to improve distribution system delivery flexibility

Increase Flexibility in Water Ordering By, and Delivery To, Water Users (within Operational Limits)

Modify distribution facilities and controls to increase the reliability, consistency, and flexibility of water deliveries.

Construct and Operate Contractor Spill and Tailwater Recovery Systems

Construct facilities to capture and reuse district operational spills.

Plan to Measure Outflow

Measure the volume outflow with methods or devices that are operated and maintained to a reasonable degree of accuracy, under most conditions, to +/- 20 percent. Identify spill locations, prioritize spill locations by quantity of spill, and determine best measurement method/cost. If outflow measurement has not yet been completed, submit funding proposal and provide the estimated cost and milestone schedule.

Optimize Conjunctive Use

Increase planned conjunctive use of surface and groundwater within the district. Conjunctive use usually includes a groundwater management Plan or banking program.

Automate Distribution and/or Drainage System Structures

Automation of distribution and/or drainage system structures may increase flexibility in water deliveries and increase the contractor's control over its water supplies, thus providing the opportunity to improve the efficiency of water use.

Facilitate or Promote Water User Pump Testing and Evaluation

Describe the program and number of pumps evaluated.

Mapping

Develop Geographic Information System (GIS) maps of the district's distribution system and drainage system. A comprehensive GIS database should include GPS locations of district facilities, inflow/outflow points, conveyance system, etc. as well as base datasets such as soils and hydrography. If digital mapping has not yet

been completed, include the estimated cost and milestone schedule for implementing this BMP.

C. Provide a 5-Year Budget

Provide current year actual expenditures and a projected budget for the 4 years following the Plan implementation for the cost of implementing the BMPs.

Section IV: BMPs for Urban Contractors

Intent

To develop an implementation plan for urban BMPs proven to accomplish improved (more efficient) water management. These Criteria require contractors to implement BMPs under the CUWCC 2011 MOU.

This part of the Plan identifies contractor-specific programs to accomplish the BMPs. It is understood that programs developed by wholesale agencies may not be implemented at the retail customer level, except within the contractor's retail service area. For the purposes of the Criteria, the Plan needs to describe the program that best accomplishes the BMP.

The success of some of the practices will depend on cooperative work with other entities. It is recognized that there may be constraints to successful implementation of planned programs. Monitoring and updating will allow the contractor to modify any planned programs that do not accomplish the BMP as designed.

A. BMPs for Urban Contractors

This section lists the BMPs that contractors may implement. Refer to the CUWCC MOU for more information on the compliance options. Provide a description of which compliance option will be implemented (e.g. Traditional, Flex Track or GPCD). Describe how the BMP is being

implemented and include time schedules, budgets and monitoring, and maintenance data for each BMP. Descriptions of the BMP targets and program designs are available at the CUWCC web site.

Foundational BMPs

1. Utility Operations Programs
 - a. Operations Practices
 - i. Conservation Coordinator
 - ii. Water waste prevention
 - iii. Wholesale agency assistance programs
 - b. Water Loss Control
 - i. Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections
 - ii. Retail Conservation Pricing
2. Education Programs
 - i. Public Information Programs
 - ii. School Education Programs

Programmatic BMPs

1. Residential
 - a. Residential assistance program
 - b. Landscape water survey
 - c. High-efficiency clothes washers (HECWs)
 - d. WaterSense Specification (WSS) toilets
 - e. WaterSense Specifications for residential development
2. Commercial, Industrial, and Institutional (CII)
3. Landscape

Provide a 5-Year Budget

Provide current year actual expenditures and a projected budget for the 4 years following the Plan implementation for the cost of implementing the BMPs.

ADDENDUM A - EXEMPTION PROCESS

Intent

To demonstrate in a clear and concise manner that a BMP is not cost-effective, not financially feasible, and not legally or environmentally possible for a contractor to implement. Only the BMPs in Section III.B. are exemptible for agricultural contractors. For urban contractors, Foundational BMP 1.3 is the only non-exemptible BMP.

Evaluation

Some BMPs are not appropriate or possible for a contractor to implement. To document an exemption, the basis, rationale, and details for excluding a BMP must be provided. Such documentation must address, as appropriate, cost-effectiveness, financial feasibility, and environmental or legal constraints to BMP implementation. Urban BMP exemption requests should use the CUWCC exemption process. All urban and agricultural exemption requests will be reviewed for completeness, accuracy, and appropriateness by either Reclamation or an independent contractor.

Detail Expected in an Adequate BMP Exemption

Legal Constraints

Due to legal constraints, the following must be detailed in order to justify a BMP exemption:

1. A list of any known laws, regulations, court decisions, or other legal constraints that make it illegal for the contractor to implement the BMP.
2. A list of the steps required to remove these constraints.
3. A description of what steps the contractor has taken to remove these constraints.
4. Documentation of efforts by the contractor to work with other entities that have

the legal authority to carry out the BMP within the contractor's service area.

Environmental Constraints

In order to justify an exemption due to known adverse environmental impacts, the Plan must document critical environmental issues and known (qualitative and/or quantitative) negative impacts of the BMP, and an explanation of why effective mitigation of these impacts is not possible. If mitigation of the environmental impacts is possible, the practice must be implemented unless it can be exempted by another exemption category. For example, if the mitigation costs make the project economically infeasible, a discussion of the mitigation plan and necessary mitigation costs should be included as part of the economic analysis.

Financial Constraints

In order to adequately justify an exemption due to financial constraints, the Plan must clearly document the following:

1. The contractor's funding needed to implement the BMP.
2. A discussion regarding why the contractor cannot finance the BMP through rate adjustments, assessments, etc.
3. A discussion of the contractor's reasonable efforts to secure funding from other entities that include, but are not limited to, lending institutions and bonding authorities, and an explanation of why these entities would not provide funding.
4. The required amount of a grant or subsidy necessary to feasibly implement the BMP if financing or partnerships could not be obtained. A benefit-cost analysis that demonstrates the costs to the contractor outweigh the benefits to the contractor over the life of the measure. The contractor must perform the analysis by comparing the present value of all benefits to the present value of all costs.

Document the projected/estimated benefits and costs and the methodology for analysis (benefits and costs should be quantified to the extent possible). The analysis performed for each excluded BMP (from the contractor's perspective) must include, but is not limited to, the following benefits and costs:

Benefits

1. All capital costs avoided by the contractor which include, but are not limited to, the costs associated with the development of new supplies (studies, construction, labor, etc.), transportation, the required increase in storage, distribution capacity, wastewater facilities and treatment capacity, etc.
2. Operation and maintenance (O&M) costs associated with the decrease in the production and distribution of water or the treatment and disposal of wastewater that include, but are not limited to, energy, labor, treatment, storage, drainage treatment and disposal, etc.
3. Water purchases avoided by the contractor.
3. Environmental costs avoided by the contractor.
3. Environmental enhancements.
3. Revenues from other entities that include, but are not limited to, revenue from the sale of water made available by the BMP, financial incentives received from other entities, etc.

4. Other benefits to the contractor customers that include, but are not limited to, hydropower, improved crop yields, improved crop quality, labor savings, fertilizer savings, increased farm income, etc.

Costs

1. Capital expenditures incurred by the contractor for implementation of the BMP that include, but are not limited to, equipment, supplies, materials, construction, etc.
2. O&M costs to plan, design, implement, enforce, and evaluate the practice.
3. Financial incentives to customers.
3. Costs to the environment (describe the nature of the negative impact(s) and potential losses to the environment).
3. Other costs to the contractor.

Several accepted benefit-cost analysis methodologies exist (e.g., California Energy Commission's Integrated Resource Planning Methodology, Generally Accepted Accounting Principles, AWMC's Net Benefit Analysis, etc.). A contractor is considered to be the best suited to evaluate their own economic situation with an appropriate methodology.

3. A discussion and quantification, to the extent possible, of other benefits associated with the implementation of the BMP that may be of interest to potential partners, but are not the direct, sole responsibility of the contractor.

ADDENDUM B - APPLICABILITY PROCESS

To establish that a BMP is not applicable (NA) to the contractor, the Plan should explain why the BMP does not apply to the contractor. This justification must be consistent with Section I: Description of the District. Example justifications for each exemptible BMP are listed below. This list is not all inclusive.

Exemptible BMPs for Agricultural Contractors

1. *Facilitate alternative land use* - NA could include contractors without irrigable lands that have exceptionally high water duties or whose irrigation does not contribute to significant problems.
2. *Facilitate use of available recycled water that otherwise would not be used beneficially, meets all health and safety criteria, and does not cause harm to crops or soils* - NA could include completely piped systems that do not have delivery constraints.
3. *Facilitate the financing of capital improvements for on-farm irrigation systems* - None identified.
3. *Incentive pricing* - Contractor that receives only Class 2 water.
3. *Canal lining/piping and regulatory reservoirs* - NA could include completely piped systems, unlined canal systems, sections which are used as part of a planned conjunctive use program, or completely piped systems that do not have delivery constraints.
3. *Increase flexibility in water ordering by, and delivery to, the water users within operational limits* - None identified.
3. *Construct and operate contractor spill and tailwater recovery systems* - NA could include completely piped systems that do not have delivery constraints.
3. *Plan to measure outflow* - NA could include no spill or tailwater leaves the district.
3. *Optimize conjunctive use* - NA could include contractors who do not overlie a useable groundwater basin and thus neither the contractor nor their customers pump or use groundwater, and the contractor has no water supplies other than the contract supply.
3. *Automate canal structures* - NA could include completely piped systems which do not have delivery constraints.
3. *Facilitate or promote water user pump testing and evaluation* - NA could include districts that have no groundwater, lift or diversion pumps.
3. *Mapping* - None identified

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ADDENDUM C - INFORMATION REQUIRED OF CONTRACTORS LOCATED IN DRAINAGE PROBLEM AREA

The contractors included in the drainage problem area, as identified in “A Management Plan for Agricultural Subsurface Drainage and Related Problems on the Westside San Joaquin Valley (September 1990),” are listed by subarea below. If future editions of the drainage report revise the boundaries of a drainage problem area, or other factors used to determine which contractors are in a drainage problem area, Reclamation will revise Addendum C to conform to the current drainage report.

1. Reclamation contractors in the **Grasslands Subarea**: Central California Irrigation District, Del Puerto Water District, Firebaugh Canal Water District, Mercy Springs Water District, Pacheco Water District, Panoche Water District, San Luis Canal Company, and San Luis Water District.
2. Reclamation contractors in the **Westlands Subarea**: James Irrigation District, Tranquillity Irrigation District, and Westlands Water District.
3. Reclamation contractors in the **Tulare Subarea**: Alpaugh Irrigation District, Atwell Island Water District, Lower Tule River Irrigation District, and Pixley Irrigation District.

4. Reclamation contractors in the **Kern Subarea**: Alpaugh Irrigation District.

The contractors listed above shall describe which recommendations prescribed in “*A Management Plan for Agricultural Subsurface Drainage and Related Problems on the Westside San Joaquin Valley (September 1990)*” have been incorporated in their water conservation programs to improve conditions in drainage problem areas. These recommendations include:

- Source Control
- Land Retirement
- Drainage Water Treatment
- Drainage Water Reuse
- Shallow Groundwater Pumping
- Evaporation Ponds

Provide a description and level of expenditure for each activity designed to address the recommendations of the San Joaquin Valley Drainage Program. Identify how implementation of the recommendations has or will substantially reduce deep percolation on drainage problem lands. Describe which recommendations have not been implemented and why.

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