

# Chapter 5

## System Supplies

### 5.1 Summary of Existing and Planned Sources of Water

### 5.2 Surface Water

### 5.3 Groundwater

### 5.4 Recycled Water

Municipal recycled water is municipal wastewater that has been treated to a specified quality to enable it to be used again. The term “recycled water” is defined in the Water Code more broadly than “municipal recycled water”. For purposes of the UWMPs, “recycled water” will mean only municipal recycled water.

There are two requirements treated municipal wastewater must meet to be classified as recycled water. It must be reused:

- Beneficially, in a manner consistent with Title 22
- In accordance with a Regional Water Quality Control Board (RWQCB) permit such as National Pollutant Discharge Elimination System - NPDES, waste discharge requirement - WDR, or water recycling requirement - WRR

Each UWMP preparer is to include wastewater and recycled water discussion in its UWMP as follows:

- If recycled water is currently or planned to be used in the service area an UWMP preparer, complete Parts A through E (described below)
- If recycled water is not used and there are no plans for use within the planning horizon of the UWMP, complete Parts A, B, and E (described below)

There have not been any legislative changes to the UWMP legislation addressing recycled water since the preparation of the 2010 UWMPs. For the 2015 UWMPs, changes to the recycled water tables have been made to improve data reporting. Columns have been added to provide additional clarification, such as the level of treatment to support assessment of the potential use of the water for water supply benefit. Some of the added columns provide optional information and are marked as such. The additional information will improve and support consistency in how UWMPs quantify recycled water and facilitate use of the data provided in the UWMPs.

Included in the 2015 guidebook is an appendix (Appendix YY) clarifying uncertainty and variability in how recycled water was reported in the 2010 UWMPs. These uncertainties include:

- What is considered recycled water?
- What are beneficial uses of recycled water?
- How is recycled water accounted for in an UWMP if multiple agencies are involved in the collection, treatment, and distribution of recycled water?

It is requested that UWMP preparers review Appendix YY before completing the recycled water section of the UWMP.

For 2015, DWR and the SWRCB are cooperatively completing a statewide survey of recycled water use. For water suppliers with recycled water in their water supply portfolio, it is DWR's objective that there is consistency between the data compiled for the survey and that reported in the UWMPs. Please see Appendix YY for additional discussion of the survey. If there are additional questions during preparation of an UWMP, please contact Toni Pezzetti at DWR (916-651-7024 or [tpezzett@water.ca.gov](mailto:tpezzett@water.ca.gov)).

The following "parts" are recommended for presenting recycled water information in an UWMP. They do not have to be labeled as Part A, Part B, etc, but the organization is provided as a reference both for the Guidebook and an UWMP section.

#### **Part A: Recycled Water Coordination**

*CWC 10633 Provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.*

Each UWMP preparer is to:

- Coordinate with any wastewater facility or agency that collects or treats wastewater within the urban water supplier's service area regarding the quality and availability of wastewater for beneficial reuse. In addition, other water supply and planning agencies should be considered regarding the existing and potential availability and uses of recycled water. These discussions can occur within the framework of an IRWM or other local and regional planning organization. Each of the types of organizations identified in the CWC 10633 should also be considered.
- Identify in a bullet list the agencies collecting, treating, or discharging municipal wastewater both generated and treated within the service area and indicate the role.

#### **Part B: Wastewater Collection, Treatment, and Disposal**

*CWC 10633 (a) (Describe) the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal .*

This section summarizes collection and treatment of wastewater generated within the service area.

- Describe how the agencies identified in Part A interact and any joint ventures or joint operations. For example, one agency collects wastewater and delivers it to another agency that operates the treatment facility.

Table 5-3 summarizes information on collection of wastewater generated within the service area. It is to be completed for each UWMP, whether recycled water is used within the service area or not. To complete Table 5-3:

- Determine the percentage of the service area and the population percentage served by the wastewater collection system.
- Contact the owners and operators of each agency that collects or treats wastewater in the supplier’s service area regarding the volume of wastewater collected within the service area. Identify the facility that treated the collected wastewater.
- If wastewater generated from outside the service area is treated within the service area, indicate that.
- If a third-party organization operates a facility under contract, DWR requests that that information (yes or no) be indicated.

Table 5-3 Wastewater Generated Within Service Area in 2015						
Percentage of 2015 service area covered by wastewater collection system						
Percentage of 2015 service area population covered by wastewater collection system						
Was wastewater generated outside the service area treated in the service area?*						yes/no
Wastewater Collection Agency	Wastewater Treatment Agency	Treatment Plant Name	Is WWTP located within UWMP Area?*	Is WWTP Operation Contracted to a Third Party? (opt)	Was Volume Measured or Estimated?	2015 Wastewater Volume Generated within Service Area
			yes/no	yes/no	E/M	
Total Wastewater Generated in UWMP area:						
units in acre-feet per year						
* If yes, complete Table 5-4						

CWC 10633 (b) (Describe) the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.

Table 5-4 identifies the treated wastewater disposed of within the service area, which may include wastewater that originated from outside the UWMP area.

- Identify the specific location of the discharge, the volume annually discharged, and the level of treatment of the discharged water.
- If wastewater is not treated or disposed within the service area, Table 5-4 does not need to be completed. Instead, provide in the narrative a brief discussion of the disposal and/or recycling of treated wastewater at the facility that receives the service area wastewater.

Table 5-4 Wastewater Treatment and Discharge Within Service Area in 2015									
Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Wastewater Discharge ID Number (opt)	Method of Disposal	Does this include wastewater generated outside the service area?	Treatment Level	2015			
						Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area
			<i>drop down menu</i>	<i>yes/no</i>	<i>drop down menu</i>				
<b>Total</b>						0	0	0	0

*units in acre-feet per year*

**Part C: Recycled Water System**

*CWC 10633(c) (Describe) the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.*

For UWMP preparers implementing or planning recycled water use within the service area, this section should provide an overview of the current recycled water system, including any planned expansion.

- Provide text describing the recycled water system operating in the service area.
- Identify each agency involved in the recycled water system collection, treatment, and distribution, including wholesalers, retailers, special districts, or joint ventures.
- Provide information on the system's history and operation.
- Provide a map or specific physical description of the coverage of the distribution system providing recycled water in 2015.
- Provide a reference to a recycled water master plan or similar document, if one has been prepared, to enable DWR to access it.

**Part D: Recycled Water Beneficial Uses**

*CWC 10633(d) (Describe and quantify) the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses .*

*CWC 10633(e) (Describe) the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.*

For UWMP preparers implementing or planning recycled water use within the service area, this section discusses how recycled water currently is used within the service area. The definition of recycled water (see Appendix YY) includes the term “direct beneficial use”, which in turn is defined in the Code of California Regulations, Title 22, §60301.200 as “the use of recycled water that has been transported from the point of treatment or production to the point of use without

an intervening discharge to waters of the State.” Appendix YY provides more detailed discussion of how to apply these terms to recycled water.

Text accompanying Tables 5-4 and 5-5 should:

- Provide an overview of the level of treatment (there may be more than one) of recycled water used and the types of uses. The UWMP preparer may consider highlighting innovative uses of recycled water or a particular organization that has demonstrated commitment to the use of recycled water.
- Provide information on the quality of water (i.e., level of treatment) provided and the specific types of recycled water uses, including such information as crops irrigated or types of landscapes irrigated.
- Provide a summary of planned future projects, including technical and economic feasibility and the potential for the projects to be implemented.

Complete Table 5-5 by quantifying for each direct beneficial use the amount of recycled water currently being used within the urban water supplier’s service area, as well as projected volumes and uses into the future. If more than one supplier provides recycled water within the service area, separate tables may be provided for each (use Table 5-5a and Table 5-5b). Please refer to Appendix YY before completing Table 5-5. Appendix YY provides additional discussion how recycled water should be quantified and discusses common errors in evaluating recycled water volume and uses.

Table 5-5 Current and Projected Recycled Water Direct Beneficial Uses Within Service Area								
Name of Agency Producing (Treating) the Recycled Water:								
Name of Agency Operating (Distributing) the Recycled Water System:								
User type	General Description of 2015 Uses	Level of Treatment	2015	2020	2025	2030	2035	2040 (opt)
Agricultural irrigation		drop down menu						
Landscape irrigation (ex. golf courses)								
Golf course irrigation								
Commercial use								
Industrial use								
Geothermal or energy production								
Seawater intrusion barrier								
Recreational impoundment								
Wetlands or wildlife habitat								
Groundwater recharge								
Surface water augmentation								
Direct potable reuse								
Other								
<b>Total:</b>			0	0	0	0	0	0

*units in acre-feet per year*

Each UWMP which has recycled water use is to provide a comparison of earlier projected use of recycled water to actual uses. This is accomplished by completing Table 5-6. From the urban water supplier’s 2010 UWMP, provide the 2015 projected estimates of recycled water use. Compare those estimates to the actual 2015 recycled water use included in Table 5-5.

Note that the highlighted cells in the total rows of Tables 5-4, 5-5, and 5-6 should be the same.

Table 5-6 Recycled water - 2010 UWMP use projection compared to 2015 actual		
Use type	2010 Projection for 2015	2015 actual use
Agricultural irrigation		
Landscape irrigation (ex golf courses)		
Golf course irrigation		
Commercial use		
Industrial use		
Geothermal or energy production		
Seawater intrusion barrier		
Recreational impoundment		
Wetlands or wildlife habitat		
Groundwater recharge		
Other:		
<b>Total</b>	0	0

*units in acre-feet per year*

**Part E: Actions to Build Future Recycled Water Uses**

*CWC 10633(f) (Describe the) actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.*

*CWC 10633(g) (Provide a) plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.*

Each UWMP preparer is to complete this section, whether recycled water is used or planned to be used.

- Assess potential uses of recycled water, whether or not it is currently being used in the service area.
- Discuss the issues constraining recycled water implementation and expansion and what could be done to address those limitations.
- Describe the approaches the urban water supplier is implementing or is planning to implement to increase or encourage the use of recycled water within its service area, building upon the discussion of planned future expansion of recycled water use in the service area. Summarize them in Table 5-7. These actions may include financial incentives, funding for onsite retrofits for industrial or commercial users, public outreach, demonstration projects, building code modification, ordinances, etc.
- Provide estimates of the volume of additional recycled use that could be realized by implementing any of the actions (Table 5-7).
- If recycled water use is not planned to be implemented within the planning horizon of the UWMP, identify the nearest known availability of recycled water and identify the reasons recycled water is not being considered as a potential water supply.

**Table 5-7**  
**Recycled Water - Methods to Expand Future Recycled Water Use**

Actions	Description	Planned Implementation Year	Expected Increase in Recycled Water Use (acre-feet per year)
name of action			
name of action			
name of action			
<b>Total</b>			<b>0</b>

The UWMP preparer may not be the organization responsible for the treatment or distribution of recycled water in the service area. However, as the local water supplier, the UWMP preparer should be working with the recycled water purveyor to address opportunities to expand recycled water use, revenue impacts to both agencies, and common benefits. These actions can include working with appropriate agencies to support the wastewater agencies plant upgrades or other infrastructure needs to increase recycled water use. These actions should be included in Table 5-7.

## 5.5 Desalinated Water Opportunities

*CWC 10631(h). Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.*

UWMP preparers are to consider the potential for desalinated water to be a water supply option. Identify and discuss opportunities for development of desalinated water supplies from ocean water, brackish surface water, and brackish groundwater. Indicate the level to which desalination is being considered.

If desalination of groundwater or seawater is currently being implemented, indicate the volume produced in 2015, the source of the water, and the total dissolved solids (TDS) measurement of the source water. If brackish groundwater is being desalinated, indicate the percentage of the volume of groundwater production table (Table 5-2) and delivered groundwater (Table 5-1) is desalinated. If surface water is being desalinated, the volume should be indicated in the desalinated water entry on Table 5-1.

If the water supplier considers there are no opportunities for development of desalinated water sources within the planning horizon of the 2010 UWMP, the supplier is to clearly indicate that desalination is not being considered and discuss why.

## 5.6 Transfer Opportunities

## 5.7 Future Water Projects