

CITY OF TRACY

Water Management Plan

Date of First Draft – November 30, 2017
Date of Second Draft - December 17, 2018
Date of Final - TBD

This page intentionally left blank

TABLE OF CONTENTS

Section 1:	Description of the City	1
Section 2:	Inventory of Water Resources	11
Section 3:	Best Management Practices for Agricultural Contractors – Not Applicable	16
Section 4:	Best Management Practices for Urban Contractors	26
Chapter 5:	Agriculture Water Inventory Tables and Instructions – Not Applicable	30
Chapter 6:	Urban Water Inventory Tables	37

Attachments

- Attachment A: Anticipated Land Use Changes
- Attachment B: City of Tracy 2015 Urban Water Management Plan (UWMP) Water Supply Infrastructure Map
- Attachment C: United States Bureau of Reclamation (USBR) Resolution for City Manager (CM) authority
- Attachment D: City of Tracy 2015 UWMP Shortage Contingency Plan
- Attachment E: City of Tracy Municipal Code Chapter 11.28 Water Management
- Attachment F: City of Tracy 2015 UWMP Groundwater Management Plan
- Attachment G: City of Tracy 2015 UWMP Section 5 Groundwater Banking Plan
- Attachment H: City of Tracy 2016 Consumer Confidence Report (CCR)
- Attachment I: City of Tracy 2015 UWMP Demand Management Measures (DMMs) and CalWEP BMP 2016 Annual Report
- Attachment J: City of Tracy Water Management Plan Section 4 BMP 5 year Budget

This page intentionally left blank

SECTION 1 - DESCRIPTION OF THE CITY

City Name:	City of Tracy
Contact Name:	Stephanie Reyna-Hiestand
Title:	Water Resources Analyst II
Telephone:	209-831-6333
Email:	Stephanie.Hiestand@cityoftracy.org
Web Address:	http://www.cityoftracy.org/?navid=687

A. History

1. Date City Formed: July 20, 1910

Date of First Reclamation Contract: July 22, 1974

Original Size Acres: 1.1

Current Year (last complete calendar year)

2016

2. Current size, population, and irrigated acres

(2016)	
Size (acres)	26,880
Population Served (Urban Connections)	24,002
irrigated Acres	n/a

3. Water supplies received in current year

Water Source	AF
Size (acres)	15,361
Population Served (Urban Connections)	24,002
irrigated Acres	n/a
Federal urban water (Tbl 1)	3,341
Federal agricultural water (Tbl 1)	n/a
State water (Tbl 1)	n/a
Other Wholesaler (define) (Tbl 1)	n/a
Local surface water (Tbl 1)	n/a
Upslope drain water (Tbl 1)	n/a
District groundwater (Tbl 2)	648
Banked water (Tbl 1)	n/a
Transferred water (Tbl 1)	n/a
Recycled water (Tbl 3)	n/a
Other (SSJID) (Tbl 1)	11372
Total	15361

4. Annual entitlement under each right and/or contract

	AF	Source	Contract #	Availability Period(s)
Reclamation Urban AF/Y	10,000	USBR	14-06-200-7857 	WY2016
Reclamation Agriculture AF/Y	5,000	USBR-BCID	14-06-200-4305A	WY2016
	5,000	USBR-WSID	7-07-20W04BM	WY2016
Other AF/Y SSJID	11,120	SCWSP		WY2016
Other AF/Y BBID	4,500	Pre-1914		WY2016
Other AF/Y Semi-Tropic	10,500	Water Banking		3,500 AF/y for 3 years

5. Anticipated land-use changes. For Ag contractors, also include changes in irrigated acres

Please see Attachment A from Tracy 2015 Urban Water Management Plan (UWMP)

6. Cropping patterns (Agricultural only)

List of current crops (crops with 5% or less of total acreage) can be combined in the 'Other' category

Original Plan (enter date)		Previous Plan (enter date)		Current Plan (enter date)	
Crop Name	Acres	Crop Name	Acres	Crop Name	Acres
Other (<5%)		Other (<5%)		Other (<5%)	
Total		Total		Total	

(See Planner, Chapter 3, Addendum D for list of crop names)

7. Major irrigation methods (by acreage) (Agricultural only)

Original Plan (enter date)		Previous Plan (enter date)		Current Plan (enter date)	
Irrigation Method	Acres	Irrigation Method	Acres	Irrigation Method	Acres
Level basin		Level basin		Level basin	
Furrow		Furrow		Furrow	
Sprinkler		Sprinkler		Sprinkler	
Low-volume		Low-volume		Low-volume	
Multiple		Multiple		Multiple	
Other		Other		Other	
Total		Total		Total	

B. Location and Facilities

See Attachment B for maps containing the following: incoming flow locations, turnouts (internal flow), and outflow (spill) points, conveyance system, storage facilities, operational loss recovery system, district wells and lift pumps, water quality monitoring locations, and groundwater facilities.

1. Incoming flow locations and measurement methods

Location Name	Physical Location	Type of Measurement Device	Accuracy
Delta Mendota Canal	John Jones WTP	Magnetic Type Measure Dev.	99% (+/-1%)
SSJD	Linne Rd	Magnetic Type Measure Dev.	99% (+/-1%)

2. Current year Agricultural Conveyance System

Miles Unlined - Canal	Miles Lined - Canal	Miles Piped	Miles - Other

3. Current year Urban Distribution System

Miles AC Pipe	Miles Steel Pipe	Miles Cast Iron Pipe	Miles - Other
60	70	300	12

4. Storage facilities (tanks, reservoirs, regulating reservoirs)

Name	Type	Capacity (MGD)	Distribution or Spill
JJWTP	Reservoir	4.66	Distribution
Northeast Industrial	Tank	2.4	Distribution
Linne Rd	Tank	7.1	Distribution

5. Description of the agricultural spill recovery system and outflow points

N/A

6. Agricultural delivery system operation (check all that apply)

Scheduled	Rotation	Other (Describe)

7. Restrictions on water source(s)

Source	Restriction	Cause of Restriction	Effect on Operations
Water Banking	Annual over 3 years	Drought and Contract	Little to none

8. Proposed changes or additions to facilities and operations for the next 5 years

Late 2018, the City of Tracy is intending to incorporate Recycled Water into its system for irrigation of fields, right of ways and other areas within the City.

C. Topography and Soils

1. Topography of the district and its impact on water operations and management

The natural slope of the land is from south to north with ground surface elevations ranging from about 210 feet Above sea level at the southern boundary to 9 feet at the northerly boundary.

2. District soil association map (Agricultural only) - See Attachment A, District Soils Map

N/A

3. Agricultural limitations resulting from soil problems (Agricultural only)

Soil Problem	Estimated Acres	Effect on Water Operations and Management
Salinity		
High-water table		
High or low infiltration rates		
Other (define)		

D. Climate

1. General climate of the district service area –

Spring, summer, and fall are generally hot in Tracy, with temperatures often reaching over 100 degrees Fahrenheit (°F) on summer days. Tracy's winters are usually mild, although the dense "Tule fog" can last for weeks. As shown in the table below, rainfall in the area averages 9.86 inches per year and is generally confined to the wet season from late October to early May. The average reference evapotranspiration (ET₀) for the region is 57.0 inches per year.

Month	Average Temperature (a)		Standard Average ET ₀ (b) (inches)	WY 2016/17 Rainfall (a) (inches)
	Min (°F)	Max (°F)		
January	36.7	54.1	1.6	6.6
February	40	61	2.2	5.3
March	42.6	66.7	3.7	1.5
April	45.5	73.1	5.1	1.8
May	50.4	80.7	6.8	0.0
June	55.2	88	7.8	0.0
July	57.1	93.6	8.7	0.0
August	55.7	92.1	7.8	0.0
September	53.9	87.9	5.7	0.0
October	48.7	78.5	4.0	2.9
November	42.1	64.9	2.1	0.8
December	36.6	54.7	1.6	1.9
Annual	47.0	74.6	57.0	20.8

Weather station
ID: 048999

Data period: Year 10/01/16 to Year 09/30/2017

ET Station ID:
Tracy #167

Average annual frost-free
days: 297 (90% @ 28.5° F)

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

2. Impact of microclimates on water management within the service area

Since the average annual ET₀ is approximately 47 inches more than the average annual precipitation, and because more than 85% of the annual precipitation occurs between the months of November and April, growing turf or other plantings in this region requires a significant amount of irrigation during the dry season. This irrigation demand contributes to the overall and observed seasonal variation in water demand throughout the City's service area.

E. Natural and Cultural Resources

1. Natural resource areas within the service area

Name	Estimated Acres	Description
None		

2. Description of district management of these resources in the past or present

N/A

3. Recreational and/or cultural resources areas within the service area

Name	Estimated Acres	Description
None		

F. Operating Rules and Regulations

1. Operating rules and regulations

See Attachment C, City Rules and Regulations (water related) in Resolution 2012-095 authorizing the City Manager to execute agreements as they relate to the USBR and water supply.

2. Water allocation policy (Agricultural only)

N/A

3. Official and actual lead times necessary for water orders and shut-off (Agricultural only)

N/A

4. Policies regarding return flows (surface and subsurface drainage from farms) and outflow (Agricultural only)

N/A

5. Policies on water transfers by the district and its customers

When the City has surplus Bureau allocation from the Delta Mendota Canal, it is transferred to other Central Valley Project contractors if there is a need for the water.

G. Water Measurement, Pricing, and Billing

1. Agricultural Customers

Refer to BMP A.1. Information on water measurement for agricultural contractors is completed under BMP A.1 on page 4-15.

2. Urban Customers

a. Total number of connections	23994
b. Total number of metered connections	23994
c. Total number of connections not billed by quantity	273
d. Percentage of water that was measured at delivery point	100%
e. Percentage of delivered water that was billed by quantity	87%
f. Measurement device table	

Meter Size and Type	Number	Accuracy* (+/- percentage)	Reading Frequency (Days)	Calibration Frequency (Months)	Maintenance Frequency (Months)
5/8" - 3/4"	11024	n/a	30	-0-	as needed - replace
1"	12260	n/a	30	-0-	as needed - replace
1-1/2"	132	n/a	30	-0-	as needed - replace
2"	441	n/a	30	-0-	as needed - replace
3"	57	98	30	24	12
4"	42	100	30	24	12
6"	26	95	30	24	6
8"	9	100	30	12	6
10"	3	60	30	12	6
Compound					
Turbo					
Other (define)					
Total					

* Documentation verifying the accuracy of measurement devices must be submitted with Plan and included as Attachment C.

3. Agricultural and Urban Rates

- a. Current year urban water charges - including rate structures and billing frequency

See following page.

rainbird 2045 pj ma x bmpreporting.v2.cu 2017-water-manage x Stephanie

CUWCC BMP IronPort ICMA Climate Tracy - C Bill Pay myCigna - Get A DRINC Portal > A https://smile.am Elvenar - Fantasy State Water Reso EPA Templates

CUWCC Home Under Input Forms Base Year Data Reports Reporting Unit

Reporting Year

< 2016 >

Water Sources and Usage

- Potable Water Sources
- Non Potable Water Sources
- Potable Water Uses
- Non Potable Water Uses

BMP 1

- 1.1 Retail Operations Practices
- 1.2 Retail Water Loss Control
- 1.3 Retail Metering with Commodity**
- 1.4 Retail Conservation Pricing

BMP 2

Reporting Year

< 2016 >

Water Sources and Usage

- Potable Water Sources
- Non Potable Water Sources
- Potable Water Uses
- Non Potable Water Uses

BMP 1

- 1.1 Retail Operations Practices
- 1.2 Retail Water Loss Control
- 1.3 Retail Metering with Commodity
- 1.4 Retail Conservation Pricing**

BMP 2

2 1 Duhlin Information

NA

Please Fill Out The Following Matrix

Account Type	# Metered Accounts	# Metered Accounts Read	# Metered Accounts Billed by Volume	Billing Frequency Per Year	# Estimated Bills/Year	# Of Meter Readings per Year
Single-Family	21,931.00	21,931.00	21,931.00	Monthly	265,000.00	265,000.00
Multi-Family	650.00	650.00	650.00	Monthly	7,800.00	7,800.00
Commercial	693.00	693.00	693.00	Monthly	8,350.00	8,350.00
Industrial	30.00	30.00	30.00	Monthly	360.00	360.00
Institutional	48.00	48.00	48.00	Monthly	576.00	576.00
Dedicated Irrigation	439.00	166.00	439.00	Monthly	2,000.00	2,000.00

Number of CII Accounts with Mixed-used Meters 439

Number of CII Accounts with Mixed-used Meters Retrofitted with Dedicated Irrigation Meters during Reporting Period 0

Feasibility Study

Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated

1/10/2017 2:15:00 PM

Yes No N/A

Form Complete Form Status: Submitted

A. Implementation (Water Rate Structure)

Based on Rate Structure **Not On Track**
Based on Revenue **Not On Track**

Enter the Water Rate Structures that are assigned to the majority of your customers, by customer class.

Rate Structure Option	Customer Class Name	Total Revenue Commodity Charges	Total Revenue Customer Meter/Service (Fixed) Charges	New	Edit	Delete
Increasing Block	Single-Family	4,300,224.40	4,392,398.32	<input type="button" value="New"/>	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
Increasing Block	Multi-Family	679,303.50	369,055.93	<input type="button" value="New"/>	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
Increasing Block	Commercial	1,116,051.25	662,415.39	<input type="button" value="New"/>	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
Increasing Block	Industrial	473,930.15	56,962.89	<input type="button" value="New"/>	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
Increasing Block	Institutional	184,582.00	116,568.02	<input type="button" value="New"/>	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
Increasing Block	Dedicated Irrigation	833,630.88	310,683.66	<input type="button" value="New"/>	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
			\$7,587,722.18	\$5,908,084.21		

b. Annual charges collected from agricultural customers

Fixed Charges			
Charges (\$ by unit)	Charge Units (\$/AF, etc.)	Units Billed During Year (AF, etc.)	Total \$ Collected (\$ Times Units)

Please refer to the guidebook for information when completing the table.

Volumetric Charges			
Charges (\$ by unit)	Charge Units (\$/AF, etc.)	Units Billed During Year (AF, etc.)	Total \$ Collected (\$ Times Units)
SEE BELOW			

Please refer to the guidebook for information when completing the table

Reporting Year

2016

[Water Sources and Usage](#)

[Potable Water Sources](#)

[Non Potable Water Sources](#)

[Potable Water Uses](#)

[Non Potable Water Uses](#)

BMP 1

[1.1 Retail Operations Practices](#)

[1.2 Retail Water Loss Control](#)

[1.3 Retail Metering with Commodity](#)

BMP 1.4 Retail Conservation Pricing

[2.1 Public Information Programs](#)

[2.2 School Education](#)

BMP 3 - Residential

[3 Traditional / FlexTrack](#)

BMP 4 - CII

[4 Traditional / FlexTrack](#)

BMP 5 - Landscape

[5 Traditional / FlexTrack](#)

GPCD

BMP 1.4 Retail Conservation Pricing

Provisional Coverage Indication
[Online Help](#)

Submitted to CUWCC
7/10/2017 2:13:56 PM

Form Complete ? Form Status: Submitted

A. Implementation (Water Rate Structure)

Based on Rate Structure Not On Track
Based on Revenue Not On Track

Rate Structure Option	Customer Class Name	Total Revenue Commodity Charges	Total Revenue Customer Meter/Service (Fixed) Charges	New
Increasing Block	Single-Family	4,300,224.40	4,392,398.32	Edit Delete
Increasing Block	Multi-Family	679,303.50	369,055.93	Edit Delete
Increasing Block	Commercial	1,116,051.25	662,415.39	Edit Delete
Increasing Block	Industrial	473,930.15	56,962.89	Edit Delete
Increasing Block	Institutional	184,582.00	116,568.02	Edit Delete
Increasing Block	Dedicated Irrigation	833,630.88	310,683.66	Edit Delete
\$7,587,722.18			\$5,908,084.21	

B. Implementation Options (Compliance with Conservation Pricing Options (Water))

Please Select an Option

Option 1: Annual Revenue As Reported Option 2: Canadian Water Wastewater Assn Rate Design Model

Use 3 years average instead of most recent year

If CWWA is selected, please upload spreadsheet here.

NA

City of Tracy Water Management Plan

Page 9

c. Describe the contractor's record management system

The City utilizes Tyler Munis and Sensis to track the monthly read data and Harris Northstar for billing data. Electronic spreadsheets and hard copy meter asset tracking is also utilized for meter replacement scheduling and tracking.

H. Water Shortage Allocation Policies

1. Current year water shortage policies or shortage response plan - specifying how reduced water supplies are allocated

See Attachment D, Water Shortage Contingency Plan from the Tracy 2015 UWMP

2. Current year policies that address wasteful use of water and enforcement methods

See Attachment E, Tracy Municipal Code Chapter 11.28 Water Management

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

Discuss possible modifications to policies and solutions for improved water management

Possible modifications for improved water management would be to have year round conservation for outdoor landscaping such as 3 day a week watering. Also, eliminating mixed use metering.

SECTION 2 - INVENTORY OF WATER RESOURCES

A. Surface Water Supply

1. Surface water supplies in acre feet, imported and originating within the service area, by month (Table 1)

See Chapter 6, Water Inventory Tables, Table 1

2. Amount of water delivered to the district by each of the district sources for the last 10 years

See Chapter 6, Water Inventory Tables, Table 1

B. Groundwater Supply

1. Groundwater extracted by the district and delivered, by month (Table 2)

See Chapter 6, Water Inventory Tables, Table 2

2. Groundwater basin(s) that underlies the service area

Name	Size (Square Miles)	Usable Capacity (AF)	Safe Yield (AF/Y)
Tracy Subbasin	539	28,000	9,000

3. Map of district-operated wells and managed groundwater recharge areas

See Attachment B, for City Map of Groundwater Facilities

4. Description of conjunctive use of surface and groundwater

Conjunctive use, or any combination thereof. Though the City anticipates that its future groundwater management activities will include in lieu groundwater recharge and operation of its ASR program (see UWMP Section 5.4), the exact quantity of water demanded by such actions is unknown at this time, nor are such actions expected to increase the City's water demand. The City will continue to conjunctively manage its water resources by using groundwater for peaking purposes during the summer months. Such conjunctive management activities are not expected to impact the City's water demand.

5. Groundwater Management Plan

See Attachment F, City of Tracy 2015 UWMP Groundwater Management Plan

6. Groundwater Banking Plan

See Attachment G, City of Tracy 2015 UWMP Groundwater Banking Plan

C. Other Water Supplies

1. "Other" water used as part of the water supply – Describe supply

See Chapter 6, Water Inventory Tables, Table 1

Imported Surface Water Supply from South San Joaquin Irrigation District (SSJID) through the Nick Degroot Station.

D. Source Water Quality Monitoring Practices

1. Potable water quality (Urban only)

See Attachment H – City 2016 Consumer Confidence Report

2. Agricultural water quality concerns: [] Yes [] No

N/A

3. Description of the agricultural water quality testing program and the role of each participant, including the district, in the program

N/A

4. Current water quality monitoring programs for surface water by source (Agricultural only)

Analyses Performed	Frequency	Concentration Range	Average

Current water quality monitoring programs for groundwater by source (Agricultural only)

Analyses Performed	Frequency	Concentration Range	Average

E. Water Uses Within the District

1. Agricultural

N/A

2. Types of irrigation systems used for each crop in current year

Crop Name	Total Acres	Level Basin - Acres	Furrow - Acres	Sprinkler - Acres	Low Volume - Acres	Multiple Methods - Acres	Acres
Total							

3. Urban use by customer type in current year

Customer Type	Number of Connections	AF
Single-family	21931	8705.703897
Multi-family	650	1008.279
Commercial	693	1566.0483
industrial	30	798.7577
institutional	48	262.86053
Landscape irrigation	439	1594.7102
Wholesale		
Recycled		
Other (specify)		
Other (specify)		
Other (specify)		
Unaccounted for		15.857
Total		

4. Urban Wastewater Collection/Treatment Systems serving the service area

Treatment Plant	Treatment Level (1, 2, 3)	AF	Disposal to/Uses
Tracy Waste Water Treatment Plant	3	10,239.47	Middle River
	Total	10,239.47	
Total discharged to ocean and/or saline sink			

5. Groundwater recharge in current year (Table 6) NONE

Recharge Area	Method of Recharge	AF	Method of Retrieval
	Total		

6a. Transfers and exchanges **into** the service area in current year – (Table 1) NONE

From Whom	To Whom	AF	Use
	Total		

6b. Transfers and exchanges **out** of the service area in current year – (Table 6) NONE

From Whom	To Whom	AF	Use
	Total		

7. Wheeling, or other transactions in and out of the district boundaries – (Table 6) NONE

From Whom	To Whom	AF	Use
	Total		

8. Other uses of water NONE

Other Uses	AF

F. Outflow from the District (Agricultural only)

N/A

1. Surface and subsurface drain/outflow

Outflow Point	Location Description	AF	Type of Measurement	Accuracy (%)	% of Outflow	Acres Drained

Outflow Point	Where the Outflow Goes (Drain, River, or Other Location)	Type Reuse

2. Description of the Outflow (surface and subsurface) water quality testing program and the role of each participant in the program

N/A

3. Outflow (surface drainage & spill) Quality Testing Program

Analyses Performed	Frequency	Concentration Range	Average	Reuse Limitation

Outflow (subsurface drainage) Quality Testing Program

Analyses Performed	Frequency	Concentration Range	Average	Reuse Limitation

4. Provide a brief discussion of the District'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.

Districts 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 Water Inventory Table 7 and Addendum C (include in plan as Attachment J)

G. Water Accounting (Inventory)

Go To Chapter 5 for Agricultural Water Inventory Tables and Instructions.

[Go To Chapter 6 for Urban Water Inventory Tables and Instructions.](#)

SECTION 3 - BEST MANAGEMENT PRACTICES (BMPs) FOR AGRICULTURAL CONTRACTORS

A. Critical Agricultural BMPs

1. Measure the volume of water delivered by the district to each turnout with devices that are operated and maintained to a reasonable degree of accuracy, under most conditions, to +/- 6%

- a. Number of delivery points (turnouts and connections)
- b. Number of delivery points serving more than one farm
- c. Number of measured delivery points (meters and measurement devices)
- d. Percentage of water delivered to the contractor that was measured at a delivery point
- e. Total number of delivery points not billed by quantity
- f. Delivery point measurement device table

Measurement Type	Number	Accuracy* (+/-%)	Reading Frequency (Days)	Calibration Frequency (Months)	Maintenance Frequency (Months)
Orifices					
Propeller meter					
Weirs					
Flumes					
Venturi					
Metered gates					
Acoustic doppler					
Other (define)					
Total					

* Documentation verifying the accuracy of measurement devices must be submitted with Plan and included in Attachment C.

2. Designate a water conservation coordinator to develop and implement the Plan and develop progress reports

Name Title

Address

Telephone Email

Provide the job description and minimum qualifications

3. Provide or support the availability of water management services to water users
 - a. See Attachment H, Notices of District Education Programs and Services Available to Customers.

1. On farm irrigation and drainage system evaluations using a mobile lab type assessment

	Total in District	# Surveyed Last Year	# Surveyed in Current Year	# Projected for Next Year	# Projected 2nd Year in Future
irrigated Acres					
Number of Farms					

2. Timely field and crop-specific water delivery information to the water user

- b. Real-time and normal irrigation scheduling and crop ET information

- c. Surface, ground, and drainage water quantity and quality data provided to water users

- d. Agricultural water management educational programs and materials for farmers, staff, and the public

Program	Co-Funders (If Any)	Yearly Targets

See Attachment H for samples of provided materials and notices

- e. Other

4. Pricing structure - based at least in part on quantity delivered

Adopt a water pricing structure based on the measured quantity delivered

5. Evaluate and improve efficiencies of district pumps

Describe the program to evaluate and improve the efficiencies of the contractor's pumps

	Total in Districts	# Surveyed Last Year	# Surveyed in Current Year	# Projected for Next Year
Wells				
Lift Pumps				

B. Exemptible BMPs for Agricultural Contractors

(See Planner, Chapter 2, Addendum B for examples of exemptible conditions)

1. Facilitate alternative land use

Drainage Characteristic	Acreage	Potential Alternate Uses
Drainage Characteristic		
High water table (<5 feet)		
Poor drainage		
Groundwater Selenium concentration > 50 ppb		
Poor productivity		

Describe how the contractor encourages customers to participate in these programs

2. Facilitate use of available recycled urban wastewater

Sources of Recycled Urban Waste Water	AF/Y Available	AF/Y Currently Used in District

3. Facilitate the financing of capital improvements for on-farm irrigation systems

Program	Description

4. Incentive pricing

Describe incentive rate structure or other programs and purpose

- 5a. Line or pipe ditches and canals

Canal/Lateral (Reach)	Types of Improvement	Number of Miles in Reach	Estimated Seepage (AF/Y)	Accomplished/Planned Date

5b. Construct/line regulatory reservoirs

Reservoir Name	Location	Describe Improved Operational Flexibility and AF Savings

6. Increase flexibility in water ordering by, and delivery to, water users

See Attachment I, contractor 'agricultural water order' form

7. Construct and operate district spill and tailwater recovery systems

Distribution System Lateral	Annual Spill (AF/Y)	Quantity Recovered and Reused (AF/Y)
Total		

Drainage System Lateral	Annual Drainage Outflow (AF/Y)	Quantity Recovered and Reused (AF/Y)
Total		

Describe facilities that resulted in reduced spill and tailwater

8. Plan to measure outflow

Total # of outflow (surface) locations/points _____

Total # of outflow (subsurface) locations/points _____

Total # of measured outflow points _____

Percentage of total outflow (volume) measured during report year _____

Identify locations, prioritize, determine best measurement method/cost, submit funding proposal

Location & Priority	Estimated Cost (in \$1,000s)				
	Year 1	Year 2	Year 3	Year 4	Year 5

9. Optimize conjunctive use of surface and groundwater

Describe the potential for increasing conjunctive use of surface and groundwater

10. Automate distribution and/or drainage system structures

Identify locations where automation would increase delivery flexibility and reduce spill and losses. Describe program to achieve these benefits and estimate the annual water savings

11. Facilitate or promote water customer pump testing and evaluation

See Attachment H, Notices of District Education Programs and Services Available to Customers

12. Mapping

GIS Maps	Estimated Cost (in \$1,000s)				
	Year 1	Year 2	Year 3	Year 4	Year 5
Layer 1 – Distribution system					
Layer 2 – Drainage system					
Suggested layers:					
Layer 3 – Groundwater information					
Layer 4 – Soils map					
Layer 5 – Natural & cultural resources					
Layer 6 – Problem areas					

C. Provide a 5-Year Budget for Implementing BMPs

1. Amount actually spent during current year

Year 2018 or Year 1 BMP #	BMP Name	Budgeted Expenditure (not including staff time)	Staff Hours
A 1	Measurement	\$0	0
A2	Conservation staff	\$0	0
A3	On-farm evaluation/water delivery info irrigation Scheduling Water quality Agricultural Education Program	\$0 \$0 \$0 \$0	0 0 0 0
A4	Quantity pricing	\$0	0
A5	Contractor's pumps	\$0	0
B1	Alternative land use	\$0	0
B2	Urban recycled water use	\$0	0
B3	Financing of on-farm improvements	\$0	0
B4	Incentive pricing	\$0	0
B5	Line or pipe canals/install reservoirs	\$0	0
B6	Increase delivery flexibility	\$0	0
B7	District spill/tailwater recovery systems	\$0	0
B8	Measure outflow	\$0	0
B9	Optimize conjunctive use	\$0	0
B10	Automate canal structures	\$0	0
B11	Customer pump testing	\$0	0
B12	Mapping	\$0	0
	Total	\$0	0

2. Projected budget summary for the next year

Year 2019 or Year 2 BMP #	BMP Name	Budgeted Expenditure (not including staff time)	Staff Hours
A 1	Measurement	\$0	0
A2	Conservation staff	\$0	0
A3	On-farm evaluation/water delivery info irrigation Scheduling Water quality Agricultural Education Program	\$0 \$0 \$0 \$0	0 0 0 0
A4	Quantity pricing	\$0	0
A5	Contractor's pumps	\$0	0
B1	Alternative land use	\$0	0
B2	Urban recycled water use	\$0	0
B3	Financing of on-farm improvements	\$0	0
B4	Incentive pricing	\$0	0
B5	Line or pipe canals/install reservoirs	\$0	0
B6	Increase delivery flexibility	\$0	0
B7	District spill/tailwater recovery systems	\$0	0
B8	Measure outflow	\$0	0
B9	Optimize conjunctive use	\$0	0
B10	Automate canal structures	\$0	0
B11	Customer pump testing	\$0	0
B12	Mapping	\$0	0
	Total	\$0	0

3. Projected budget summary for the 3rd year

Year 2020 or Year 3 BMP #	BMP Name	Budgeted Expenditure (not including staff time)	Staff Hours
A 1	Measurement	\$0	0
A2	Conservation staff	\$0	0
A3	On-farm evaluation/water delivery info irrigation Scheduling Water quality Agricultural Education Program	\$0 \$0 \$0 \$0	0 0 0 0
A4	Quantity pricing	\$0	0
A5	Contractor's pumps	\$0	0
B1	Alternative land use	\$0	0
B2	Urban recycled water use	\$0	0
B3	Financing of on-farm improvements	\$0	0
B4	Incentive pricing	\$0	0
B5	Line or pipe canals/install reservoirs	\$0	0
B6	Increase delivery flexibility	\$0	0
B7	District spill/tailwater recovery systems	\$0	0
B8	Measure outflow	\$0	0
B9	Optimize conjunctive use	\$0	0
B10	Automate canal structures	\$0	0
B11	Customer pump testing	\$0	0
B12	Mapping	\$0	0
	Total	\$0	0

4. Projected budget summary for the 4th year

Year 2021 or Year 4 BMP #	BMP Name	Budgeted Expenditure (not including staff time)	Staff Hours
A 1	Measurement	\$0	0
A2	Conservation staff	\$0	0
A3	On-farm evaluation/water delivery info irrigation Scheduling Water quality Agricultural Education Program	\$0 \$0 \$0 \$0	0 0 0 0
A4	Quantity pricing	\$0	0
A5	Contractor's pumps	\$0	0
B1	Alternative land use	\$0	0
B2	Urban recycled water use	\$0	0
B3	Financing of on-farm improvements	\$0	0
B4	Incentive pricing	\$0	0
B5	Line or pipe canals/install reservoirs	\$0	0
B6	Increase delivery flexibility	\$0	0
B7	District spill/tailwater recovery systems	\$0	0
B8	Measure outflow	\$0	0
B9	Optimize conjunctive use	\$0	0
B10	Automate canal structures	\$0	0
B11	Customer pump testing	\$0	0
B12	Mapping	\$0	0
	Total	\$0	0

5. Projected budget summary for the 5th year

Year 2022 or Year 5 BMP #	BMP Name	Budgeted Expenditure (not including staff time)	Staff Hours
A 1	Measurement	\$0	0
A2	Conservation staff	\$0	0
A3	On-farm evaluation/water delivery info irrigation Scheduling Water quality Agricultural Education Program	\$0 \$0 \$0 \$0	0 0 0 0
A4	Quantity pricing	\$0	0
A5	Contractor's pumps	\$0	0
B1	Alternative land use	\$0	0
B2	Urban recycled water use	\$0	0
B3	Financing of on-farm improvements	\$0	0
B4	Incentive pricing	\$0	0
B5	Line or pipe canals/install reservoirs	\$0	0
B6	Increase delivery flexibility	\$0	0
B7	District spill/tailwater recovery systems	\$0	0
B8	Measure outflow	\$0	0
B9	Optimize conjunctive use	\$0	0
B10	Automate canal structures	\$0	0
B11	Customer pump testing	\$0	0
B12	Mapping	\$0	0
	Total	\$0	0

SECTION 4 - BEST MANAGEMENT PRACTICES FOR URBAN CONTRACTORS

A. Urban BMPs

Please see Attachment I – City of Tracy 2015 UWMP DMMs for the following information.

Foundational BMPs

1. Operations Programs

1.1. Operations Practices

A.1) Conservation Coordinator

A.2) Water waste prevention

A.3) Wholesale agency assistance programs

1.2. Water Loss Control

1.3. Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections

1.4. Retail Conservation Pricing

2. Education Programs

2.1. Public Information Programs

2.2. School Education Programs

Programmatic BMPs

3. Residential

A.1) Residential assistance program

A.2) Landscape water survey

A.3) High-efficiency clothes washers (HECWs)

A.4) WaterSense Specification (WSS) toilets

A.5) WaterSense Specifications for residential development

4. Commercial, Industrial, and Institutional (CII)

5. Landscape

B. Provide a 5-Year Budget for Expenditures and Staff Effort for BMPs

Please see ATTACHMENT J – City of Tracy 5 Year Budget for the following.

1. Amount actually spent during current year

Year 2016 or Year 1 BMP #	BMP Name	Budgeted Expenditure (not including staff time)	Staff Hours
1	Utilities Operations		
	1.1 Operations Practices	\$	
	1.2 Water Loss Control	\$0	0
	1.3 Metering	\$0	0
	1.4 Retail Conservation Pricing	\$2	0
2	Education Programs		
	2.1 Public information Programs	\$0	0
	2.2 School Education Programs	\$0	0
3	Residential	\$0	0
4	Cii	\$0	0
5	Landscape	\$0	0
	Total	\$0	0

2. Projected budget summary for 2nd year

Year 2017 or Year 2 BMP #	BMP Name	Budgeted Expenditure (not including staff time)	Staff Hours
1	Utilities Operations		
	1.1 Operations Practices	\$0	0
	1.2 Water Loss Control	\$0	0
	1.3 Metering	\$0	0
	1.4 Retail Conservation Pricing	\$0	0
2	Education Programs		
	2.1 Public information Programs	\$0	0
	2.2 School Education Programs	\$0	0
3	Residential	\$0	0
4	Cii	\$0	0
5	Landscape	\$0	0
	Total	\$0	0

3. Projected budget summary for 3rd year

Year 2018 or Year 3 BMP #	BMP Name	Budgeted Expenditure (not including staff time)	Staff Hours
1	Utilities Operations		
	1.1 Operations Practices	\$0	0
	1.2 Water Loss Control	\$0	0
	1.3 Metering	\$0	0
	1.4 Retail Conservation Pricing	\$0	0
2	Education Programs		
	2.1 Public information Programs	\$0	0
	2.2 School Education Programs	\$0	0
3	Residential	\$0	0
4	Cii	\$0	0
5	Landscape	\$0	0
	Total	\$0	0

4. Projected budget summary for 4th year

Year 2019 or Year 4 BMP #	BMP Name	Budgeted Expenditure (not including staff time)	Staff Hours
1	Utilities Operations		
	1.1 Operations Practices	\$0	0
	1.2 Water Loss Control	\$0	0
	1.3 Metering	\$0	0
	1.4 Retail Conservation Pricing	\$0	0
2	Education Programs		
	2.1 Public information Programs	\$0	0
	2.2 School Education Programs	\$0	0
3	Residential	\$0	0
4	Cii	\$0	0
5	Landscape	\$0	0
	Total	\$0	0

5. Projected budget summary for 5th year

Year 2020 or Year 5 BMP #	BMP Name	Budgeted Expenditure (not including staff time)	Staff Hours
1	Utilities Operations		
	1.1 Operations Practices	\$0	0
	1.2 Water Loss Control	\$0	0
	1.3 Metering	\$0	0
	1.4 Retail Conservation Pricing	\$0	0
2	Education Programs		
	2.1 Public information Programs	\$0	0
	2.2 School Education Programs	\$0	0
3	Residential	\$0	0
4	Cii	\$0	0
5	Landscape	\$0	0
	Total	\$0	0

CHAPTER 5 - AGRICULTURE WATER INVENTORY TABLES AND INSTRUCTIONS (as Requested in Criteria Section II.G)

The Agricultural Water Inventory should be entered on the MS Excel tables located at https://www.usbr.gov/mp/watershare/documents/Water_mgmt/index.html. Enter data in the white cells on the spreadsheets. Shaded cells are locked and cannot be changed.

Start by entering the data year (either the last complete calendar year or the last complete water year) in cell D1.

Table 1. Surface Water Supply (requested in Criteria Section ii.A. and ii.C.)

The numbers in this table should be the best information available on how much surface water actually entered the district distribution system. Make sure all the incoming surface water flows are represented. If necessary, define each water source with a descriptive title (e.g. San Joaquin River, DMC). Water transferred in, water returned from groundwater banks outside the district and small miscellaneous flows may be lumped together in the "Other" column and should also be defined. This table should not include urban recycled water or agricultural return water pumped back into the canals.

Year of Data 2017 Enter Data Year Here

2017 Month	Federal Ag Water (acre-feet)	Federal non-Ag Water (acre-feet)	State Water (acre-feet)	Local Water (define) (acre-feet)	Other Water (acre-feet)	Transfers Into District (acre-feet)	Upslope Drain Water	Total (acre-feet)
Method								
January	0	0	0	0	0	0	0	-
February	0	0	0	0	0	0	0	-
March	0	0	0	0	0	0	0	-
April	0	0	0	0	0	0	0	-
May	0	0	0	0	0	0	0	-
June	0	0	0	0	0	0	0	-
July	0	0	0	0	0	0	0	-
August	0	0	0	0	0	0	0	-
September	0	0	0	0	0	0	0	-
October	0	0	0	0	0	0	0	-
November	0	0	0	0	0	0	0	-
December	0	0	0	0	0	0	0	-
Total	-	-	-	-	-	-	-	-

Measured numbers for the water quantities detailed in these tables are expected. Select a method below that best describes the measurement method for each supply. Fill in the row marked "Method" with the appropriate measurement method type. If two methods are used for one supply, select the predominant one. If there is no flow rate or volumetric measurement, fill in the appropriate estimation method.

Method Definitions:

- M1 Measured summation from calibrated measuring devices, accurate to within +/- 6 percent
- M2 Measured summation from calibrated measuring devices
- M3 Measured summation from measuring devices
- C1 Calculated (more than summation) using information from calibrated devices (such as the difference between measurements upstream and downstream of diversion)
- C2 Calculated using information from measuring devices
- C3 Calculated using estimates from pump run-times and pump efficiency
- E1 Estimated using measured information from similar conditions
- E2 Estimated using historical information
- E3 Estimated using observation
- O1 Other (attach a note with descriptions of other methods used)

Table 2. Ground Water Supply (requested in Section ii.B.)

The numbers in this table for district pumping should be measured or calculated. For private pumping, an estimate of the volume pumped is normally used. If a yearly total is the best estimate available, it should be distributed over the months based on experience. Choose the appropriate measurement method from the definitions provided on page 5-1, and fill in the row marked "Method". The difference between district and private ground water is determined by how it was delivered. If the water is pumped from private wells into the district distribution system, and sold by the district, then it should be included as district ground water.

2017 Month	District Groundwater (acre-feet)	Private Agric Groundwater (acre-feet)*
Method		
January	0	0
February	0	0
March	0	0
April	0	0
May	0	0
June	0	0
July	0	0
August	0	0
September	0	0
October	0	0
November	0	0
December	0	0
Total	0	0

* normally estimated

Table 3. Total Water Supply (requested in Section ii.A., ii.B., and ii.C.)

Except for "Recycled M&I Wastewater" the information in this Table was entered in Tables 1 and 2. If you are using the supplied spreadsheet, all the numbers previously entered are automatically copied to this table, as indicated by light gray boxes. The "Recycled M&I Wastewater" column should be filled out only for M&I recycled wastewater that is delivered into a District Distribution System. Fill in the measurement method type using the definitions provided on page 5-1.

2017 Month	Surface Water Total (acre-feet)	District Groundwater (acre-feet)	Recycled M&I Wastewater (acre-feet)	Total District Water Supply (acre-feet)
Method				
January	-	-	0	-
February	-	-	0	-
March	-	-	0	-
April	-	-	0	-
May	-	-	0	-
June	-	-	0	-
July	-	-	0	-
August	-	-	0	-
September	-	-	0	-
October	-	-	0	-
November	-	-	0	-
December	-	-	0	-
Total	-	-	-	-

* Recycled M&I Wastewater is treated urban wastewater that is used for agriculture.

Table 4. Distribution System (requested in Section ii.G., part 2)

Enter the monthly precipitation for the current year in the Precipitation Worksheet, column C rows 71-82. Enter the monthly evaporation for the current year in the Evaporation Worksheet, column W rows 71-82.

2017 Precipitation Worksheet				2017 Evaporation Worksheet				
	inches precip	ft precip	acres	AF/Year	inches evap	ft evap	acres	AF/Year
Jan	0.0	-	-	-	Jan	-	-	-
Feb	0.0	-	-	-	Feb	-	-	-
Mar	0.0	-	-	-	Mar	-	-	-
Apr	0.0	-	-	-	Apr	-	-	-
May	0.0	-	-	-	May	-	-	-
Jun	0.0	-	-	-	Jun	-	-	-
Jul	0.0	-	--	Jul	-	-	-	Aug
	0.0	-	-		Aug	-	-	-
Sept	0.0	-	-	-	Sept	-	-	-
Oct	0.0	-	-	-	Oct	-	-	-
Nov	0.0	-	-	-	Nov	-	-	-
Dec	0.0	-	-	-	Dec	-	-	-
Total	0.0	0.00			Total	0	0.00	

Table 4. Agricultural Distribution System

The first column should have the name or number of part of the distribution system, such as Canal T-2, or Section 4 laterals. In the "Length" and "Width" columns, enter the length and average width of those canals and the reservoirs and the surface area will be automatically calculated. The "Precipitation" and "Evaporation" columns will also auto fill. In the "Spillage" column, enter the estimated amount of unrecovered spillage from those canals. Spillage is recovered if it reenters the distribution system later. Enter estimated annual seepage for each unlined portion of the distribution system, storage or regulating reservoir.

2017 Canal, Pipeline, Lateral, Reservoir	Length (feet)	Width (feet)	Surface Area (square feet)	Precipi-tation (acre-feet)	Evapo-ration (acre-feet)	Spillage (acre-feet)	Seepage (acre-feet)	Total (acre-feet)
	0	0	0	0.0	0.0	0	0	0
	0	0	0	0.0	0.0	0	0	0
	0	0	0	0.0	0.0	0	0	0
	0	0	0	0.0	0.0	0	0	0
	0	0	0	0.0	0.0	0	0	0
	0	0	0	0.0	0.0	0	0	0
	0	0	0	0.0	0.0	0	0	0
	0	0	0	0.0	0.0	0	0	0
	0	0	0	0.0	0.0	0	0	0
	0	0	0	0.0	0.0	0	0	0
Total				0.0	0.0	0	-	0

Table 5. Crop Water Needs

The first column should list the crops grown in the district (use the crop list provided in Attachment D of the Planner). For each crop, provide the irrigated acres, crop evapotranspiration (ETcrop), leaching requirement, and water used for cultural practices (frost protection, pre-irrigation, etc.). Table 5 will combine these values to determine the total water demand of each crop. You may wish to combine crops grown on less than 5% of the total irrigated acreage. To combine crops, determine an average ETcrop leaching and cultural requirement for this group of small acreage crops. It is possible for the total irrigated acres to exceed the size of the district due to double cropping. The ETcrop for crops in your area can be found using the California irrigation Management information System (CIMIS) at <http://www.cimis.water.ca.gov/cimis/info.jsp>, Department of Water Resources (DWR) CIMIS Database, www.waterright.org, or obtained from the local farm advisor. The University of California Cooperative Extension (UCCE) can also provide information on coefficients required to determine ETcrop and estimating water used for leaching and cultural practices.

2017 Crop Name	Area (crop acres)	Crop ET (AF/Ac)	Leaching Requirement (AF/Ac)	Cultural Practices (AF/Ac)	Effective Precipitation (AF/AC)	Appl. Crop Water Use (acre-feet)
	0	0.0	0.0	0.0	0.0	0
	0	0.0	0.0	0.0	0.0	0
	0	0.0	0.0	0.0	0.0	0
	0	0.0	0.0	0.0	0.0	0
	0	0.0	0.0	0.0	0.0	0
	0	0.0	0.0	0.0	0.0	0
	0	0.0	0.0	0.0	0.0	0
	0	0.0	0.0	0.0	0.0	0
	0	0.0	0.0	0.0	0.0	0
	0	0.0	0.0	0.0	0.0	0
	0	0.0	0.0	0.0	0.0	0
	0	0.0	0.0	0.0	0.0	0
	0	0.0	0.0	0.0	0.0	0
	0	0.0	0.0	0.0	0.0	0
	0	0.0	0.0	0.0	0.0	0
	0	0.0	0.0	0.0	0.0	0
	0	0.0	0.0	0.0	0.0	0
	0	0.0	0.0	0.0	0.0	0
	0	0.0	0.0	0.0	0.0	0
	0	0.0	0.0	0.0	0.0	0
	0	0.0	0.0	0.0	0.0	0
	0	0.0	0.0	0.0	0.0	0
Crop Acres	0			0.0	0.0	0

Total Irr. Acres _____ (If this number is larger than your known total, it may be due to double cropping.)

Table 6. 2014 District Water Budget (requested in Section 2)

Much of the data for this table is copied from the previous tables.

- **Riparian ET** - Estimate the annual consumptive use by riparian vegetation inadvertently or intentionally supplied with district water. Do not include riparian vegetation located at an environmental or recreational resource. Estimate the total acres of riparian vegetation and an average water-use rate to obtain an estimate of consumptive use (based on ET during the months when water is available). Information may also be available from local farm advisors and neighboring districts.
- **Groundwater Recharge** - Quantify water used by the contractor for the purposeful recharge of groundwater, including recharge ponds and injection wells.
- **Transfers/trades/wheeling** – The amount of water the district sold or traded outside the district service area, not listed in Table 1. This will be a negative number.
- **Non-Agricultural Deliveries** - Quantify water delivered that was not used for commercial agricultural practices. This includes deliveries to homes and ranches for residential use, deliveries for commercial and industrial uses, and deliveries to municipal water districts.
- **Actual Agricultural Water Sales** - From district records, quantify the water that was delivered for application to the land. Compare this number with the "Water Available for Sale to Agricultural Customers" calculated on the previous line. If there is significant difference, look for data gaps.
- **Drain Water Outflow** - Quantify the drainwater that leaves the district boundaries from surface ditches or through drainpipes. While an estimate is acceptable, if the estimate exceeds 100 AF per year per outflow location, installation of an outflow measurement device is highly recommended. Reliable outflow data is a best management practice and one of the key components of an accurate water inventory. Districts are now required to begin planning for outflow measurement.
- **Percolation from Agricultural Land** - A rough estimate of the amount of water applied to the land that continues down past the root zone (deep percolation). This value is calculated by the formulas in the spreadsheet.

Water Supply	Table 3	-
Riparian ET	(Distribution and Drain)	minus
Groundwater recharge	intentional - ponds, injection	minus
Seepage	Table 4	minus
Evaporation - Precipitation	Table 4	minus
Spillage	Table 4	minus
Transfers out of District		minus
Water Available for sale to customers		-
Actual Agricultural Water Sales 2014	From District Sales Records	-
Private Groundwater	Table 2	plus
Crop Water Needs	Table 5	minus
Drainwater outflow	(tail and tile, not recycled)	minus
Percolation from Agricultural Land	(calculated)	0
Unaccounted for Water	(calculated)	0

Table 7. Influence on Ground Water and Saline Sink

The first part of this table compares the estimated influence on groundwater levels from the district with the actual change in the groundwater storage. There may be a large difference in the quantities. The comparison indicates the impact of district operation on groundwater.

The second part estimates the water that flows to a perched water table or saline sink and is no longer available for use. Examples are flows to evaporation ponds, saline groundwater, or perched water tables where the water is not reused. Implementing BMPs could minimize this “lost” water. In some cases, this lost water may be beneficial in some other way. Districts should provide a statement about how much of this lost water may be “savable” if improvements were funded. This statement will help Reclamation and the district find the most effective areas to apply conservation program funds.

2017		
Agric Land Deep Perc + Seepage + Recharge - Groundwater Pumping = District Influence on		0
Estimated actual change in groundwater storage, including natural recharge		0
irrigated acres (from Table 5)		0
Irrigated acres over a perched water table		0
irrigated acres draining to a saline sink		0
Portion of percolation from agri seeping to a perched water table		0
Portion of percolation from agri seeping to a saline sink		0
Portion of On-Farm Drain water flowing to a perched water table/saline sink		-
Portion of Dist. Sys. seep/leaks/spills to perched water table/saline sink		-
Total (AF) flowing to a perched water table and saline sink		-

Table 8. Annual Water Quantities Delivered Under Each Right or Contract (requested in Section ii.A. and ii.C.)

Quantify the amount of each type of surface water the District actually received in each of the last 10 years. If the District has sources of surface water that are not listed in the table, add the necessary data in the “Other” column.

Year	Federal Ag Water (acre-feet)	Federal Non-Ag Water (acre-feet)	State Water (acre-feet)	Local Water (acre-feet)	Water (define) (acre-feet)	Transfers into District (acre-feet)	Upslope Drain Water (acre-feet)	Total (acre-feet)
2005	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0

CHAPTER 6 - URBAN WATER INVENTORY TABLES AND INSTRUCTIONS

Year of Data **Enter data year here**

Table 1

Surface Water Supply

(requested in Criteria Section ii.A. and ii.C.)

2016 Month	Federal Urban Water (acre-feet)	Federal Agric. Water (acre-feet)	State Water (acre-feet)	Local Water (acre-feet)	Other Water (SSJID) (acre-feet)	Total (acre-feet)
METHOD	M1				M1	
January	0				957	957
February	0				922	922
March	0				674	674
April	5				840	845
May	488				743	1,231
June	620				1,086	1,706
July	682				1,167	1,849
August	618				979	1,597
September	403				1,145	1,548
October	332				1,038	1,370
November	193				814	1,007
December	0				1,007	1,007
TOTAL	3,341	0	0	0	11,372	14,713

Table 2

Ground Water Supply

(Requested in Section ii.B.)

2016 Month	City Grndwtr (acre-feet)	Private Grndwtr (acre-feet)
January	(165)	n/a
February	(155)	n/a
March	215	n/a
April	200	n/a
May	130	n/a
June	5	n/a
July	31	n/a
August	308	n/a
September	214	n/a
October	9	n/a
November	23	n/a
December	(167)	n/a
TOTAL	648	0

(injecting into ASR)

Table 3

Total Water Supply

(requested in Section ii.A., ii.B. and ii.C.)

2016 Month	Surface Water Supply (acre-feet)	City Groundwater (acre-feet)	Recycled M&I (acre-feet)	Total District Water Supply (acre-feet)
METHOD	M1	M1		M1
January	957	(165)	0	792
February	922	(155)	0	767
March	674	215	0	889
April	845	200	0	1,045
May	1,231	130	0	1,361
June	1,706	5	0	1,711
July	1,849	31	0	1,880
August	1,597	308	0	1,905
September	1,548	214	0	1,762
October	1,370	9	0	1,379
November	1,007	23	0	1,030
December	1,007	(167)	0	840
TOTAL	14,713	648	0	15,361

Recycled wastewater is treated urban wastewater that is reused

Table 4

Distribution System

(requested in Section ii.G., part 2)

2016 Area or Line	Length (feet)	Leaks (acre-feet)	Breaks (acre-feet)	Flushing/Fire (acre-feet)	Total (acre-feet)
6" Main	1,061,160	13	3	3	18
8" Main	496,320	7	1	2	10
10" Main	264,000	4	1	1	5
12" Main	200,640	2	5	1	8
14" Main	52,800	1	0	0	1
24" Main	79,200	1	0	0	1
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
TOTAL	2,154,120	27	10	6	43

Table 5

2016 District Water Inventory

(requested in Section ii.G.)

Water Supply	Table 3	15,361
Environmental Consumptive Use	minus	0
Groundwater Recharge (Perc ponds & recharge wells)	minus	0
Water Exchanges or Transfers (into or out of the district)	minus / plus	0
Flushing / Fire	Table 4b minus	6
Distribution System Leaks & Breaks	Table 4b minus	37
Non-Urban (Agricultural) Deliveries	<2,000 AF minus	0
	Water Supply Available for Sale	15,318

2016

Actual M&I Water Sales	From District Records	14,702
Inside Use	Feb use x 12 minus	9,204
Landscape / Outside Use	(calculated)	5,498
Unaccounted for Water	(calculated)	616

Table 6

Annual Water Quantities Delivered Under Each Right or Contract

(requested in Section ii.A. and ii.C.)

Year	Federal Urban Water (acre-feet)	Federal Agric. Water (acre-feet)	State Water (acre-feet)	Local Water (acre-feet)	Transfers into City (acre-feet)	Other Water (SSJID) (acre-feet)	Total (acre-feet)
2007	6,824	0	0	0	0	9,130	15,954
2008	6,881	0	0	0	0	8,017	14,898
2009	5,328	0	0	0	0	10,401	15,729
2010	5,723	0	0	0	0	10,850	16,573
2011	5,316	0	0	0	0	11,793	17,109
2012	5,416	0	0	0	0	12,294	17,710
2013	5,518	0	0	0	0	13,112	18,630
2014	4,609	0	0	0	0	11,515	16,124
2015	3,778	0	0	0	0	10,329	14,107
2016	3,341	0	0	0	0	11,372	14,713
Total	52,734	0	0	0	0	108,813	161,547
Average	5,273	0	0	0	0	10,881	16,155

ATTACHMENT A

ANTICIPATED LAND USE CHANGES

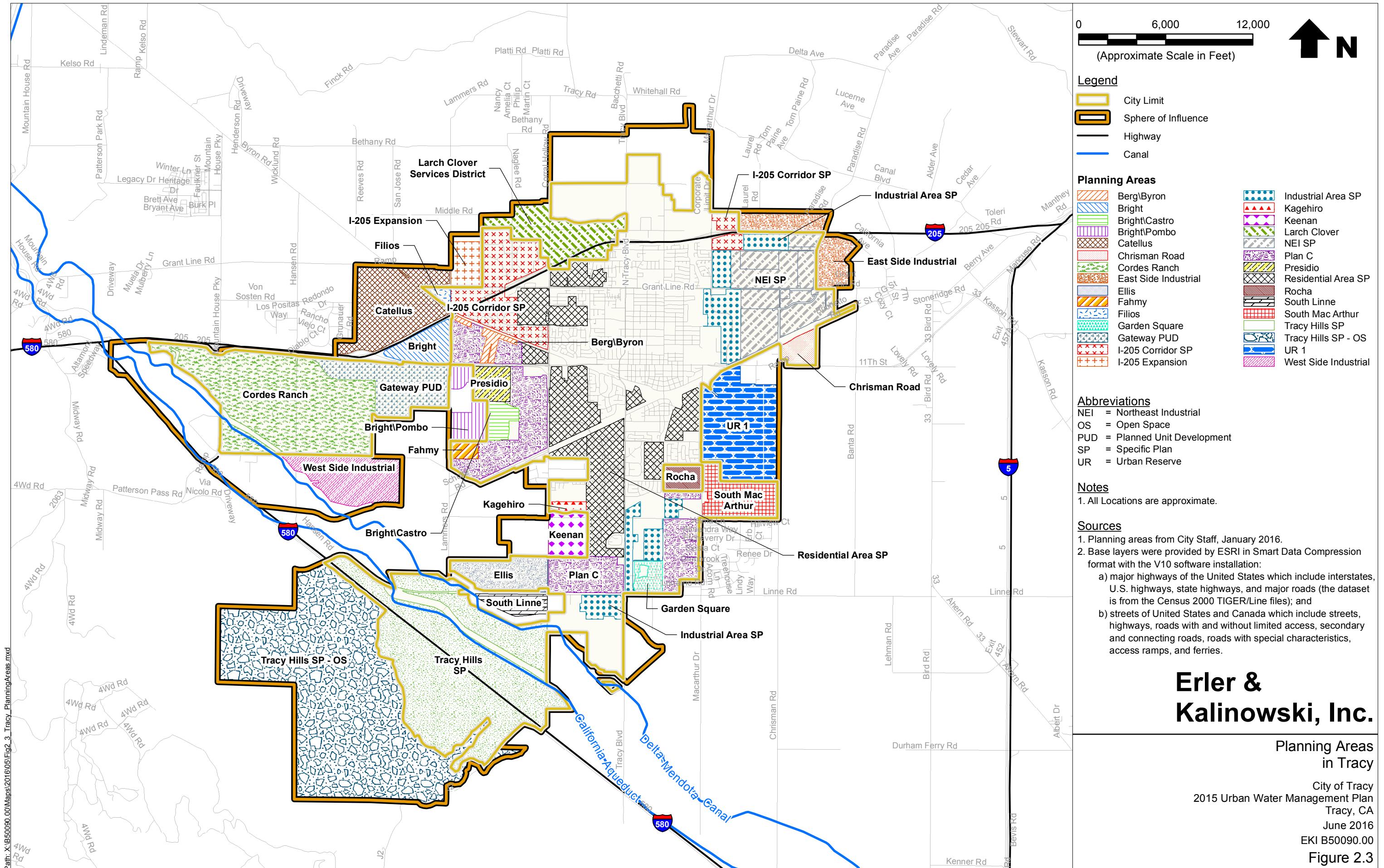
ATTACHMENT A

Required in Section 1.A.5 Anticipated Land-Use Changes:

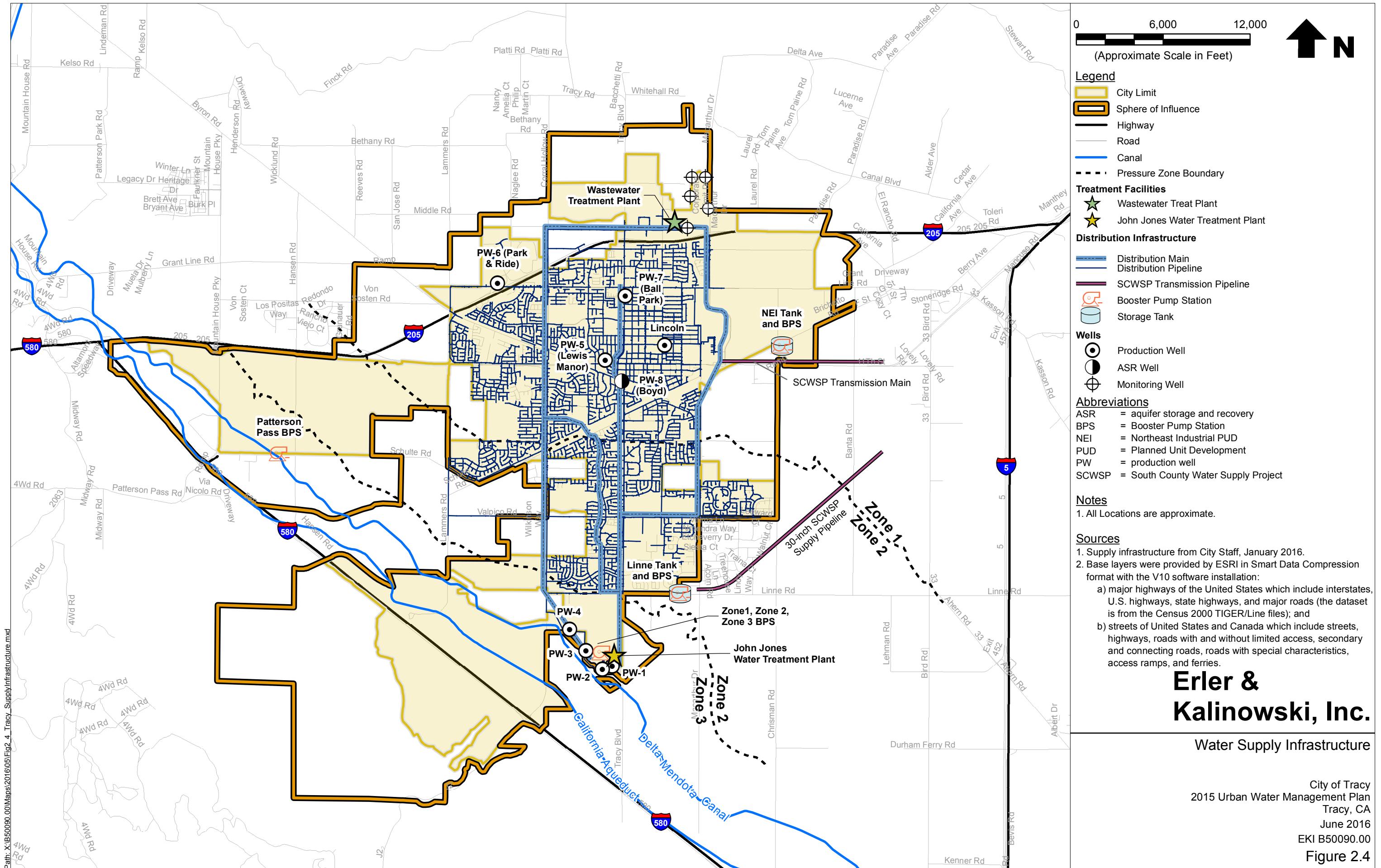
- Residential Areas Specific Plan. Created in 1987, the Plan guides the development of 1,480 acres within the City limits. The land is grouped into three planning areas or neighborhoods, two on the southern side of the City and one in the northwest. These areas are largely built-out.
- Plan C. Formed in 1998, Plan C represents an infrastructure financing area comprised of approximately 1,417 acres located in the west, south and southeast portions of the City. Plan C is comprised of several separate PUDs that are designed to guide the development of single-family homes with accompanying parks and schools. Plan C is largely built-out; however, there are several vacant parcels zoned for multifamily housing and commercial development.
- I-205 Corridor Specific Plan. The I-205 Corridor Specific Plan includes approximately 714 acres of land on the northwest and northeast sides of Tracy, adjacent to Interstate 205. The Specific Plan includes development of shopping centers, auto plazas, and light industrial uses. The Plan also includes approximately 200 acres of residential development.
- Northeast Industrial Specific Plan. Anticipated land uses on the 870-acre Northeast Industrial Specific Plan in the northeast corner of the City include a mixture of manufacturing, warehousing, and distribution uses including rail-dependent industries and “flex-tech” light industrial.
- Industrial Areas Specific Plan. The Industrial Areas Specific Plan covers approximately 685 acres of land, mostly in the northeast quadrant of the South Tracy Boulevard-Linne Road intersection and the northeast quadrant of the MacArthur Drive-Eleventh Street intersection. This area is designated for general, light industrial, office, and “flex-tech” uses. The Edgewood Corporate Center and South Tracy Business Park, which cater to small-to medium-sized companies, have already been developed in the ISP area.
- Gateway PUD. The 538-acre Tracy Gateway project is located at the western edge of the incorporated City boundary, south of Interstate 205 at the Eleventh Street off-ramp. The proposed development consists of 5.8 million square feet of office, commercial, and retail uses, including a multi-story hotel and a golf course.
- Tracy Hills Specific Plan. The Tracy Hills Specific Plan area, located on the southwest side of the City, includes 6,175 acres. Of the 2,700 acres within the City limits, proposed land uses include approximately 1,300 acres at a mixture of densities with a maximum of 5,499 residential units. Approximately 600 acres with up to six million square feet of space are planned for commercial, office and industrial uses. Roughly half of the remaining 800 acres of the Specific Plan area within the City limits is designated to accommodate neighborhood parks, schools, recreational uses and other open space, while the other half is devoted to roads and canals. The remainder of the Specific Plan area (approximately 3,550 acres located outside the City limits and within the SOI), is planned to remain permanent open space for habitat conservation and managed grazing.
- Ellis Specific Plan. The Ellis Specific Plan, located at the northwest corner of Corral Hollow and Linne Roads, consists of 321 acres of Traditional Residential and Commercial land uses, allowing for up to 2,250 residential units and a Village Center commercial site. The proposed project also includes parks and a family-oriented swim center.
- Cordes Ranch. Cordes Ranch has been added to the SOI, is referred to as “Urban Reserve 6” and is 1,730 acres in size. The majority of the property is designated for industrial uses. The vision for the area is that the industrial uses would occupy the interior portions of the property, while the properties abutting Mountain House Parkway and Interstate 205 would consist of higher identity businesses with an emphasis on commercial, low-rise office and office/flex uses.

ATTACHMENT B

CITY OF TRACY UWMP WATER SUPPLY INFRASTRUCTURE MAP



ATTACHMENT B



ATTACHMENT C

COUNCIL RESOLUTION
ADOPTING THE 2017
CITY OF TRACY
WATER MANAGEMENT
PLAN

ATTACHMENT D

CITY OF TRACY

2015 UWMP

**WATER SHORTAGE
CONTINGENCY PLAN**

7. WATER SHORTAGE CONTINGENCY PLANNING

This section presents the City's Water Shortage Contingency Plan (WSCP), which has been developed to serve as a flexible framework of planned response measures to mitigate future water supply shortages. The City adopted its first WSCP in 1992 to provide City staff and City water customers with guidelines for reducing water consumption in the event of another drought (Kennedy/Jenks, 1992). The City's WSCP was updated in June 2015 via Ordinance 1196 to incorporate the mandatory prohibitions required by the SWRCB and provide the City with additional tools to meet the SWRCB-mandated 28% conservation standard. This WSCP, which is included in Appendix P and adopted as part of this UWMP, builds upon and supersedes the 2015 WSCP. The updates made to the 2015 WSCP reflect lessons learned during the recent drought and are intended to improve the City's ability to respond effectively and efficiently in the event of a future water supply shortage or emergency.

The City's 2015 WSCP is incorporated into the Water Management Chapter of the TMC as codified in Chapter 11.28, Article 5 - Drought and Other Water Emergency, and Article 6 – Water Conservation and Rationing Plan, Water Emergency Plan, Variances and Appeals.

7.1 GUIDING PRINCIPLES

The City's WSCP has been developed to support the broader vision of the City laid out in the General Plan. Among other things, the General Plan emphasizes the importance of "hometown feel", community livability, quality of life, and increased economic development. To that end, the City's WSCP reflects the following set of guiding principles:

- Prioritize the reduction of non-essential water uses. This WSCP concentrates on the reduction of non-essential water uses and gives the highest priority to preserving water uses that are essential to the health, safety, welfare, and economic vitality of the City's customers.
- Water cutbacks will focus on outdoor water use. Outdoor water use is an important, but relatively discretionary end use in comparison to indoor water uses related to drinking, cooking, and sanitary activities. Outdoor water use supplied with recycled water, however, may not need to be cut back as ample supplies of recycled water are likely to be available even during a drought.
- Focus on fewer, enforceable requirements. This WSCP targets end uses that can offer significant savings with a high degree of enforceability, such as dedicated irrigation accounts.
- Communicate early, penalize later. Early stages focus on creating public awareness and signalling the need for conservation, whereas later stages impose stricter requirements and increase penalties and enforcement.

Practically, these principles guide the City to ask for a shared contribution from all of its customers towards meeting water reduction goals during periods of water shortage. They further direct the City to focus its water conservation efforts on reducing discretionary water

uses such as outdoor irrigation, while attempting to minimize economic and other impacts to its residential and commercial customers. The City learned during the recent drought that public outreach and awareness are capable of generating significant savings in response to a severe drought. Therefore, this WSCP emphasizes these activities before it mandates specific water-conserving actions.

7.2 METHODOLOGY

To assist in development of the WSCP, the City used the Drought Response Tool (DRT),³⁶ an Excel spreadsheet model. The DRT provides a quantitative framework that allowed the City to:

- Evaluate a pre-drought baseline water use by each water use sector and major end use (i.e., indoor versus outdoor water use);
- Identify water use sectors and end uses to target for water savings;
- Evaluate a menu of drought response actions to implement in each stage of action; and
- Estimate the water savings potential of the responses selected for each stage of action based on assumed implementation and water savings rates.

Data inputs to the DRT are largely consistent with data that has been reported herein and to the SWRCB in response to Resolution 2015-0032 via the DRINC Portal (www.drinc.ca.gov), including total production, residential water use, and population. The Drought Response Actions section of the DRT is designed to be highly modifiable, in order to allow users to explore the potential water savings associated with implementing different sets of actions, based on varying levels of implementation, and their understanding of their own community and the water savings potential. A detailed Drought Response Tool User's Guide is provided in Appendix Q, which walks the user through the model structure, and the key input parameters, assumptions, and calculations that form the basis for the DRT.

7.3 BASELINE WATER USE PROFILE

Using the DRT, the City developed a pre-drought baseline water use profile that reflected usage patterns within the City's service area by major water use sector between 2011 and 2014 (selected as a representative "pre-drought" period) and that was used to guide development of the WSCP. Key findings from this analysis are presented below.

Residential Per Capita Demand

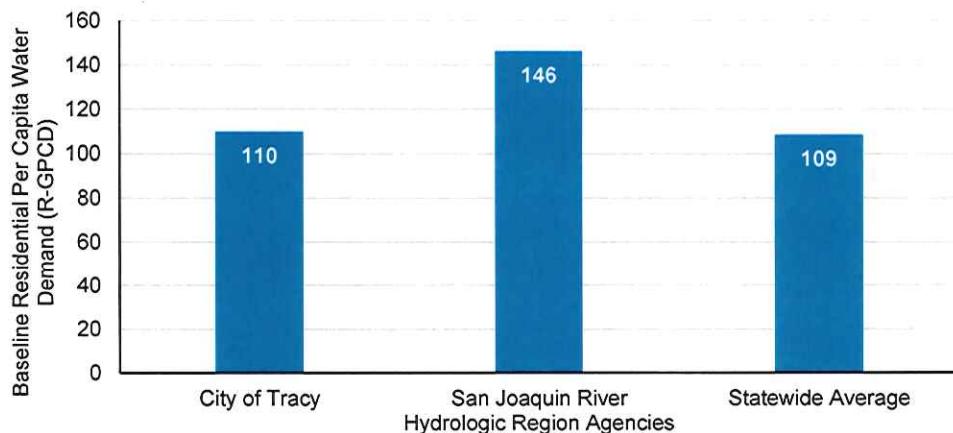
The City's baseline residential gallons per capita per day (R-GPCD) demand between 2011 and 2014 was approximately 110 R-GPCD. As shown in Table 7-1 and associated chart, this R-GPCD is slight greater than the statewide average of 109 GPCD in 2013 but is significantly less than the average R-GPCD of fellow suppliers in the San Joaquin River Hydrologic Region in 2013 (146 R-GPCD).

³⁶ ©2015 Erler & Kalinowski, Inc.

Table 7-1
Baseline (2011-2014) Residential Per Capita Water Demand
 City of Tracy, California

	Residential Per Capita Water Demand (R-GPCD)
City of Tracy (a)	110
San Joaquin River Hydrologic Region Agencies (b)	146
Statewide Average (b)	109

Baseline (2011-2014) Residential Per Capita Water Demand



Abbreviations:

R-GPCD = residential gallons per capita per day

Notes:

- (a) Average City of Tracy R-GPCD between 2011 and 2014 calculated using metering data.
- (b) Average R-GPCD for San Joaquin River Region and average statewide R-GPCD for 2013 calculated using residential water use and population provided in Reference 1.

Reference:

- (1) State Water Resources Control Board Water Conservation Portal - Conservation Reporting
http://www.waterboards.ca.gov/water_issues/programs/conservation_portal/conservation_reporting.shtml
 Accessed 3 March 2016.

Proportion of Outdoor Water Use

As shown on Table 7-2 and the associated charts, outdoor water use, which can generally be considered as a “discretionary water use”, was estimated to be approximately 44% of the City’s total consumption during this pre-drought time period. The high proportion of outdoor water use within both residential and commercial sectors (37% and 47%, respectively) indicates that there is the potential achieve significant water savings across these sectors, simply by focusing on outdoor uses. As further shown in the Table 7-2 and associated charts, the seasonal variation in baseline water use reflects increased irrigation demands during the summer and fall months. Therefore, the greatest potential for reductions in non-essential water use are expected during these months.

Historical Drought Response

As described below, water savings achieved by City during 2015 in response to the recent historic drought support the findings of the baseline water use profile (i.e., that discretionary uses can be targeted to achieve significant water savings).

As discussed in Section 3.1.1.3, the Governor and the SWRCB played a fundamental role in promoting and requiring water conservation across the state. On 1 April 2015, Governor Brown issued the fourth in a series of Executive Orders regarding actions necessary to address California’s severe drought conditions. Executive Order B-29-15 directed the SWRCB to impose the first-ever mandatory restrictions on urban water suppliers to achieve a statewide 25% reduction in potable urban water usage through February 2016.³⁷ The Executive Order also requires CII users to implement water efficiency measures, prohibits irrigation with potable water of ornamental turf in public street medians, and prohibits irrigation with potable water outside newly constructed homes and buildings that is not delivered by drip or microspray systems, along with numerous other directives.

On 5 May 2015, the SWRCB adopted Resolution 2015-0032, which mandates minimum actions by water suppliers and their customers to conserve water supplies into 2016 and assigns a mandatory water conservation savings goal to each water supplier based on their R-GPCD. On 2 February 2016, the SWRCB voted to extend the emergency regulations until October 2016 with some modifications.³⁸ The mandatory conservation standards established by the SWRCB and included in CWC §865(c) range from 8% for suppliers with an R-GPCD below 65 R-GPCD, up to 36% for suppliers with an R-GPCD of greater than 215 GPCD. As with the emergency drought regulations adopted by the SWRCB in 2014, the new water conservation regulation was primarily intended to reduce outdoor urban water use. Based on its R-GPCD, the City was required to reduce water use by 28% in 2015 relative to its 2013 water use.³⁹

³⁷ Executive Order B-29-15 is located online at https://www.gov.ca.gov/docs/11.13.15_EO_B-36-15.pdf, accessed 2 March 2016.

³⁸ Adopted text of the extended Emergency Regulations located online at http://www.waterboards.ca.gov/water_issues/programs/conservation_portal/docs/emergency_reg/final_reg_enacted.pdf, accessed 2 March 2016

³⁹ As discussed in Section 3.1.1.3, the City has qualified for a climate adjustment to its mandatory conservation standard, which has been reduced by 3%, from 28% to 25%, effective 1 March 2016.

CITY OF TRACY
2015 URBAN WATER MANAGEMENT PLAN



Table 7-2
Baseline (2011-2014) Water Use Profile
City of Tracy, California

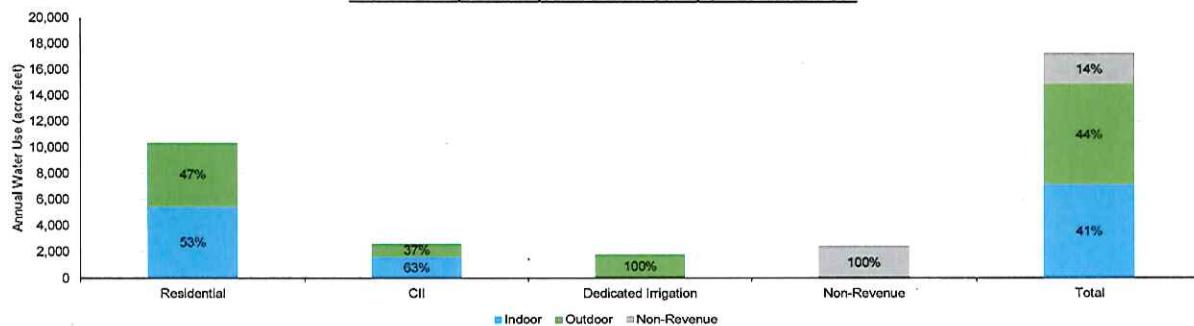
Sector	End-Use	Baseline (2011-2014) Average Water Use (acre-feet) (a)												Annual % of Total by Sector	
		January	February	March	April	May	June	July	August	September	October	November	December		
Residential	Indoor (b)	469	423	469	453	469	453	469	469	453	469	453	469	5,517	53%
	Outdoor (b)	336	162	162	226	285	754	728	848	618	504	253	0	4,876	47%
	<i>Subtotal Residential</i>	<i>805</i>	<i>585</i>	<i>631</i>	<i>680</i>	<i>754</i>	<i>1,208</i>	<i>1,197</i>	<i>1,316</i>	<i>1,071</i>	<i>972</i>	<i>706</i>	<i>469</i>	<i>10,393</i>	-
CII	Indoor (b)	142	128	142	137	142	137	142	142	137	142	137	142	1,672	63%
	Outdoor (b)	74	50	39	47	9	156	161	167	106	99	64	0	973	37%
	<i>Subtotal CII</i>	<i>216</i>	<i>179</i>	<i>181</i>	<i>185</i>	<i>151</i>	<i>294</i>	<i>303</i>	<i>309</i>	<i>243</i>	<i>241</i>	<i>202</i>	<i>142</i>	<i>2,645</i>	-
Dedicated Irrigation	Outdoor	42	59	51	78	112	256	333	272	243	210	119	66	1,842	100%
Non-Revenue	Non-Revenue	-35	135	217	359	823	205	211	61	108	64	57	243	2,450	100%
Total	Indoor	611	551	611	591	611	591	611	611	591	611	591	611	7,189	41%
	Outdoor	452	271	252	352	407	1,166	1,223	1,288	967	813	436	66	7,692	44%
	Non-Revenue	-35	135	217	359	823	205	211	61	108	64	57	243	2,450	14%
	<i>Total</i>	<i>1,028</i>	<i>958</i>	<i>1,080</i>	<i>1,302</i>	<i>1,840</i>	<i>1,962</i>	<i>2,044</i>	<i>1,959</i>	<i>1,666</i>	<i>1,488</i>	<i>1,084</i>	<i>919</i>	<i>17,330</i>	-

CITY OF TRACY
2015 URBAN WATER MANAGEMENT PLAN

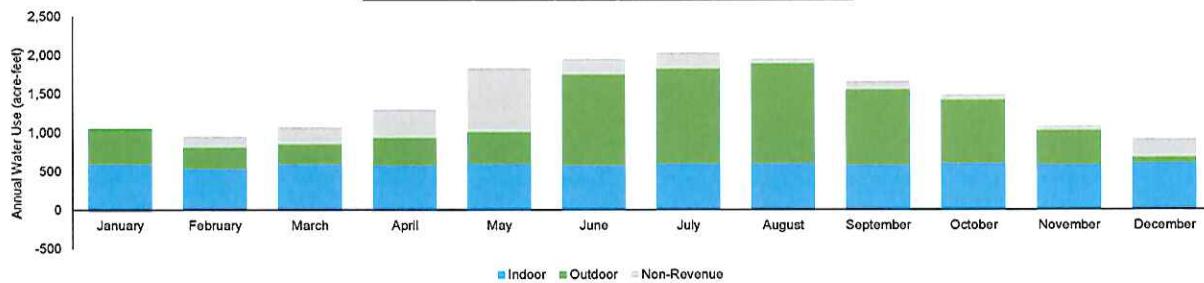


Table 7-2 (Continued)
Baseline (2011-2014) Water Use Profile
City of Tracy, California

Baseline Year (2011-2014) Annual Water Use by Sector and End Use



Baseline Year (2011-2014) Monthly Indoor vs. Outdoor Water Use



CITY OF TRACY
2015 URBAN WATER MANAGEMENT PLAN



Table 7-2 (Continued)
Baseline (2011-2014) Water Use Profile
City of Tracy, California

Abbreviations:

CII = commercial, industrial, and institutional

Notes:

- (a) Baseline water use is calculated using the average of the City's monthly metering data between 2011 and 2014 for each sector.
- (b) Indoor water use was estimated to be the lowest monthly water use for each sector, accounting for the number of days in each month. Outdoor water use for each sector was estimated to be the difference between the total water use and the estimated indoor water use.

Prior to the 2015 SWRCB Resolution, the City Council had already declared Stage 2 of the 2015 WSCP to respond to 2014 SWRCB actions. The City Council enacted Stages 3 and 4 of the 2015 WSCP on 2 June 2015. Stage 4 of the 2015 WSCP called for a 25% water reduction and included prohibitions that targeted water waste and discretionary outdoor uses. This stage of action remained in place to meet the 2015 SRWCB mandated reduction target.

As shown in Table 7-3, the City achieved high savings (up to a 34% reduction in total demand) during the summer and fall months, likely corresponding to large cut-backs in irrigation water uses. Total cumulative water savings through February 2016 have been 26.9%.

7.4 STAGES OF ACTION

10632. (a) The plan shall provide an urban water shortage contingency analysis that includes each of the following elements that are within the authority of the urban water supplier: (1) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage.

Based on lessons learned during the recent drought, and based on future projections of future dry-year shortfalls (see Section 6.3), the City updated the stages of action to be taken in response to water supply shortages. This WSCP establishes a set of mandatory prohibitions and five stages of increasingly restrictive actions to be implemented to respond to water supply reductions, including a 50% supply reduction as required by CWC §10632(a). All of the Stages allow for adequate water to protect public health and safety and satisfy the fire protection needs of the City. Table 7-4 summarizes the water supply reductions and supply conditions associated with each stage of action.

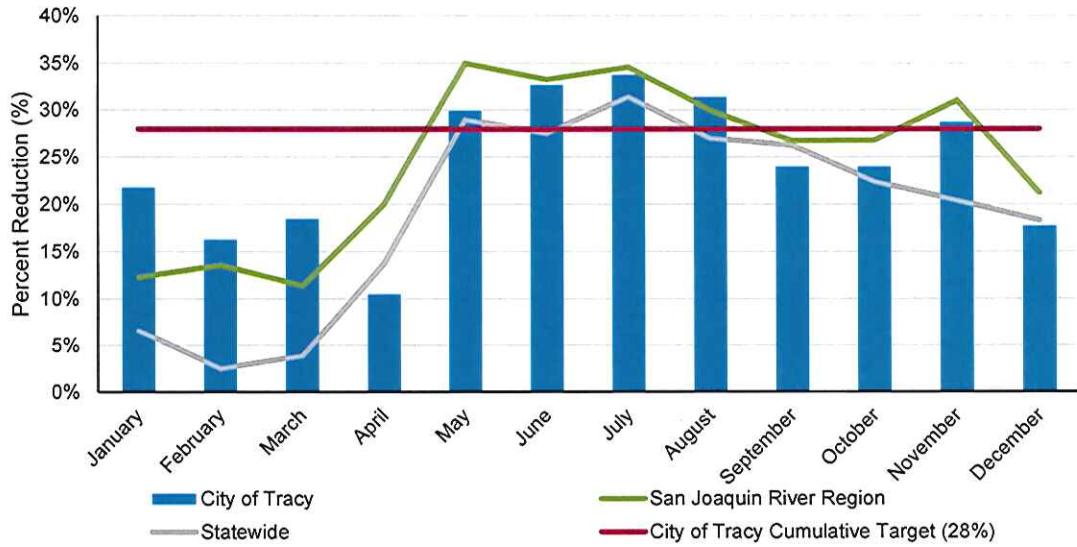
As shown in Table 7-4, each stage of action reflects a range of targeted water savings. Mandatory prohibitions are in force at all times with the intent to eliminate water waste. Each subsequent stage of the WSCP is implemented with a formal declaration by the City Council recognizing the need for a reduction in water use due to a water supply shortage or emergency and enacting a specified stage of action.

Table 7-5 describes the customer restrictions and prohibitions and consumption reduction methods (i.e., the actions to be taken by the City) associated with each stage of action. Specific prohibitions and consumption reduction methods are discussed in Sections 7.5 and 7.7, respectively. The monthly and cumulative annual water savings impacts associated with each restriction, prohibition, and consumption reduction method were quantitatively estimated using the DRT for each stage of action, and are included in Appendix R.

Table 7-3
2015 Water Use Reductions
City of Tracy, California

Month	2015 Monthly Water Savings From 2013 Baseline		
	City of Tracy (a)	San Joaquin River Hydrologic Region (b)	Statewide (b)
January	21.8%	12.3%	6.6%
February	16.3%	13.6%	2.5%
March	18.5%	11.4%	3.9%
April	10.5%	20.0%	13.7%
May	29.9%	35.0%	29.0%
June	32.7%	33.3%	27.5%
July	33.8%	34.6%	31.4%
August	31.4%	30.0%	27.0%
September	24.0%	26.7%	26.2%
October	24.0%	26.8%	22.4%
November	28.7%	31.0%	20.4%
December	17.7%	21.2%	18.3%

Monthly Water Use Reduction for 2015 Compared to 2013 Baseline



**CITY OF TRACY
2015 URBAN WATER MANAGEMENT PLAN**



**Table 7-3
2015 Water Use Reductions
City of Tracy, California**

Abbreviations:

DRINC = Drinking Water Information Clearinghouse

Notes:

- (a) City of Tracy conservation data from Reference 1.
- (b) San Joaquin River Region and Statewide conservation data from Reference 2.

References:

- (1) DRINC Portal (<http://drinc.ca.gov/>) Urban Water Supplier Monitoring Reports, February 2016.
- (2) Fact Sheet, December 2015 Statewide Conservation Data, State Water Resources Control Board, (http://www.waterboards.ca.gov/water_issues/programs/conservation_portal/conservation_reporting.shtml), accessed 6 April 2016.

CITY OF TRACY
2015 URBAN WATER MANAGEMENT PLAN



Table 7-4
Stages of Water Shortage Contingency Plan (DWR Table 8-1)
City of Tracy, California

Stage	Percent Supply Reduction	Rationale	Water Supply Condition
Mandatory Prohibitions and Requirements	N/A	Mandatory prohibitions to prevent water waste	In force at all times.
1	0% to 10%	Single dry year shortfall of 6% projected for 2040	Declaration by the City Council upon the determination that one or more of the trigger mechanisms exist (see note (a)) and that the City must reduce water use by 0% to 10% due to water supply shortages or emergency
2	10% to 15%	Intermediate stage	Declaration by the City Council upon the determination that one or more of the trigger mechanisms exist (see note (a)) and that the City must reduce water use by 10% to 15% due to water supply shortages or emergency
3	15% to 20%	Multiple dry year shortfall of 22% projected at Buildout	Declaration by the City Council upon the determination that one or more of the trigger mechanisms exist (see note (a)) and that the City must reduce water use by 15% to 20% due to water supply shortages or emergency
4	20% to 30%	The City's 2015 SWRCB-mandated water conservation standard was 28%; single dry year shortfall of 31% at Buildout	Declaration by the City Council upon the determination that one or more of the trigger mechanisms exist (see note (a)) and that the City must reduce water use by 20% to 30% due to water supply shortages or emergency
5	30% to 50%	Required by UWMP Act	Declaration by the City Council upon the determination that one or more of the trigger mechanisms exist (see note (a)) and that the City must reduce water use by 30% to 50% due to water supply shortages or emergency

Abbreviations:

TMC = Tracy Municipal Code

UWMP = Urban Water Management Planning

WSCP = Water Shortage Contingency Plan

Sources:

(a) Per TMC §112.140, the following conditions may trigger implementation of the City's WSCP:

- The average static groundwater basin level reaches thirty feet below sea level as determined by the Water Production Supervisor by means of monthly groundwater soundings at the water production wells, or if the estimated groundwater demand for the year exceeds 6,000 acre-feet.
- A cutback of available surface water supplies obtained from the Central Valley Project occurs.
- A drought is declared by the Governor of California covering the water sources used by the City, and subsequent reductions of water supplied to the City will occur or are likely to occur.
- Any unusual situation or circumstance exists that affects the quantity or quality of the water supply.

Table 7-5
Stages of Action and Water Shortage Responses (DWR Tables 8-2 and 8-3)
City of Tracy, California

Stage	Consumption Reduction Methods by Water Supplier	Restrictions and Prohibitions on End Uses (Customers)
Mandatory Prohibitions and Requirements	<ul style="list-style-type: none"> Not applicable 	<p><i>Prohibitions</i></p> <ul style="list-style-type: none"> No customer shall permit flagrant water waste or incidental water runoff. Flagrant water waste or excessive water runoff is defined as any water that flows directly from a tap connected to the City water system that leaves the property of origin in a continuous flow of any dimension for 150 feet from the property, or for more than five minutes in duration. Allowing runoff when irrigating with potable water is prohibited. Using hoses with no shutoff nozzles to wash cars is prohibited. Using potable water to wash hardscapes such as sidewalks and driveways is prohibited. Using potable water to operate decorative water features, including splash pads, that do no re-circulate water is prohibited. Irrigating outdoors during and within 48 hours following measurable rainfall is prohibited. Using potable water to irrigate ornamental turf on public street medians is prohibited. Using potable water to irrigate outside of newly constructed homes and buildings in a manner that is inconsistent with regulations or other requirements established by the California Building Standards Commission and the Department of Housing and Community Development is prohibited. <p><i>Requirements</i></p> <ul style="list-style-type: none"> Any customer must properly maintain all plumbing and irrigation systems and control all leaks within 72 hours of discovery or notification.

Table 7-5 (Continued)
Stages of Action and Water Shortage Responses (DWR Tables 8-2 and 8-3)
City of Tracy, California

Stage	Consumption Reduction Methods by Water Supplier	Restrictions and Prohibitions on End Uses (Customers)
Mandatory Prohibitions and Requirements (Continued)		<p><i>Requirements (Continued)</i></p> <ul style="list-style-type: none"> Customers shall practice prudent water conservation measures, including: <ul style="list-style-type: none"> Planting drought-tolerant landscapes; Installing and maintaining water-efficient irrigation systems such as drip and bubble irrigation with weather or soil-based controllers; Installing sprinkler heads with a low flow rate appropriate for the landscape to prevent overwatering and runoff; and Watering only in the late night or early morning hours during non-windy periods. A hose that dispenses potable water shall be fitted with a shut-off nozzle or flow restriction device attached to it that causes it to cease dispensing water immediately when not in use. All swimming pools, hot tubs and spas installed after 1 May 1993 must have a separation tank and water recovery system installed in the filter backwash system, with a 90% water recovery standard. Each swimming pool, hot tub and spa installed after 15 July 2015 must have a non-permeable floating cover or equivalent device that provides 90% surface coverage.
Stage 1 Goal: 0% to 10% Reduction	<ul style="list-style-type: none"> Expand outreach for existing water conservation programs. Promote public awareness (e.g., website, social media). 	<ul style="list-style-type: none"> All landscape irrigation is restricted to the hours of 7:00 pm and 9:00 am. Restaurants and commercial lodging establishments must post notice of drought conditions. Hotels and motels must offer guests an option to opt of linen/towel service. The serving of drinking water other than upon request is prohibited in eating or drinking establishments.

Table 7-5 (Continued)
Stages of Action and Water Shortage Responses (DWR Tables 8-2 and 8-3)
City of Tracy, California

Stage	Consumption Reduction Methods by Water Supplier	Restrictions and Prohibitions on End Uses (Customers)
Stage 2 Goal: 10% to 15% Reduction	<ul style="list-style-type: none"> Continue with actions and measures from Stage 1. Increase public outreach (e.g., water bill inserts). Offer water use surveys to up to the top 10% of residential, CII, and irrigation accounts. 	<ul style="list-style-type: none"> Continue with actions and measures from Stage 1. All landscape irrigation is restricted to three days per week between 7:00 pm and 9:00 am. Any customer must repair and control all significant leaks, as determined by the City, within 48 hours of discovery or notification.
Stage 3 Goal: 15% to 20% Reduction	<ul style="list-style-type: none"> Continue with actions and measures from Stages 1 and 2. Increase enforcement efforts. Increase public outreach (e.g., media campaign, hosting public events and workshops). Decrease frequency and length of line flushing. 	<ul style="list-style-type: none"> Continue with actions and measures from Stages 1 and 2. Except as otherwise provided, individual residential car washing shall be allowed only with the use of a bucket. Automobile and recreational vehicle dealerships are allowed to continue washing vehicles with a hose that is fitted with a shut-off nozzle or flow restriction device attached to it that causes it to cease dispensing water immediately when not in use, under the following conditions: <ul style="list-style-type: none"> Automobiles and recreational vehicles may be washed only on Fridays using the method outlined above An automobile, motorcycle, boat or motorhome may be washed the day before or the day of delivery to the purchaser using the method outlined above No customer may add water or refill a swimming pool, spa or hot tub unless it has a separation tank and water recovery system installed in the filter backwash system, with a 90% water recovery standard.
Stage 4 Goal: 20% to 30% Reduction	<ul style="list-style-type: none"> Continue with actions and measures from Stages 1 through 3. Establish a drought hotline. Conduct an audit of up to 25% of the City's distribution system to identify and repair leaks. Expand water use surveys to up to the top 20% of residential and CII accounts and up to the top 50% of dedicated irrigation accounts. 	<ul style="list-style-type: none"> Continue with actions and measures from Stages 1 through 3. All landscape irrigation is restricted to two days per week between 7:00 pm and 9:00 am.

Table 7-5 (Continued)
Stages of Action and Water Shortage Responses (DWR Tables 8-2 and 8-3)
City of Tracy, California

Stage	Consumption Reduction Methods by Water Supplier	Restrictions and Prohibitions on End Uses (Customers)
Stage 5 Goal: 30% to 50% Reduction	<ul style="list-style-type: none">Continue with actions and measures from Stages 1 through 4.City Council may implement a drought rate surcharge, as set forth in TMC §11.28.230.No new water connections may be approved.	<ul style="list-style-type: none">Continue with actions and measures from Stages 1 through 4.City Council may prohibit water uses not required for public health and safety and fire protection.City Council may prohibit all outdoor water uses.City Council may prohibit all recreational water uses.City Council may establish water budgets established for all customer accounts.

Abbreviations:

CII = commercial, industrial and institutional

TMC = Tracy Municipal Code

7.5 PROHIBITIONS ON END USES

10632. (a) (4) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.

Restrictions and prohibitions associated with each stage of action in the City's WSCP are presented in Table 7-5. As discussed above, these responses focus on the reduction of non-essential water uses such as ornamental landscape irrigation, and preserve water uses that are estimated to the health, safety, welfare, and economic vitality of the City's customers. In addition, mandatory prohibitions are enforced at all times as part (see Table 7-5). On 9 May 2016, Governor Brown issued Executive Order B-37-16 which, among other things, directed the SWRCB to permanently prohibit practices that waste potable water. The SWRCB adopted Resolution No. 2016-0029 on 18 May 2016, which extended the February 2016 emergency regulations and prohibited specific water-wasting actions. Together, the prohibitions listed in the Mandatory Prohibitions stage of the City's WSCP include each of the prohibitions on end uses mandated by the SWRCB in its May 2016 emergency regulations. Prohibitions in subsequent stages go beyond the SWRCB requirements and become increasingly restrictive.

7.5.1 Defining Water Features

10632. (b) Commencing with the urban water management plan update due July 1, 2016, for purposes of developing the water shortage contingency analysis pursuant to subdivision (a), the urban water supplier shall analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas, as defined in subdivision (a) of Section 115921 of the Health and Safety Code.

As required by CWC §10632(b), the City distinguishes between "decorative water features" such as ponds, lakes, water play features and fountains that are artificially supplied with water and "recreational water features" such as swimming pools and spas. Prohibitions on water use for decorative water features are listed separately from those for recreational water features (see Table 7-5).

7.6 PENALTIES, CHARGES, AND OTHER ENFORCEMENT

110632. (a) (6) Penalties or charges for excessive use, where applicable.

The City is authorized under Chapter 11, Article 5 of the TMC to enforce the requirements of the WSCP. Enforcement of the City's water use restrictions and prohibitions is focused on soliciting cooperation from water customers who are unaware of the restrictions or have failed to comply with the provisions of the WSCP. The City first issues Courtesy Notices informing customers regarding the specific violation and corrective action within 72 hours. If the first notice does not work, the City issues a second Courtesy Notice. If those do not result in compliance, the WCC writes a letter, delivered by certified mail, warning that if the customer does not comply within 72 hours, a citation will be issued by the City. A customer may appeal a penalty imposed by the City within 15 days of receiving notice from the City of the intent to impose a penalty.

In accordance with TMC §11.28.070, a customer who violates any of the provisions of Stages 1 through 5 of the City's WSCP, or fails to comply with an order or permit made thereunder, is guilty of an infraction and is punishable as follows:

- (1) A fine not exceeding \$100 for a first violation.
- (2) A fine not exceeding \$200 for a second violation within a twelve month period.
- (3) A fine not exceeding \$500 for each additional violation of within a twelve month period.
- (4) If a person is found to have violated the same Code provision at least twice within a twelve month period, the offense, which would otherwise be an infraction, is considered a misdemeanor.⁴⁰

Four violations within the same six month period will result in the installation of a meter service flow restrictor at the customer's expense. The flow restrictor is to remain in place for the remainder of the drought or water emergency. Failure to pay assessed fines will result in termination of water service until payment in full of all fines and usual reconnection charges are collected from the customer.

7.7 CONSUMPTION REDUCTION METHODS

As discussed above, the WSCP lists consumption reduction methods that the City will implement during each stage of action to reduce the City's own water consumption and encourage reduction in water use by its customers. Consumption reduction methods associated with each stage of action are presented in Table 7-5. The monthly and cumulative annual water savings impacts associated with each restriction, prohibition, and consumption reduction method were quantitatively estimated using the DRT for each stage of action, see Appendix R.

A main focus of the City's planned consumption reduction measures is to increase public outreach and keep customers informed of the water shortage emergency and actions they can take to reduce consumption. Consumption reduction methods also include measures to reduce system losses through a reduction in line flushing, increase enforcement and patrols, and in certain conditions, implement a moratorium on new services.

7.8 DETERMINING WATER SHORTAGE REDUCTIONS

10632. (a) (9) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.

All of the City's current service connections are metered and meters are read on a monthly basis. Actual water savings achieved by implementing the WSCP will be determined by comparing water consumption records while WSCP is in place with an appropriate baseline consumption.

⁴⁰ A misdemeanor is punishable by a fine not exceeding \$1,000, or imprisonment not exceeding six months, or both (Ordinance 996 §1 (part), 1999).

7.9 REVENUE AND EXPENDITURE IMPACTS

10632 (a) (7) An analysis of the impacts of each of the actions and conditions described in paragraphs (1) to (6), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.

Since the City bills its customers per unit volume of water consumed, the City would experience a reduction in revenue upon implementation of the WSCP. To compensate for the expected revenue reduction caused by water conservation, the City reserves the authority to implement temporary water rate increases, as adopted by resolution of the City Council (TMC §11.28.220). Additionally, the City Council may adopt a resolution to establish a water rate structure, including excess water use surcharges, that provides incentives to conserve water (TMC §11.28.230). Individual customers may seek a waiver of excess water use surcharges through the variance process set forth in TMC §11.28.240.

7.10 WATER SHORTAGE CONTINGENCY ORDINANCE AND RESOLUTION

10632 (a) (8) A draft water shortage contingency resolution or ordinance.

The ordinance adopted as part of this Plan that establishes the City's WSCP is included as Appendix P of this UWMP.

7.11 CATASTROPHIC SUPPLY INTERRUPTION PLAN

10632 (a) (3) Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.

In response to the requirements of the Public Health, Security and Bioterrorism Preparedness and Response Act of 2002 (Bioterrorism Act), which amended the Safe Drinking Water Act to include Section 1433, the City prepared a Water System Emergency Response Plan (WSERP) (WYA, 2004). The City's WSERP provides a framework for emergency response by the City's Utilities Department by describing the department's emergency management organization, roles, and responsibilities and emergency policies and procedures. Excerpts from the City's WSERP can be found in Appendix S. In accordance with the aforementioned goals, the WSERP:

- Describes the Department of Utilities' emergency management organization;
- Identifies the types of emergencies that the Department of Utilities may need to respond to for its water system;
- Outlines the roles and responsibilities the Department of Utilities and its staff during emergency response and recovery; and
- Compiles and organizes water system emergency response protocols and procedures.

Prior to the 2003 WSERP, the City had developed numerous emergency planning and procedures documents which provide information on emergency roles and responsibilities and

specific emergency procedures for the City's water supply and distribution facilities. Tracy's 2003 WSERP is not intended to replace these documents, but is designed to work in conjunction with existing plans. Additional water supply emergency plans adopted by the City include:

- *City of Tracy Emergency Plan;*
- *Emergency Response Handbook;*
- *City of Tracy General Standby Procedures;*
- *Process Safety Management Program;*
- *Emergency Action Plan;*
- *Department of Health Services Water Quality Emergency Notification Plan;*
- *Water Treatment Plant Operations Manual;*
- *Water Treatment Plant Operations Plan;*
- *Risk Management Plan; and*
- *Hazardous Materials Business Plan.*

A more complete description of these plans can be found in the WSERP.

7.11.1 Types of Emergencies

Several types of emergencies can occur which could impact the City's water system and its operations. The City's WSERP is designed to assist the City in quick response to water system emergencies that may include the following natural or man-made causes:

- Earthquake
- Fires
- Contamination or loss of water supply
- Hazardous materials spills or leaks
- Severe storms or floods
- Landslides
- Pipelines, reservoir, tank and/or building failure
- Civil unrest, vandalism, or terrorist action or threat
- National security emergency
- Widespread power outage
- Airplane crash
- Traffic/highway accidents
- Intrusion through Supervisory Control and Data Acquisition system

It is important to note that there are a number of events, such as large earthquakes or fires, which occur infrequently, but have a very high impact potential. There are also events, such as severe storms and floods, which have less of an impact potential, but occur more frequently. Although the planning basis for Tracy's WSERP is for a major emergency, the principles outline in the WSERP can be applied to any type or magnitude of event.

7.11.2 Emergency Categories and Response Levels

Four response categories have been defined in the WSERP to provide a common method of describing the type of event, area affected, and the extent of coordination or assistance needed.

These categories include the following: (0) Readiness/Routine Response, (1) Local Emergency, (2) Local Disaster, and (3) Major Disaster (see Table 6, Appendix S).

Depending on the severity of a given emergency, the situation may warrant response from different levels of government consistent with the Standardized Emergency Management System. Tracy's WSERP identifies these levels as State, Regional, Operational Area (San Joaquin County), Local (City of Tracy), or Field (Utilities Staff). The extent of each levels' responsibilities is described in Figure 1 of Appendix S and their involvement in each of the four emergency response categories are outlined in Table 6 of Appendix S.

7.11.3 Plan Activation, Response, and Deactivation

Table 9 in Appendix S gives the response categories, triggers and potential response actions to be implemented to the extent required by the nature and scope of the emergency. The activation process includes plan triggers, staff responsibilities, mutual aid or assistance availability and damage assessment. Responses are coordinated in accordance with the severity and extent of the emergency.

Table 10 of Appendix S identifies deactivation triggers and potential actions to be implemented once the emergency situation has been corrected and water quality is established. The deactivation process is in the reverse order of the activation process, starting with the highest category attained in the activation process.

7.12 ESTIMATE OF MINIMUM SUPPLY FOR NEXT THREE YEARS

10632 (a) (2) An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.

Based on the supply reliability analysis presented in Section 6, the City can expect to receive 19,485 AF in 2016 and 25,097 AF in 2017 and 2018 (see Table 7-6).

CITY OF TRACY
2015 URBAN WATER MANAGEMENT PLAN



Table 7-6
Estimated Minimum Three-Year Supply (DWR Table 8-4)
City of Tracy, California

	Average Normal Year Supply (AF)	Multiple-Dry Year Water Supply (AF)		
		2016	2017	2018
Available Water Supply	27,620	19,485	25,097	25,097

Abbreviations:

DWR = Department of Water Resources

ATTACHMENT E

CITY OF TRACY MUNICIPAL CODE CHAPTER 11.28

WATER MANAGEMENT

ATTACHMENT E

Chapter 11.28 - WATER MANAGEMENT

Sections:

Article 1. - Purpose, Definitions

11.28.010 - Purpose.

It is the purpose of this chapter to prevent the waste and unreasonable use of water and to promote water conservation as an effective means to manage the local water supply as necessary for public health, safety, fire protection and recreational needs.

(Prior code § 11-7.101)

(Ord. No. 1196, § 1 (Exh. A), 6-16-2015)

11.28.015 - Application of regulations.

This chapter applies to every person both within and outside the City who draws water from the City water distribution system.

(Ord. No. 1196, § 1 (Exh. A), 6-16-2015)

11.28.020 - Definitions.

For the purposes of this chapter, unless otherwise apparent from the context, certain words and phrases used in this chapter are defined as follows:

- (a) "Consumer unit" or "unit" means one hundred (100) cubic feet of water, or seven hundred forty-eight (748) gallons.
- (b) "Customer" means owner, tenant, manager, or occupant of property receiving City water service.
- (c) "Director" means the Director of Utilities or his/her designee, or any agent for the City authorized to enforce compliance with this chapter.
- (d) "Drought" means a water shortage as declared by the Governor of California which affects the local water supply, or any unusual situation or circumstance affecting the quantity or quality of the local water supply.
- (e) "Flagrant water waste" means the application of any potable water to outdoor landscapes or hardscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures.
- (f) "Flow restriction device" means any device expressly used to limit water flow or pressure to a water service.
- (g) "Hardscape" means the manmade part of the grounds surrounding a building such as but not limited to: a patio, sidewalk, cement walkway, asphalt, statue, driveway, street, gutter, or balcony.
- (h) "Incidental runoff" means unintended amounts of water runoff, such as minimal over-spray from a sprinkler that escapes the area of intended use.
- (i) "Landscape" means trees, shrubs, grass, groundcover, plants or flowers. It does not include food sources such as vegetable and/or fruit plants and trees.

- (j) "Recycled water" or "reuse water" means non-potable water, collected stormwater or treated wastewater.
- (k) "Water emergency" means an event, time or situation that requires extraordinary management or restrictions on potable water use caused as a result of natural events or as an unanticipated manmade event affecting the quantity or quality of the local water supply.

(Prior code § 11-7.102)

(Ord. No. 1196, § 1 (Exh. A), 6-16-2015)

11.28.030 - Future restrictions.

All applicants for water service are hereby put on notice that further restrictions or prohibitions on water use and service may hereafter become necessary; and nothing herein, no application, permit or approval of water service or water service facilities granted pursuant to these rules shall vest in the applicant any right to a particular use or quantity of water; but such applicant shall be subject to all further prohibitions, restrictions, rules and regulations in the same manner and extent as any other consumer or class of consumers similarly situated existing at the time such prohibitions or restrictions are imposed.

(Prior code § 11-7.103)

Article 2. - Fees

11.28.040 - Fees.

Fees charged pursuant to this chapter shall be set by resolution of the City Council.

(Prior code § 11-7.201)

Article 3. - Authority, Enforcement, Fines and Property Owner Responsibility

11.28.050 - Authority.

The following officers and employees are authorized to enforce this chapter, including issuing an order to cease and desist and/or a notice of intention to impose a penalty: City Manager, Director of Development Services, Director of Public Works, Director of Utilities, Water Resources Coordinator, Water Resources Analyst, Environmental Control Officer, Environmental Compliance Technician, Water Patrol, Sworn Peace Officers, Firefighters, and Code Enforcement Officers.

(Prior code § 11-7.301)

(Ord. No. 1196, § 1 (Exh. A), 6-16-2015; Ord. No. 1227, § 1(Exh. A), 10-18-2016)

11.28.060 - Enforcement and Implementation.

The City Manager or his/her designee is charged with primary responsibility for the implementation and enforcement of this chapter. If there is a conflict between two stages (at Sections 11.28.160 through 11.28.210), the more restrictive stage shall apply. The Director shall prepare the forms, warnings, and similar documents as he or she deems necessary or appropriate to implement this chapter.

(Prior code § 11-7.302)

(Ord. No. 1196, § 1 (Exh. A), 6-16-2015; Ord. No. 1227, § 1(Exh. A), 10-18-2016)

11.28.070 - Order, notice, penalty and appeal.

- (a) *Cease and desist order.* Upon a determination by the Director that a person has consumed or used water in violation of a mandatory provision of this chapter, the Director may issue an order to cease and desist from the violation, and further order that the person comply with this chapter, or otherwise take appropriate remedial or preventive action. The Director shall serve the order:
 - (1) Personally; or
 - (2) By leaving or posting a copy at the person's residence or place of business; or
 - (3) By mail.
- (b) *Notice of intent to impose a penalty.* If, after the issuance of a cease and desist order, the person continues to consume or use, or again consumes or uses, water in violation of this chapter, the Director may issue a notice of intention to impose a penalty. The notice shall:
 - (1) Identify the date and time of the violation,
 - (2) State the amount of penalty to be imposed, and
 - (3) Advise the person of the appeal rights. The notice of intention shall be served in the same manner as the cease and desist order.
- (c) *Penalty.* After the notice of intent to impose a penalty is served, a penalty shall be assessed in the amount of: One Hundred and no/100ths (\$100.00) Dollars for the first violation, Two Hundred and no/100ths (\$200.00) Dollars for the second violation, and Five Hundred and no/100ths (\$500.00) Dollars for the third and each subsequent violation. The penalty is subject to collection in the same manner as utility service charges.
- (d) *Appeal.* A person may appeal the imposition of the penalty assessed to the utility account. The person must request an appeal within fifteen (15) calendar days from the date of service of the notice of intention to impose a penalty. The request for an appeal hearing must be addressed to the City Manager and received by the City within the fifteen-day period. Failure to timely appeal constitutes a waiver of the right to appeal (and the penalty will be assessed).
- (e) *Appeal hearing.* If timely requested, the appeal hearing shall be held before the City Manager, or his or her designee, who shall make a factual finding on the existence of a violation(s). The hearing shall be held within thirty (30) days from the date the City receives the appeal, unless continued by mutual consent. The hearing officer shall give notice by first class mail of the date and time of the appeal hearing, at least ten days before the hearing. The appellant may present witnesses and documentary evidence, and may be represented by anyone of his or her choosing. The decision of the hearing officer is final.

(Ord. 1040 § 5 Exh. E (part), 2002: prior code § 11-7.303)

(Ord. No. 1196, § 1 (Exh. A), 6-16-2015)

11.28.080 - Access to service connections.

Access to service connections and water meters must be provided at all times to designated City personnel in possession of proper identification. Authorized employees of the City shall be admitted at all reasonable hours to all parts of any premises supplied with water, except the interior of dwellings but including the meter box, to ascertain compliance with the regulations contained in this chapter.

(Prior code § 11-7.304)

11.28.090 - Unlawful to tamper with service.

It shall be unlawful for any person to interfere with the City service lines, valves or meters or to construct a bypass around a meter or service.

(Prior code § 11-7.305)

11.28.100 - Property owners' responsibility.

Owners of property will be held responsible for water used on their premises, although payments will be accepted from tenants. If the tenants do not pay in accordance with the provisions of this chapter, the service may be disconnected and shall not be restored until the delinquent water charges, including the cost of water delivered, applicable surcharges, as well as the cost of reconnecting the service, have been paid. Owners of property shall be responsible for the maintenance of water pipes, water faucets, water plumbing fixtures, and all other water services appliances from the point the water meter exits into the plumbing of the property owner. No owner or manager or any other person responsible for the day-to-day operation of any premises shall fail to initiate steps to repair any leaking, broken or defective pipes, faucets, plumbing fixtures, other water appliances, sprinklers, watering or irrigation systems within seventy-two (72) hours after the owner or manager or other responsible person knew or should have known of such leaks, breaks or defects. A written request sent by certified mail to repair such defect or defects from a City representative shall constitute sufficient notice.

(Prior code § 11-7.306)

11.28.110 - Termination of service.

The City shall terminate service to any customer due to excessive violations of this chapter after written notice to the customer. The notice shall be posted on the door of the customer by door hanger at least two business days or sent by mail three business days before the termination of service. For purposes of this chapter, "excessive violations" means more than four violations within a six month period.

(Prior code § 11-7.307)

(Ord. No. 1196, § 1 (Exh. A), 6-16-2015)

11.28.120 - Unlawful to provide false information.

It is unlawful for any person, firm, partnership, association, corporation, or political entity to use water obtained from the water system of the City through fraud, including misrepresentation made to obtain a particular allocation of water, or for any prohibited or restricted use as herein defined in this chapter.

(Prior code § 11-7.308)

Article 5. - Drought and Other Water Emergency Conditions

11.28.130 - Drought declaration.

Enactment of the ordinance codified in this chapter shall cause the present implementation of mandatory prohibitions and requirements as set forth in Section 11.28.160 of Article 6. Stages 1 through 5 are established to achieve subsequent reduction goals in potable water consumption of ten (10%) percent, fifteen (15%) percent, twenty (20%) percent, and thirty (30%) percent or more as deemed necessary due to drought conditions or other prolonged water emergencies. Stage 5 is established for up to fifty (50%) percent water reduction and water emergency declarations. Stage changes will be implemented by resolution of the City Council. A duly noticed public hearing is required when going from Stage 1 up to and inclusive of Stage 5.

Stage changes shall be based upon the trigger mechanisms and criteria set forth in this article. Affected customers shall be notified of stage changes by notice on the utility bill or by actual written notification mailed to the billing address on record with the City Finance Department.

(Prior code § 11-7.501)

(Ord. No. 1196, § 1 (Exh. A), 6-16-2015; Ord. No. 1227, § 1(Exh. A), 10-18-2016)

11.28.140 - Trigger mechanisms.

The City Council may declare a drought and direct the City Manager to implement all provisions of Article 6 of this chapter when one or more of the following conditions exist:

- (a) The average static groundwater basin level reaches thirty (30') feet below sea level as determined by the Water Production Supervisor by means of monthly groundwater soundings at the water production wells, or if the estimated groundwater demand for the year exceeds 6,000 acre feet, the estimated safe yield for groundwater extraction;
- (b) A cutback of available surface water supplies obtained from the Central Valley Project or South San Joaquin Irrigation District occurs;
- (c) A drought is declared by the Governor of California covering the water sources used by the City, and subsequent reductions of water supplied to the City will occur or are likely to occur;
- (d) Any unusual situation or circumstance which affects the quantity or quality of the water supply.

(Prior code § 11-7.502)

(Ord. No. 1227, § 1(Exh. A), 10-18-2016)

Article 6. - Water Conservation and Rationing Plan, Water Emergency Plan, Variances and Appeals

11.28.150 - Amendments.

The provisions of this article may be amended from time to time or as deemed necessary by the City Council.

(Prior code § 11-7.601)

11.28.160 - Mandatory prohibitions and requirements.

(a) *Prohibitions.* The following actions and activities are prohibited:

- (1) Allowing flagrant water waste or incidental water runoff from your property when irrigating with potable water.
- (2) Using hoses with no shutoff nozzles to wash vehicles.
- (3) Using potable water to operate non-recirculating decorative water features, including splash pads.
- (4) Irrigating outdoors during and within 48 hours following a measurable rainfall. "Measurable rainfall" means any amount of precipitation that generates a puddle or runoff.
- (5) The serving of drinking water other than upon request, in eating or drinking establishments.
- (6) Using potable water to irrigate ornamental grass or turf on public street medians.
- (7) Using potable water to irrigate outside of newly constructed homes and buildings in a manner that is inconsistent with regulations or other requirements established by the California Building Standards Commission and the Department of Housing and Community Development.

(b) *Mandatory requirements.*

- (1) Any customer must properly maintain all outdoor plumbing and irrigation systems and control all leaks within seventy-two (72) hours of discovery or notification.
- (2) Customers shall practice prudent water conservation measures, including:
 - (i) Planting drought-tolerant landscapes;
 - (ii) Installing and maintaining water-efficient irrigation systems such as drip and bubble irrigation with weather or soil-based controllers;
 - (iii) Installing sprinkler heads with a low flow rate appropriate for the landscape to prevent overwatering and runoff;
 - (iv) Watering only in the late night or early morning hours during non-windy periods.
- (3) A hose that dispenses potable water shall be fitted with a shut-off nozzle or flow restriction device attached to it that causes it to cease dispensing water immediately when not in use.
- (4) All swimming pools, hot tubs, and spas installed after May 1, 1993 must have a separation tank and water recovery system installed in the filter backwash system, with a ninety (90%) percent water recovery standard.
- (5) Each swimming pool, hot tub and spa installed after July 15, 2015 must have a non-permeable floating cover or equivalent device that provides ninety (90%) percent surface coverage.

(Ord. No. 1227, § 1(Exh. A), 10-18-2016)

11.28.170 - Stage 1 water restrictions.

This section applies to any person, owner or manager responsible for the day-to-day operations of a premise. In addition to the mandatory prohibitions and requirements in section 11.28.160, the following requirements apply:

- (a) All landscape irrigation is restricted to before 9:00 a.m. or after 7:00 p.m. daily. This applies to residential, commercial, industrial, institutional, municipal and other public agencies or entities.

- (b) Restaurants and commercial lodging establishments must post notice of drought conditions.
- (c) Hotels and motels must offer guests an option to opt out of linen/towel service.

(Prior code § 11-7.603)

(Ord. No. 1196, § 1 (Exh. A), 6-16-2015; Ord. No. 1227, § 1(Exh. A), 10-18-2016)

11.28.180 - Stage 2 water restrictions.

In addition to Stage 1, the following requirements apply:

- (a) Landscapes, including residential, commercial, industrial, institutional, municipal and other public agencies or entities, may be irrigated three (3) days per week as follows:
 - (1) Odd-numbered addresses may irrigate only on Monday, Wednesday and Saturday before 9:00 a.m. and after 7:00 p.m.
 - (2) Even-numbered addresses may irrigate only on Tuesday, Thursday and Sunday before 9:00 a.m. and after 7:00 p.m.
 - (3) At any time provided that only drip, microspray or bubbler irrigation is used.
- (b) Any customer must repair and control all outdoor water leaks that violate this Chapter, as determined by the City, within forty-eight (48) hours of discovery or notification.

(Prior code § 11-28.180)

(Ord. No. 1196, § 1 (Exh. A), 6-16-2015; Ord. No. 1227, § 1(Exh. A), 10-18-2016)

11.28.190 - Stage 3 water restrictions.

In addition to Stages 1 and 2, the following requirements apply:

- (a) Except as otherwise provided, individual residential car washing is allowed only with the use of a bucket. "Individual residential car washing" means the cleaning with potable water of a motor vehicle that is registered to an individual who lives on the premise.
- (b) Automobile and recreational vehicle dealerships are allowed to continue washing vehicles with a hose that is fitted with a shut-off nozzle or flow restriction device attached under the following conditions:
 - (1) Automobiles and recreational vehicles may be washed only on Friday using the method outlined above.
 - (2) An automobile, motorcycle, boat or motorhome may be washed the day before or the day of delivery to the purchaser using the method outlined above before 9:00 a.m. or after 7:00 p.m.
- (c) No customer may add water or refill a swimming pool, spa or hot tub unless it has a separation tank and water recovery system installed in the filter backwash system, with a ninety (90%) percent water recovery standard and it is a maintenance or health and safety issue.

(Prior code § 11-7.605)

(Ord. No. 1196, § 1 (Exh. A), 6-16-2015; Ord. No. 1227, § 1(Exh. A), 10-18-2016)

11.28.200 - Stage 4 water restrictions.

In addition to Stages 1, 2 and 3, the following requirements apply. Landscapes, including residential, commercial, industrial, institutional, municipal and other public agencies or entities, may be irrigated two days per week as follows:

- (1) Odd-numbered addresses may irrigate only on Wednesday and Saturday before 9:00 a.m. and after 7:00 p.m.
- (2) Even-numbered addresses may irrigate only on Thursday and Sunday before 9:00 a.m. and after 7:00 p.m.

(Prior code § 11-7.606)

(Ord. No. 1196, § 1 (Exh. A), 6-16-2015; Ord. No. 1227, § 1(Exh. A), 10-18-2016)

11.28.210 - Stage 5 water restrictions and Water Emergency declaration.

- (a) The City Council may mandate specific restrictions and prohibitions which may include but are not limited to:
 - (1) All water uses not required for public health and safety and fire protection are prohibited.
 - (2) No outdoor potable water uses are allowed.
 - (3) No recreational water uses are allowed.
 - (4) The Utilities Director shall establish water budgets for all customer accounts.
- (b) The City Council may declare a water emergency and direct the City Manager to implement appropriate water conservation and/or rationing requirements consistent with this chapter when one or more of the following conditions exist:
 - (1) A decrease in the ability to draw groundwater due to well contamination, well failure or other equipment or system failure, and no alternative source of water is available,
 - (2) Contamination of the water system,
 - (3) Natural disasters affecting water deliveries,
 - (4) During times of floods which would affect water quality,
 - (5) Sabotage or threats of sabotage against the water system,
 - (6) Any unusual situation or circumstance which affects the quantity or quality of the water supply.

(Prior code § 11-7.607)

(Ord. No. 1196, § 1 (Exh. A), 6-16-2015; Ord. No. 1227, § 1(Exh. A), 10-18-2016)

11.28.220 - Temporary rate increases.

When drought or water emergency conditions are declared by the City Council, it may become necessary to implement a temporary rate increase to cover reduced revenues as a result of conservation. Rates may be increased by resolution of the Council when it is determined that revenues are inadequate.

(Prior code § 11-7.608)

(Ord. No. 1196, § 1 (Exh. A), 6-16-2015)

11.28.230 - Excess water use surcharge.

- (a) During periods of a declared drought or water emergency, the City Council may, by resolution, establish a water rate structure which provides incentives (or disincentives) to conserve water use.
- (b) Any water user may seek to have the excess water use surcharge waived or forgiven through the variance process set forth in subsection 11.28.240(b) of this chapter upon substantial evidence of the following:
 - (1) The excess water use was beyond the user's control, and was not reasonably correctable due to special and unique circumstances, or
 - (2) An incident or condition occurred where public health or safety would have been threatened by decreased water usage.

(Prior code § 11-7.609)

(Ord. No. 1196, § 1 (Exh. A), 6-16-2015)

11.28.240 - Variances on usage restrictions or usage allotments.

The Director, shall document the type and character of any residential, commercial, or industrial user or public authority requesting a variance in the assigned water goal in Phase I, II, III or IV of this chapter. The Director shall maintain a separate file of each variance request and the response to that request. This file shall be available for public inspection during regular business hours.

- (a) No variance request will be considered until a water use has been prohibited or an excess use fee has been assessed on the customer's bill.
- (b) The Director may grant a variance for uses of water otherwise prohibited or adjust any consumer's allotment or billing, if the Director finds and determines that to fail to do so would cause an emergency condition affecting health, sanitation, or fire protection or causes undue hardship of the applicant or public.
- (c) If any condition upon which the variance request approval was based cease to exist (e.g., an occupant of the home vacates), the billed user of the home is responsible for notifying the Finance Department of the change for an appropriate adjustment to the user's allotment.
- (d) The City may request periodic confirmation from the billed user that all conditions upon which the variance request was approved are still in existence. Failure on the part of the user to respond to any reasonable inquiry shall be grounds for termination of the variance. Supplying false or erroneous information in such an inquiry for the purpose of obtaining or maintaining additional water allotments shall be deemed fraud.

(Prior code § 11-7.610)

(Ord. No. 1196, § 1 (Exh. A), 6-16-2015)

11.28.250 - Appeals.

Any water service customer who considers an action taken by the City under this chapter to have been erroneously taken, may appeal the action and decision to the City Manager as set forth in Section 1.12.010. The appellant shall continue to pay the monthly charge as billed pending the completion of the appeal process.

(Ord. 1111 § 4 Exh. A (part), 2007: prior code § 11-7.611)

(Ord. No. 1196, § 1 (Exh. A), 6-16-2015)

11.28.260 - Temporary water service.

Notwithstanding any other provisions of this chapter, no prohibition is expressly imposed upon applications, approvals, or installations of water service facilities solely for temporary service to those construction works which are entitled to permanent water service facilities under the terms of this chapter. However, the Director may, at his/her discretion, suspend the issuance of water permits for such temporary uses such as construction works, when acceptable alternative nonpotable sources are available.

(Prior code § 11-7.612)

11.28.270 - Residential use without prior history.

Where there is no prior history of use and notwithstanding any reduction of water use which would otherwise be a goal for residential water users pursuant to the goals as set forth in this chapter, no residential household shall be given a goal to reduce water consumption below the following: The seasonal average consumption customary for that user class or meter class, less than appropriate conservation goal amount.

(Prior code § 11-7.613)

Article 7. - Drawing Water from Fire Hydrants and Construction Water

11.28.280 - Drawing water from fire hydrants.

- (a) No person or persons, other than City personnel, shall open any fire hydrant or attempt to draw water therefrom, except through a City-owned hydrant meter, and except pursuant to a permit obtained from the City and approved by the Director or his/her designee in control of such hydrant.

It is unlawful and a misdemeanor to violate this section. (See TMC Section 1.04.030(b).) Sworn peace officers and other City staff with training in the powers of arrest and designated by the Police Chief are authorized to enforce this section.

- (b) A true copy of the obtained permit must, at all times, be in the possession of any person taking water from any fire hydrant. If any such person fails to display the permit copy upon demand, the City reserves the right to discontinue service and take possession of the City-owned meter and any appurtenances thereto. A service reinstatement fee will be charged to the applicant for reinstatement of such service.
- (c) If no City-owned meter is available to the customer, the customer may use load counts, if approved by the City, and notify the Development Services Department of the count each and every Friday.
- (d) Regardless of whether a City-owned meter or load count is utilized, a per day fee will be paid by the permittee for each and every day the permit is in effect, including weekends and holidays, regardless of whether water is used or not used.

In addition to the per day fee, the permittee will be charged for the amount of water metered or a load or loads counted at the prevailing rate schedule plus an administrative fee.

(e) When a City-owned meter is utilized, a deposit in an amount determined by City Council resolution shall be required. The deposit will be returned to the permittee upon closure of the water permit and payment of all applicable fees. The City may use the deposit for any of the unpaid fees.

(Prior code § 11-7.701)

(Ord. No. 1227, § 1(Exh. A), 10-18-2016)

11.28.290 - Construction water usage prohibited during periods of water emergencies.

(a) The use of fresh water for construction uses during a period of declared drought or during water emergencies is prohibited except with the City's written approval.

(b) The use of fresh water for dust control or other construction purposes is prohibited during a declared drought or water emergency when an alternative approved water source is available. The City's Wastewater Treatment Plant may, in a drought or water emergency, provide recycled wastewater or stormwater, at the per day permit fee, plus actual water consumption, plus an administrative fee, to water trucks for construction purposes whenever feasible.

(1) The Director may waive this prohibition on days of extreme winds which cause a dust control problem, if he or she determines that extreme winds are prevalent which are creating a dust control nuisance which must be abated immediately.

(2) In such instances, a one-day permit may be arranged through the Director. The permit will expire at the end of the work day, and usage of potable-quality water will be billed at the per day permit fee, plus actual water consumption, plus an administrative fee.

(Prior code § 11-7.702)

(Ord. No. 1196, § 1 (Exh. A), 6-16-2015; Ord. No. 1227, § 1(Exh. A), 10-18-2016)

ATTACHMENT F

CITY OF TRACY

2015 UWMP

GROUNDWATER

MANGEMENT PLAN



**APPENDIX I:
REGIONAL GROUNDWATER MANAGEMENT PLAN (EXCERPTED)**

Groundwater Management Plan for the Northern Agencies in the Delta-Mendota Canal Service Area

Groundwater Management Plan Update



San Luis & Delta-Mendota Water Authority

July 2011

Revised November 7, 2011



1120 West "I" Street, Suite C

Los Banos, CA 93635

Groundwater Management Plan for the Northern Agencies in the Delta-Mendota Canal Service Area

San Luis & Delta-Mendota Water Authority

Client Representative Frances Mizuno

AECOM Technology Corporation

Project Engineer Robert M. Stoddard, PE

A photograph of a professional engineer's license seal and a handwritten signature. The seal is circular with a double-line border. The outer ring contains the text 'REGISTERED PROFESSIONAL ENGINEER' at the top and 'ROBERT M. STODDARD' in the center. The inner circle contains 'No. 76407' at the top, 'EXPI. 3/31/12' in the center, and 'CIVIL' at the bottom. The bottom half of the inner circle is partially obscured by a handwritten signature that reads 'Robert M. Stoddard'.

60185608.0001

July 2011
Revised November 7, 2011



1120 West "I" Street, Suite C

Los Banos, CA 93635

Table of Contents

Section 1 Introduction.....	1
1.1 Regulatory Basis	2
1.2 Setting	5
Section 2 The Groundwater Management Area.....	7
Section 3 Characteristics of the GMA	9
3.1 Land Use and Groundwater Beneficial Use.....	9
3.2 Topography and Structure.....	9
3.3 Climate.....	10
3.4 Geology.....	11
3.4.1Confined Aquifer	12
3.4.2Corcoran Clay Layer.....	12
3.4.3Semiconfined Aquifer	12
3.5 Hydrology	13
3.5.1Surface Hydrology	14
3.5.2Subsurface Hydrology	15
3.6 Groundwater Quality	16
3.6.1Hydrochemical Facies.....	18
3.6.2Dissolved Solids.....	18
3.6.3Sulfate	18
3.6.4Boron	19
3.6.5Arsenic	19
3.6.6Selenium	19
3.6.7Nitrate	20
3.6.8Trace Elements.....	20
Section 4 Management Objectives.....	21
Section 5 Program Components Relating to Management	22
5.1 Components Relating to Groundwater Level Management.....	22
5.1.1Reduction of Groundwater Use by Development of New Surface Water Supplies.....	22
5.1.2Increase Use of Available Surface Water Supplies.....	22
5.1.3Development of Overdraft Mitigation Programs	22
5.1.4Development of Conjunctive Use Programs and Projects	23
5.1.5Development of Agricultural and Urban Incentive Based Conservation and Demand Management Programs.....	25
5.1.6Replenishment of Groundwater Extracted by Water Producers	27
5.2 Components Relating to Groundwater Quality Management	27
5.2.1Regulation of the Migration of Contaminated Groundwater	28

5.2.2Development of Saline Water Intrusion Control Programs	29
5.2.3Identification and Management of Wellhead Protection Areas and Recharge Areas	29
5.2.4Administration of Well Abandonment and Well Destruction Program.....	30
5.2.5Well Construction	31
5.2.6Review of Land Use Plans to Assess Risk of Groundwater Contamination.....	31
5.2.7Construction and Operation of Groundwater Management Facilities	32
5.3 Components Relating to Inelastic Land Surface Subsidence.....	33
5.4 Components Relating to Surface Water Quality and Flow	33
Section 6 Groundwater Monitoring Programs and Plans.....	34
6.1 Groundwater Monitoring Programs	34
6.2 Monitoring Plans.....	39
Section 7 Implementation of the Groundwater Management Plan	42
Section 8 References.....	44

List of Tables

Table 1	List of Agencies Participating in the Groundwater Management Plan
Table 2	Summary of Climatic Data for Los Banos, and Tracy
Table 3	Chemical Analysis of Selected Constituents in Groundwater

List of Figures

Figure 1	Hydrologic Regions, California
Figure 2	Sub-Basins of the San Joaquin River Hydrologic Region
Figure 3	Boundary of the Groundwater Management Plan
Figure 4	Water Table Elevation, Spring 2004
Figure 5	Water Table Elevation, Spring 2008
Figure 6	Change in Water Table Elevation Spring 1993 to Spring 1998
Figure 7	Change in Water Table Elevation Spring 1998 to Spring 2004
Figure 8	Change in Water Table Elevation Spring 2004 to Spring 2008
Figure 9	Change in Water Table Elevation Spring 1993 to Spring 2008
Figure 10	Change in Water Table Elevation Spring 1998 to Spring 2008

Appendix A

USBR GAMA Water Quality Data for Tracy Subbasin Area

Section 2

The Groundwater Management Area

The DWR divides California into 10 hydrologic regions (HRs), which generally correspond to the State's major drainage areas (DWR, 2003). The HR and the GMA are shown in Figure 1. The San Joaquin River HR was further divided into separate subbasins largely based on political considerations for groundwater management purposes (Figure 2). Figure 2 depicts the groundwater subbasins as described in the DWR Bulletin 118 Update 2003, and the relative location of the GMA boundaries within the subbasins. The GMA lies within the Tracy (5.22-15) and Delta-Mendota (5.22-07) Basins of the San Joaquin River HR, and covers western portions of Merced, Stanislaus and San Joaquin Counties. The GMA is generally bounded:

- on the North by Old River;
- on the west by the Coast Range Mountains, Alamedas County, and those portions of Byron Bethany Irrigation District that lie outside the CVP Service Area;
- on the south by San Luis Water District and Santa Nella Village; and
- on the east by the San Joaquin River and Central California Irrigation District.

The GMA encompasses 173,000 acres. Figure 3 shows the boundaries of the GMA.

The GMA encompasses the following agricultural water supply districts: Banta-Carbona Irrigation District, Westside Irrigation District, West Stanislaus Irrigation District, Patterson Irrigation District, Del Puerto Water District, and the Central Valley Project Service Area (CVPSA) within the Byron-Bethany Irrigation District. Del Puerto Water District includes the former Davis, Foothill, Mustang, Orestimba, Hospital, Kern Canon, Quinto, Romero, Salado, and Sunflower Water Districts. The CVPSA within the Byron-Bethany Irrigation District is the former Plainview Water District. In addition, the GMA encompasses: the City of Tracy (Tracy), the City of Patterson (Patterson), several unincorporated communities, and unincorporated and non-district lands within San Joaquin County represented by the SJFCWCD. A list of the current PAs involved in the GMP-NA is given in Table 1.

Table 1
List of Agencies Participating in the Groundwater Management Plan

- San Luis & Delta-Mendota Water Authority (SLDMWA)

Water or Irrigation District:

- Banta-Carbona Irrigation District (BCID)
- Byron-Bethany Irrigation District (only the CVPSA) (BBID)
- Del Puerto Water District (DPWD)
- Patterson Irrigation District (PID)
- West Stanislaus Irrigation District (WSID)
- Westside Irrigation District (WID)

Cities:

- City of Tracy (Tracy)
- City of Patterson (Patterson)

Non-District Lands:

- San Joaquin County Flood Control and Water Conservation District (SJFCWCD)

flow directions appear to continue to be generally consistent with the northeasterly trend towards the San Joaquin River, as noted above, with some localized variations for well pumping depressions and various minor physiographic features that effect drainage and recharge.

The previous GMP (Stoddard & Associates, 1996) indicated that the average groundwater levels from 1986 through 1993 have declined in the subbasins, but from 1993 through 1994, water levels rose throughout the study area, demonstrating recovery in the groundwater storage system. That report concluded that the study area was in a hydrologically balanced condition over the study period.

As a part of this planning effort, changes in groundwater levels in the upper zone were examined over the 1993 to 2008 period. From Spring 1993 through Spring 1998, the groundwater levels continued to rise throughout most of the GMA (Figure 6). This pattern reversed during the Spring 1998 to Spring 2004 period (Figure 7). From Spring 2004 through Spring 2008, the groundwater levels recovered slightly throughout most of the GMA, with localized areas where water levels continued to decline west of the City of Newman, and northeast of Tracy (Figure 8). Longer-term trends in the groundwater levels can be observed in the figures showing change in groundwater levels from 1993 through 2008, and 1998 through 2008 (Figure 9 and Figure 10). Over these longer time frames the groundwater levels appeared to be generally hydrologically balanced across much of the GMA throughout the study period, with local areas of consistent decline persisting west of Newman and in the area of Tracy. The change in groundwater levels in the northern part of the subbasin (Tracy to Westley) appears to show a consistent decline in groundwater levels. This decline could be indicative of a developing overdraft condition in that area.

The groundwater levels underlying the vicinity of Patterson appeared to have minimal net change and appeared generally hydrologically balanced through the study period. The DWR groundwater database utilized a number of different wells for groundwater level measurements between 1993 and 2008 for the central part of the GMA (West Stanislaus ID and Patterson ID). Data from close-by monitoring wells was used to calculate groundwater level elevation changes when there was no other information available. For this reason, some actual local elevation changes may differ slightly from those depicted on the groundwater elevation change maps. The minimal apparent net change in groundwater level elevation seems to indicate equilibrium within the GMA between recharge and use during the study period. The change in groundwater levels in the southern part of the subbasin (West of Newman) also appears to show a consistent decline in groundwater levels. This decline could also be indicative of a developing overdraft condition in that area. However, further south in the Merced County portions of the GMA (West of Ingomar), the long-term change in groundwater levels appears to indicate this area is generally hydrologically balanced.

3.6 Groundwater Quality

Between March and July 1985, the United States Geologic Society (USGS) analyzed water samples from 44 wells in the northern part of western San Joaquin Valley (Dubrovsky, et al., 1991). The objective was to assess the geochemical relations and distribution of major ions and selected trace element concentrations in groundwater of the area. Their results indicate a relatively better quality of water in the confined zone than in the semiconfined zone. These results were supportive of those of Hotchkiss and Balding (1971). Concentrations of selected

constituents reported by USGS (Dubrovsky, et al., 1991) in both zones are provided in Table 3. It was concluded that the areal and vertical distributions of groundwater of varying quality has been affected by different agricultural and natural sources of recharge, and the sources and geochemical nature of the sediments are products of a depositional environment.

Table 3
Chemical Analysis of Selected Constituents in Groundwater

State Well No.	Sampling Date	Sulfate	Upper Zone		Boron	As	Se (μ g/L)
			TDS (mg/L)	N			
2S/5E-13P1	3/28/85	320	1400	9.1	2.20	<1	4
3S/6E-07E1	3/11/85	230	1100	6.4	1.60	1	2
4S/7E-33B1	3/12/85	370	1400	0.1	0.90	3	10
5S/7E-01M2	5/01/85	120	750	18.0	0.58	<1	2
5S/8E-22C1	4/30/85	1200	2400	0.9	2.20	3	13
6S/8E-04P1	5/16/85	540	1300	15.0	0.51	<1	4
7S/8E-13N1	3/26/85	300	1900	11.0	0.64	<1	<1
8S/8E-01H1	3/27/85	120	750	11.0	0.48	<1	2

State Well No.	Sampling Date	Sulfate	Lower Zone		Boron	As	Se (μ g/L)
			TDS (mg/L)	N			
2S/5E-21D1	3/27/85	220	650	2.3	1.30	1	3
2S/6E-20L2	5/21/85	140	510	<0.1	0.57	5	<1
3S/5E-20A2	3/28/85	330	920	1.4	3.00	<1	2
3S/6E-26Q1	3/12/85	120	710	5.6	0.79	<1	1
4S/6E-09M1	3/13/85	44	340	9.1	0.43	<1	2
4S/7E-36Q3	3/13/85	120	690	8.3	0.59	<1	1
5S/7E-27B1	5/16/85	190	760	16.0	1.20	1	5
5S/8E-32K3	4/30/85	530	1000	4.0	0.67	1	11
6S/7E-01R1	5/16/85	630	1300	9.6	0.86	1	6
6S/8E-03R2	5/16/85	360	820	6.4	0.41	2	8
7S/8E-27Q1	5/13/85	56	650	10.0	0.47	<1	<1

More recently USGS, in cooperation with DWR, has undertaken a comprehensive study of the groundwater resources within California called the Groundwater Ambient Monitoring and Assessment (GAMA) Program. The GAMA program collects groundwater data for numerous chemical constituents of the water from numerous wells throughout the various groundwater basins within the State. Currently, within the GMA only the initial study of the Northern San Joaquin Study Unit has been published (Faunt, C.C., ed., 2009). This Study Unit consists of four subbasins defined in Bulletin 118 including the Tracy subbasin in western San Joaquin County. The results of that study are presented in the attached Appendix A. The remainder of the GMA lies within the Western San Joaquin Valley Study Unit, which consist of the Delta Mendota subbasin and the Westside subbasin. Publication of initial study of the Western San Joaquin Valley Study Unit is pending and should be available later in 2011.

3.6.1 Hydrochemical Facies

Chemical analyses of groundwater from the semiconfined zone show considerable variation in water type and concentration of dissolved solids (Hotchkiss and Balding, 1971). In general, the chemical character of the water in the upper water bearing zone (except near Patterson and Crows Landing) is a transitional type, i.e., groundwater in which no single anion or cation reacting value amounts to 50 percent or more of the total reacting values. The transitional type groundwater in the GMA occurs in many combinations.

Groundwater near Tracy is very hard. Northwest of Tracy, in the vicinity of the Jones Pumping Plant, groundwater is a chloride type. The sodium chloride type groundwater in the area northwest of Tracy is probably due to infiltration of water from Old River. Old River water varies from transitional chloride bicarbonate to sodium chloride type (Hotchkiss and Balding, 1971).

Sulfate type groundwater occurs in areas located west of Patterson and Crows Landing. Near Patterson, groundwater is sodium magnesium sulfate type to the west and sodium calcium sulfate type to the east. Waring (1915) mentioned some small sulfur springs on Crow and Orestimba Creeks, indicative of sulfate bearing deposits that are probably responsible for the sulfate groundwater type in the area near Patterson (Hotchkiss and Balding, 1971).

3.6.2 Dissolved Solids

Results of the USGS sampling study showed that in the semi-confined zone the total dissolved solids (TDS) concentration ranges from 750 to 2,400 mg/L. Areal distribution of the data shows a high TDS concentration ($>1,500$ mg/L) in groundwater in the semiconfined zone measured near Patterson and west of Newman, and low concentration ($<1,000$ mg/L) is reported near the community of Westley. The TDS concentration in water in the confined zone generally ranged between 500 and 1,000 mg/L. Although high TDS concentrations ($>1,000$ mg/L) in water in the confined zone have been reported southwest of Patterson by the USGS, Patterson has reported TDS concentrations between 600 and 1,000 mg/L (Patterson, 2004). The distribution of TDS in groundwater in the two zones shows little similarity, with the deeper zone showing relatively low TDS, and shallower zone showing almost consistently high TDS.

3.6.3 Sulfate

Sulfate concentrations vary greatly in both water-bearing zones, but areal distribution is similar in both zones. Highest sulfate concentration in groundwater (>500 mg/L) is measured in an area centered near Crows Landing and Patterson. A similar area of high sulfate concentration was also reported by Hotchkiss and Balding (1971) and is likely related to the Coast Range streams that recharge this area (Hotchkiss and Balding, 1971). Smaller sulfate concentrations were reported in 2004 by Patterson, which detected concentrations in a range between 190 and 380 mg/L (Patterson, 2004). In 2004, Tracy reported groundwater sulfate concentrations between 160 and 330 mg/L (Tracy, 2004). The lowest concentrations of sulfate in groundwater (<100 mg/L) were measured in an area south of Vernalis. The similarity of sulfate concentrations in the GMA could result from the presence of similar sulfate concentrations in the streams that were the major source of recharge under natural conditions over a long period of time.

3.6.4 Boron

Concentrations of boron in groundwater range from 0.48 to 2.2 mg/L in the semiconfined zone and from 0.41 to 3.0 mg/L in the confined zone. Areal distribution of boron in the semiconfined zone shows high concentrations (>0.75 mg/L) near Tracy and northeast of Crows Landing near Patterson. The areal distribution of boron in the confined zone shows high boron concentrations (>0.75 mg/L) near Tracy, Vernalis and west of Patterson. This agrees with the results presented by Tracy (Tracy, 2004). The U.S. Environmental Protection Agency (EPA) suggested criterion for boron concentration in water used for long-term irrigation of sensitive crops is 0.75 mg/L. This limit was exceeded in four samples in the semiconfined zone and five samples in the confined zone (Table 3).

3.6.5 Arsenic

Recently, the federal primary drinking water standard maximum contaminant level (MCL) for arsenic was lowered from 50 µg/L to 10 µg/L. This change became effective for all states as of January 23, 2006, and California's revised arsenic MCL of 0.010 mg/L (equivalent to 10 micrograms per liter, µg/L) became effective on November 28, 2008 (DPH, 2008). Currently, the California standard is consistent with the federal standard. Arsenic is typically derived by dissolution of igneous parent materials, and released from iron and manganese oxides when pH declines. Based on the USGS study, arsenic concentrations in the groundwater samples from the semi-confined aquifer in the GMA vicinity ranged between 1 and 38 µg/L, which at that time were below the MCL (Dubrovsky, et al, 1991). Based on the USGS study, arsenic concentrations in the groundwater samples from the confined aquifer in the region ranged between 1 and 18 µg/L. Within the GMA the highest reported arsenic concentrations were 3 µg/L and 5 µg/L, respectively. In both aquifers, arsenic concentrations were reported that exceeded the current MCL in the vicinity of the GMA, but none within the GMA. The arsenic distribution between the groundwater in the semi-confined and confined aquifers showed little difference. However, the areal distribution showed an increase in arsenic concentrations in the GMA toward the southeast. The concentrations increased in the Sierran sediments. The increase is probably related to the higher proportion of Sierra sediments in the profile towards the southeast. In their respective water quality reports, Tracy reported arsenic concentrations as high as 3 µg/L, and Patterson reported arsenic concentrations as high as 6 µg/L, which are below the current MCL (Tracy, 2004; Patterson, 2004).

3.6.6 Selenium

Selenium concentrations in the GMA groundwater range from a less than detectable limit of 1 µg/L to 13 µg/L (Table 3). The current MCL for selenium in drinking water is 50 µg/L. The selenium MCL concentration was equaled or exceeded in two samples from the unconfined zone and in one sample from the confined zone. The concentration and areal distribution of selenium were similar in both zones. Selenium concentrations are relatively high (10 µg/L) in a narrow area of both zones between Patterson and Crows Landing. Lower concentrations (between 3 and 8 µg/L) were reported in 2004 by Patterson (Patterson, 2004). However, higher concentrations (non-detect to 10 µg/L) were reported in 2009, consistent with the range shown in Table 3 (Patterson, 2009). In the Tracy and Vernalis area, the selenium concentrations range between 1

$\mu\text{g/L}$ to 5 $\mu\text{g/L}$. The USGS (Dubrovsky, et al., 1991) study concluded that selenium was transported to the area under natural conditions by runoff from the Coast Range.

3.6.7 Nitrate

The MCL for nitrate in drinking water is 45 mg/L. The USGS (Dubrovsky, et al., 1991) sampling study indicated that no well water in the GMA exceeds the MCL for nitrate. This agrees with the results presented by Tracy (Tracy, 2009). However, Dubrovsky et al (1991) mentioned that there were reports of nitrate MCL exceedance in shallow domestic wells. In general, higher nitrate concentrations in groundwater exist along the west side of the GMA and in the Westley area. The areas along the San Joaquin River have lower nitrate concentrations (Hotchkiss and Balding, 1971).

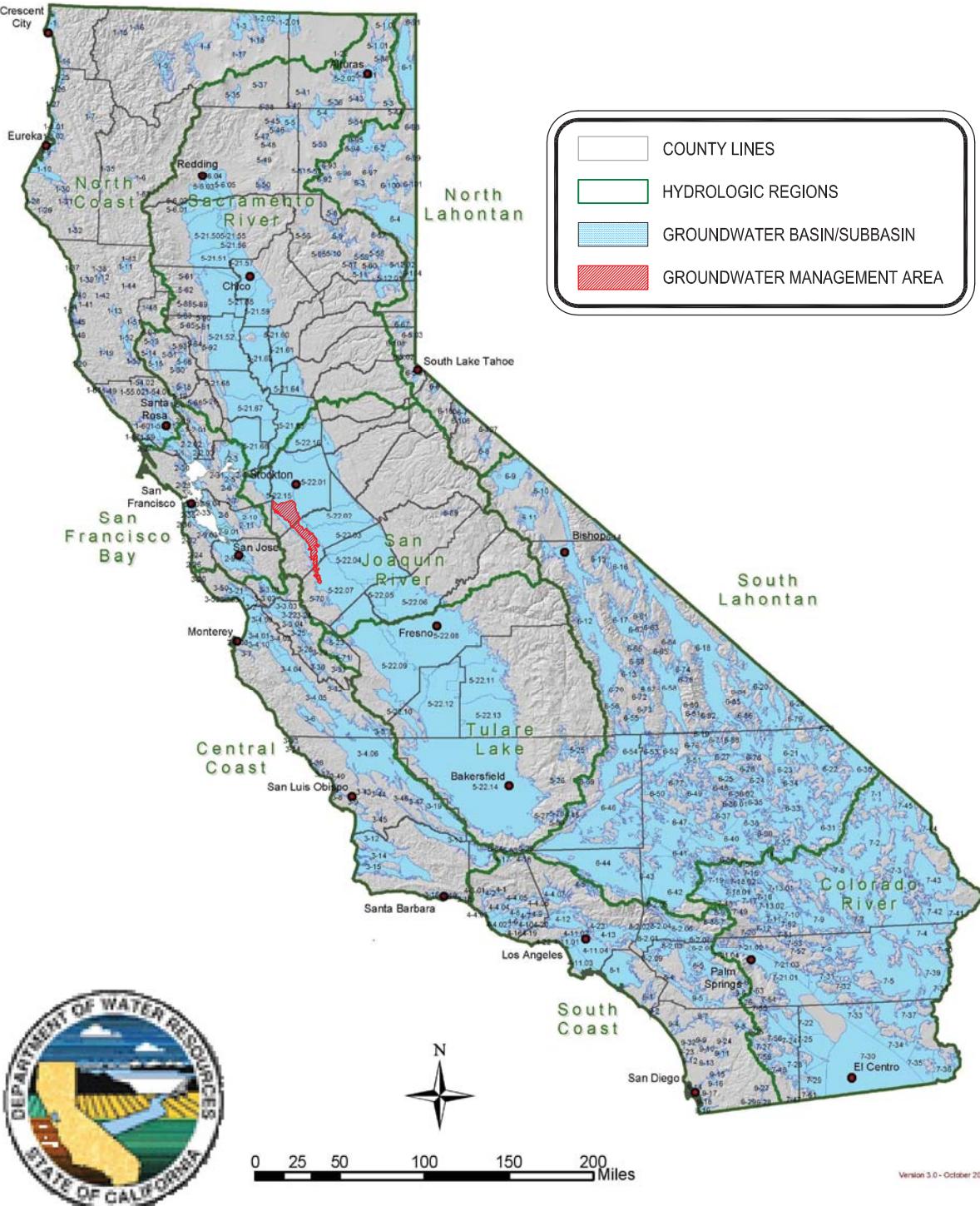
Within both the Tracy and Patterson areas, the quality of the municipal potable water supply is routinely monitored as required by State law. Historical data provided by Patterson for municipal supply wells shows a possible long term trend of increasing nitrate concentrations in some wells, Wells 4, 6 and 8, (Patterson, 2010). These wells tend to be located in the western portion of the distribution network for the City. Well No. 4 had to be removed from operation recently, in 2007, due to continued exceedance of the primary MCL. Upon entering service, nitrate concentrations in Well No. 4 were near the MCL and had remained marginal with water quality frequently at or near the MCL and a few occurrences where sample results had exceeded the MCL during this period of operation. All other wells in operation in Patterson remain viable and show no signs of an increasing trend in nitrate concentrations.

3.6.8 Trace Elements

The Deverel et al. (1984) study (reported by Dubrovsky, et al., 1991) states that the shallow groundwater, near the top of the semiconfined zone and less than 30-feet below the land surface, generally has higher trace element concentrations than the deeper zones. This study indicates that the higher trace element concentrations in the shallow groundwater might correlate with the generally higher TDS concentrations in the shallow groundwater. The higher concentrations probably result from leaching of soil salts and evaporative concentration of shallow groundwater near the land surface.

Because of the high variability of groundwater quality in the GMA, focused groundwater supply investigations are necessary to determine if groundwater is suitable for an intended use. Additionally, management practices must be designed and implemented to maintain or improve groundwater quality to meet the differing needs of the users within the GMA.

Groundwater Basins in California



0 25 50 100 150 200 Miles

Version 3.0 - October 2003

AECOM

AECOM USA, Inc.
 1120 W. 1 St.
 LOS BANOS, CA 93635, SUITE "C"
 T 209-826-5155 F 209-826-3307
 www.aecom.com

SAN LUIS DELTA MENDOTA WATER AUTHORITY

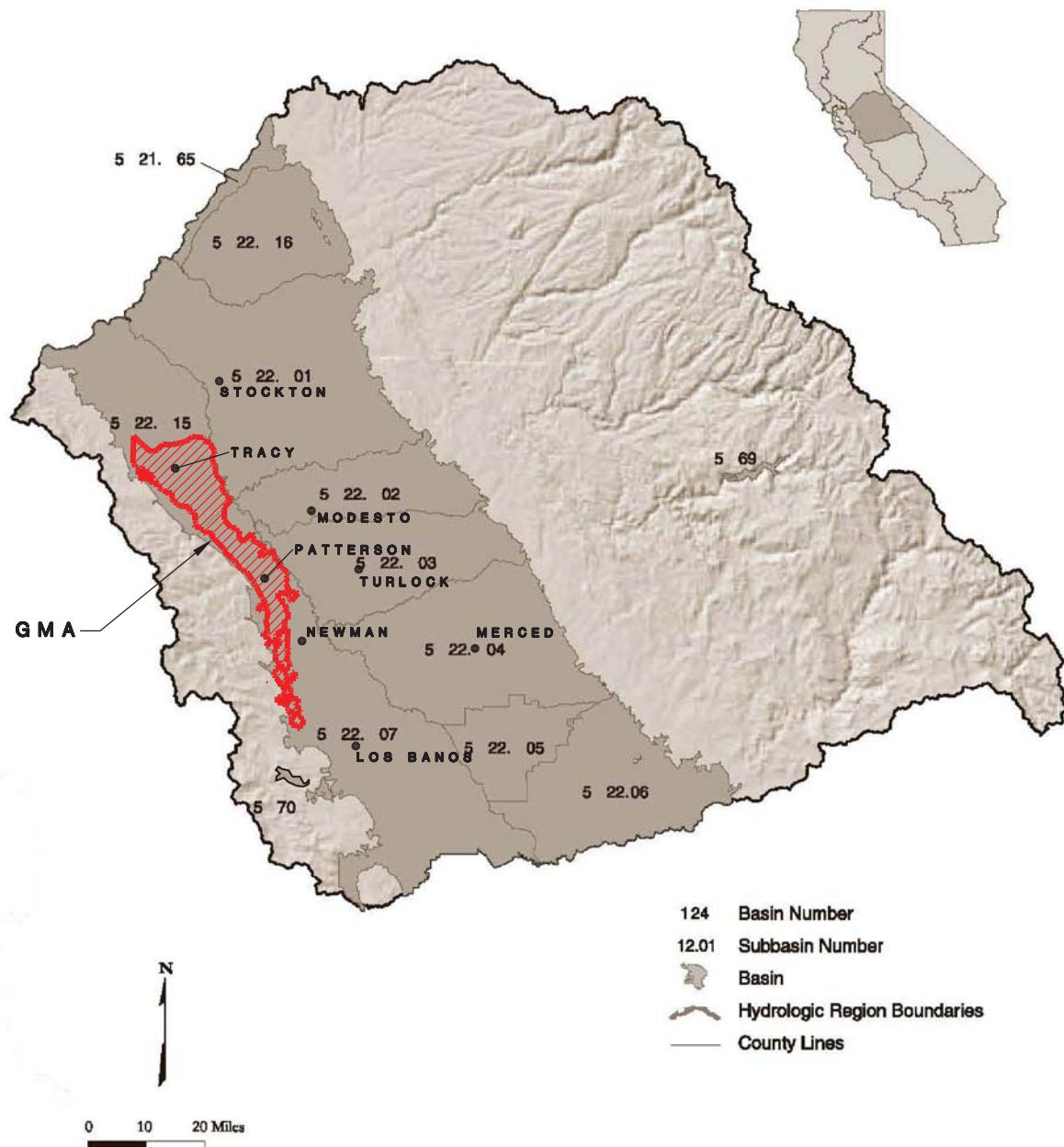
HYDROLOGIC REGIONS, CALIFORNIA

AECOM
 PROJECT NO.

60185608

FIGURE

1



AECOM

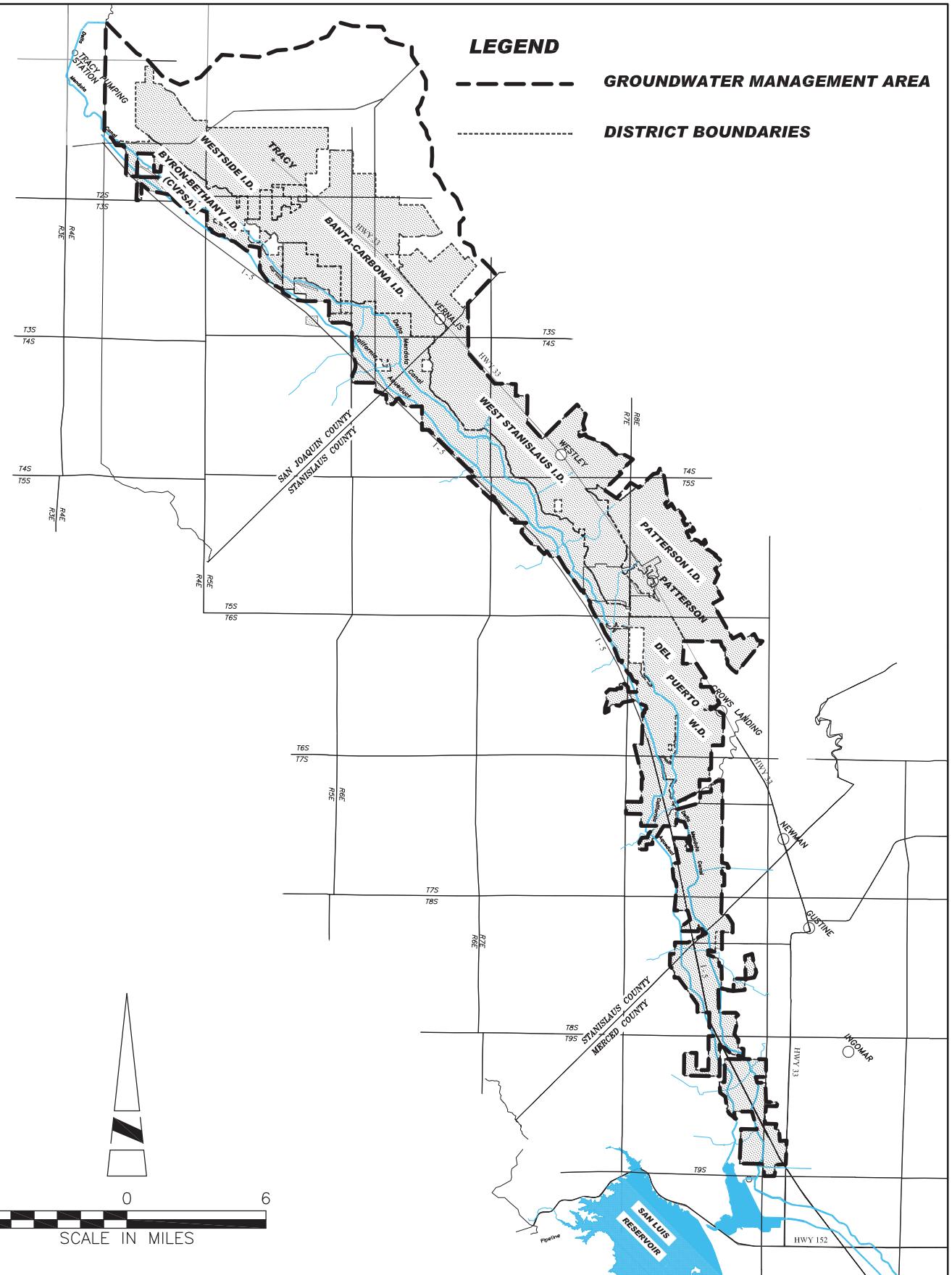
AECOM USA, Inc.
1120 W. 1 St.
LOS BANOS, CA 93635, SUITE "C"
T 209-826-5155 F 209-826-3307
www.aecom.com

SAN LUIS DELTA MENDOTA WATER AUTHORITY

SUB-BASINS OF THE SAN JOAQUIN RIVER
HYDROLOGIC REGION

AECOM
PROJECT NO.
60185608

FIGURE
2



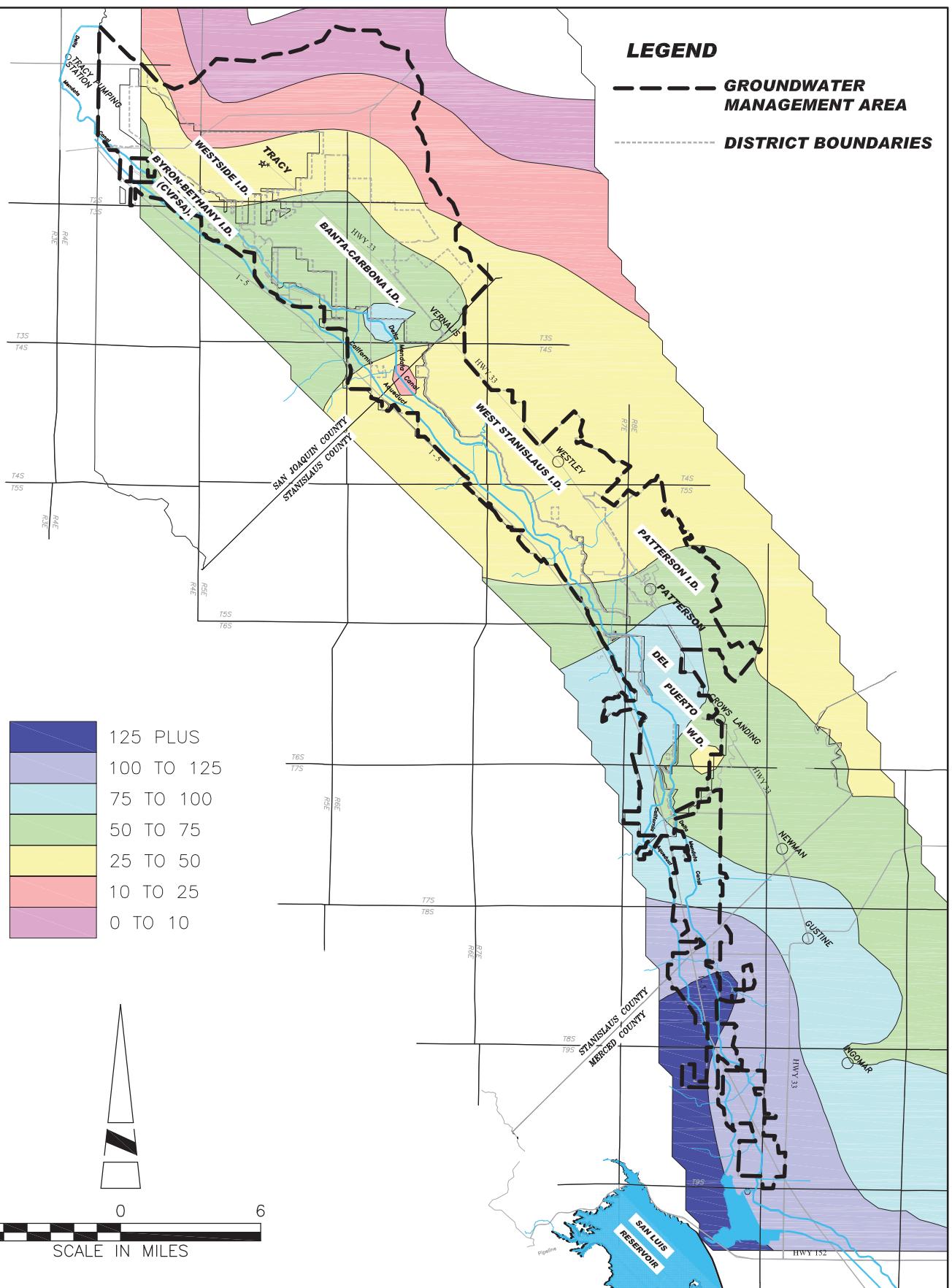
AECOM

SAN LUIS DELTA MENDOTA WATER AUTHORITY

**BOUNDARY OF THE GROUNDWATER
MANAGEMENT PLAN**

AECOM
PROJECT NO.
60185608

FIGURE
3



AECOM

AECOM USA, Inc.
 1120 W. 1 St.
 LOS BANOS, CA 93635, SUITE "C"
 T 209-826-5155 F 209-826-3307
www.aecom.com

SAN LUIS DELTA MENDOTA WATER AUTHORITY

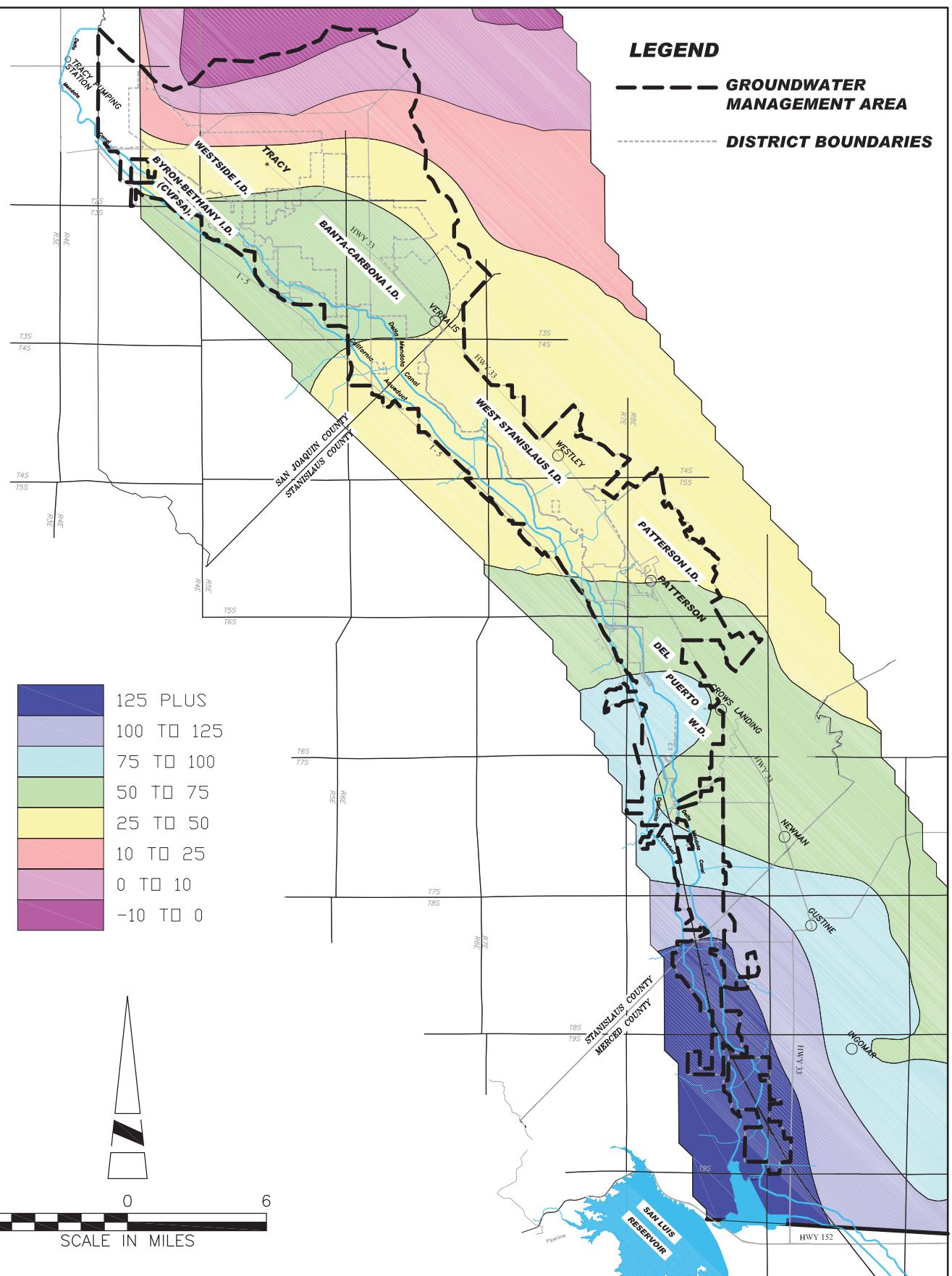
**WATER TABLE ELEVATION
SPRING 2004**

**AECOM
PROJECT NO.**

60185608

FIGURE

4



AECOM

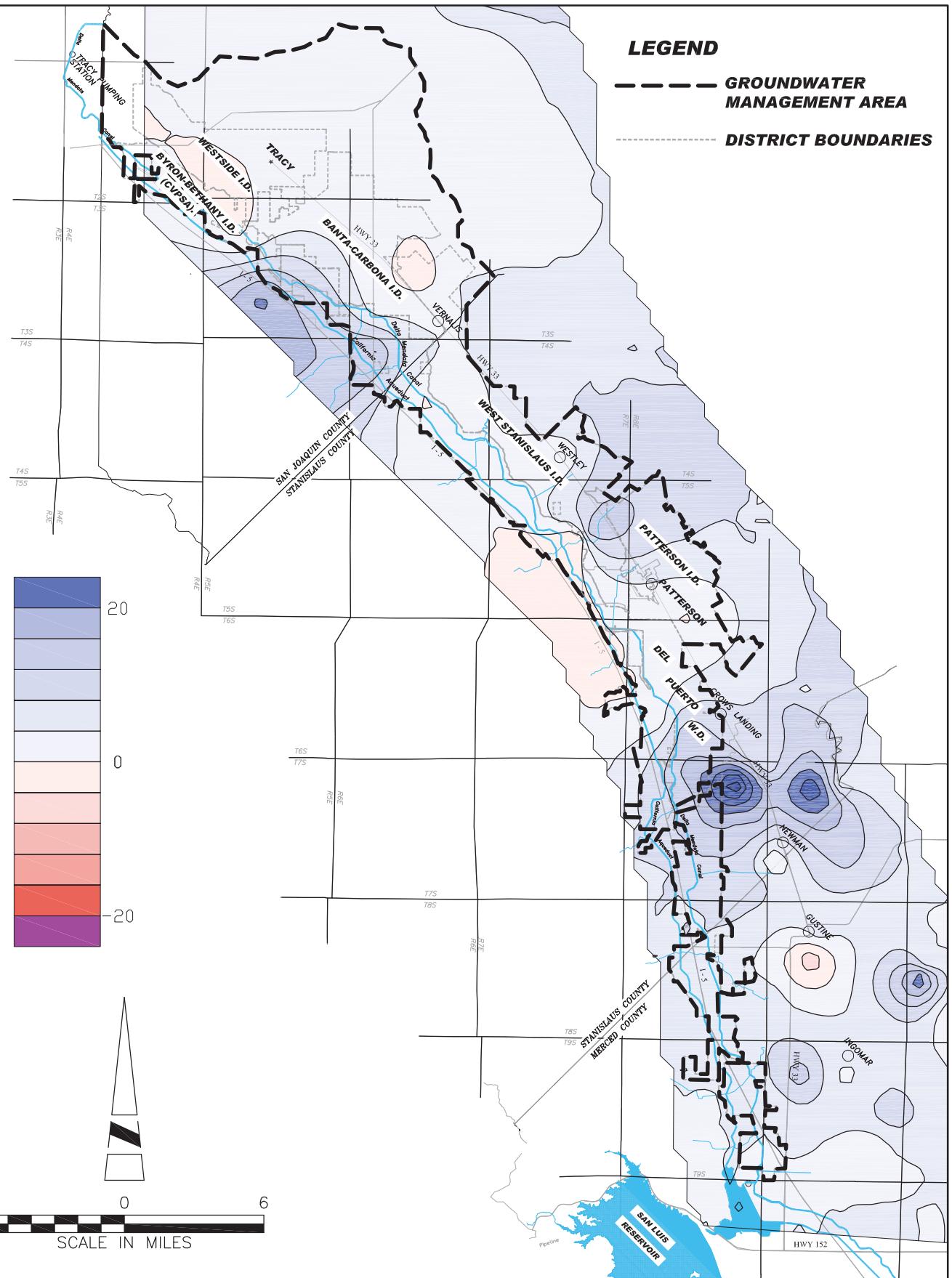
AECOM USA, Inc.
 1120 W. 1 St.
 LOS BANOS, CA 93635, SUITE "C"
 T 209-826-5155 F 209-826-3307
www.aecom.com

SAN LUIS DELTA MENDOTA WATER AUTHORITY

WATER TABLE ELEVATION
 SPRING 2008

AECOM
 PROJECT NO.
 60185608

FIGURE
5



AECOM

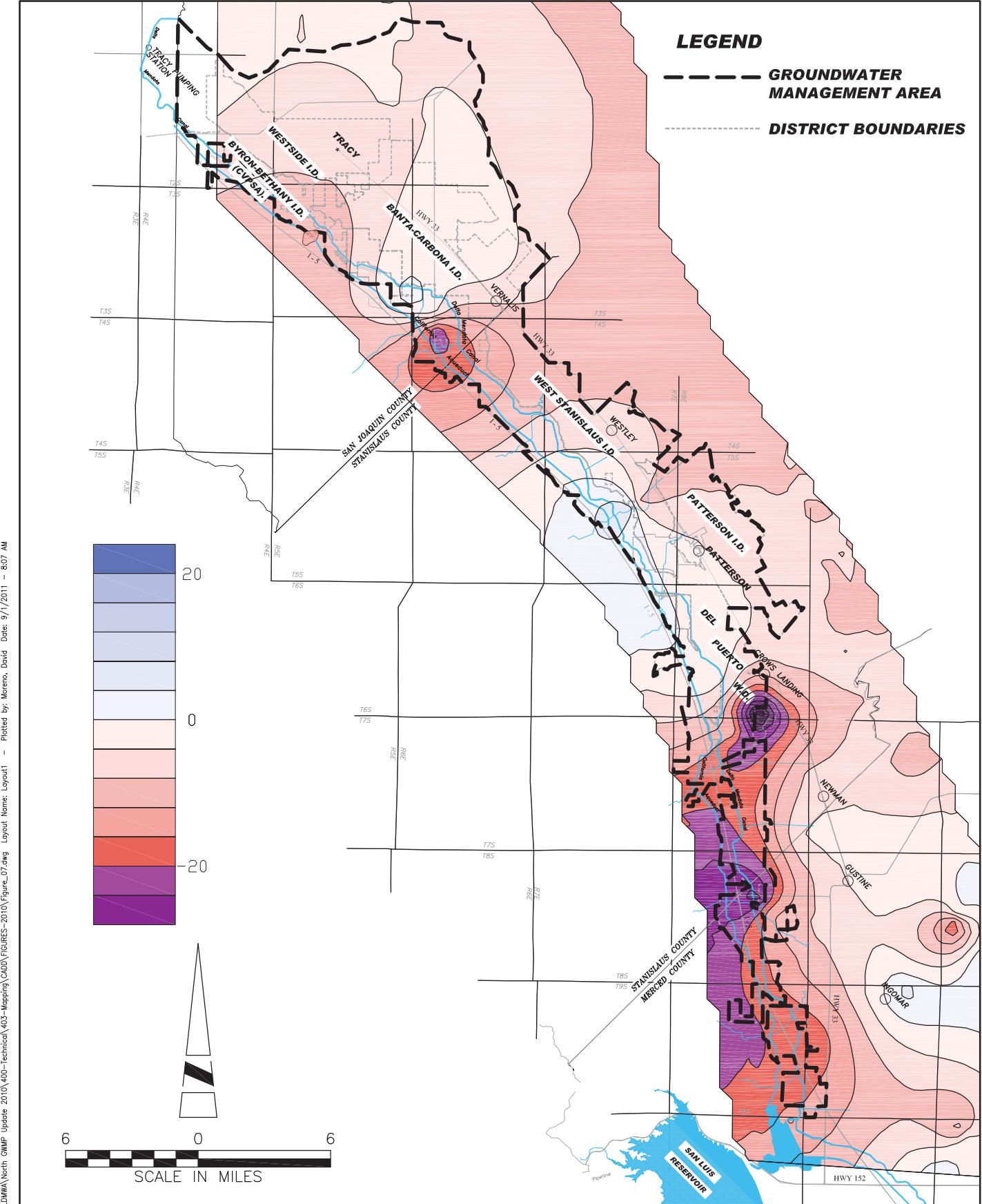
AECOM USA, Inc.
1120 W. 1 St.
LOS BANOS, CA 93635, SUITE "C"
T 209-826-5155 F 209-826-3307
www.aecom.com

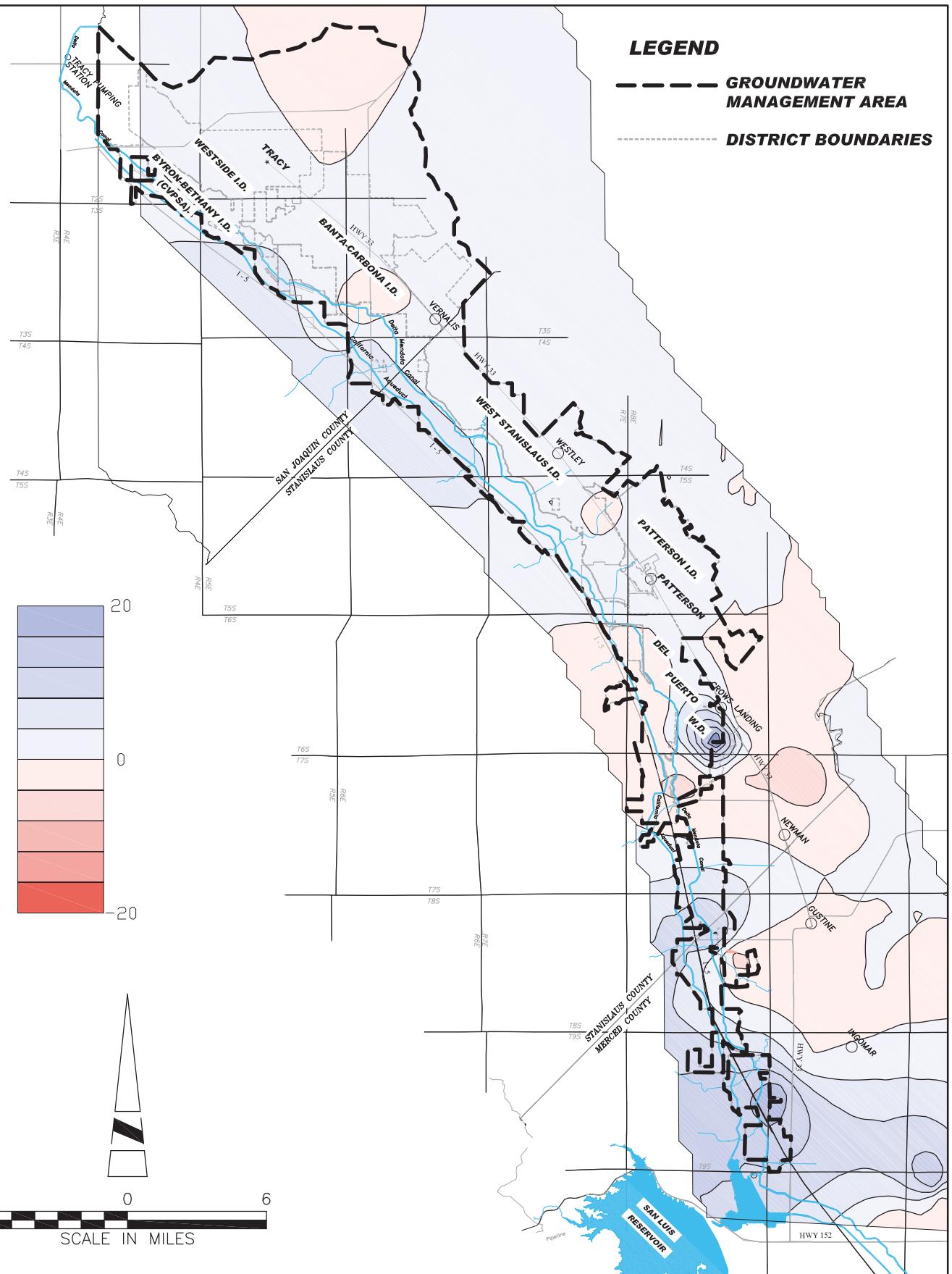
SAN LUIS DELTA MENDOTA WATER AUTHORITY

**CHANGE IN WATER TABLE ELEVATION
SPRING 1993 TO SPRING 1998**

AECOM
PROJECT NO.
60185608

FIGURE
6





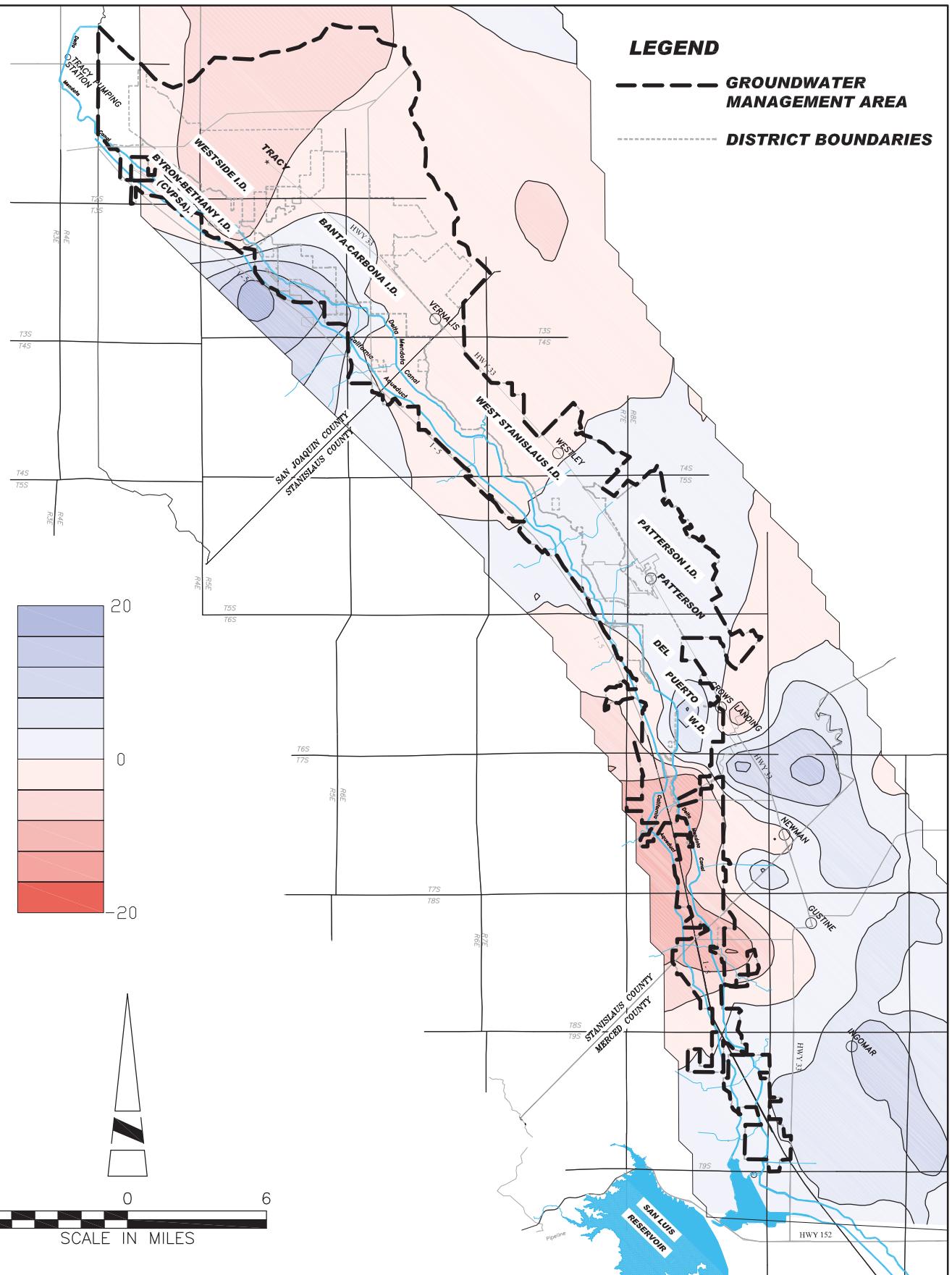
AECOM

AECOM USA, Inc.
 1120 W. 1 St.
 LOS BANOS, CA 93635, SUITE "C"
 T 209-826-5155 F 209-826-3307
www.aecom.com

SAN LUIS DELTA MENDOTA WATER AUTHORITY

AECOM
 PROJECT NO.
 60185608

FIGURE
 8



AECOM

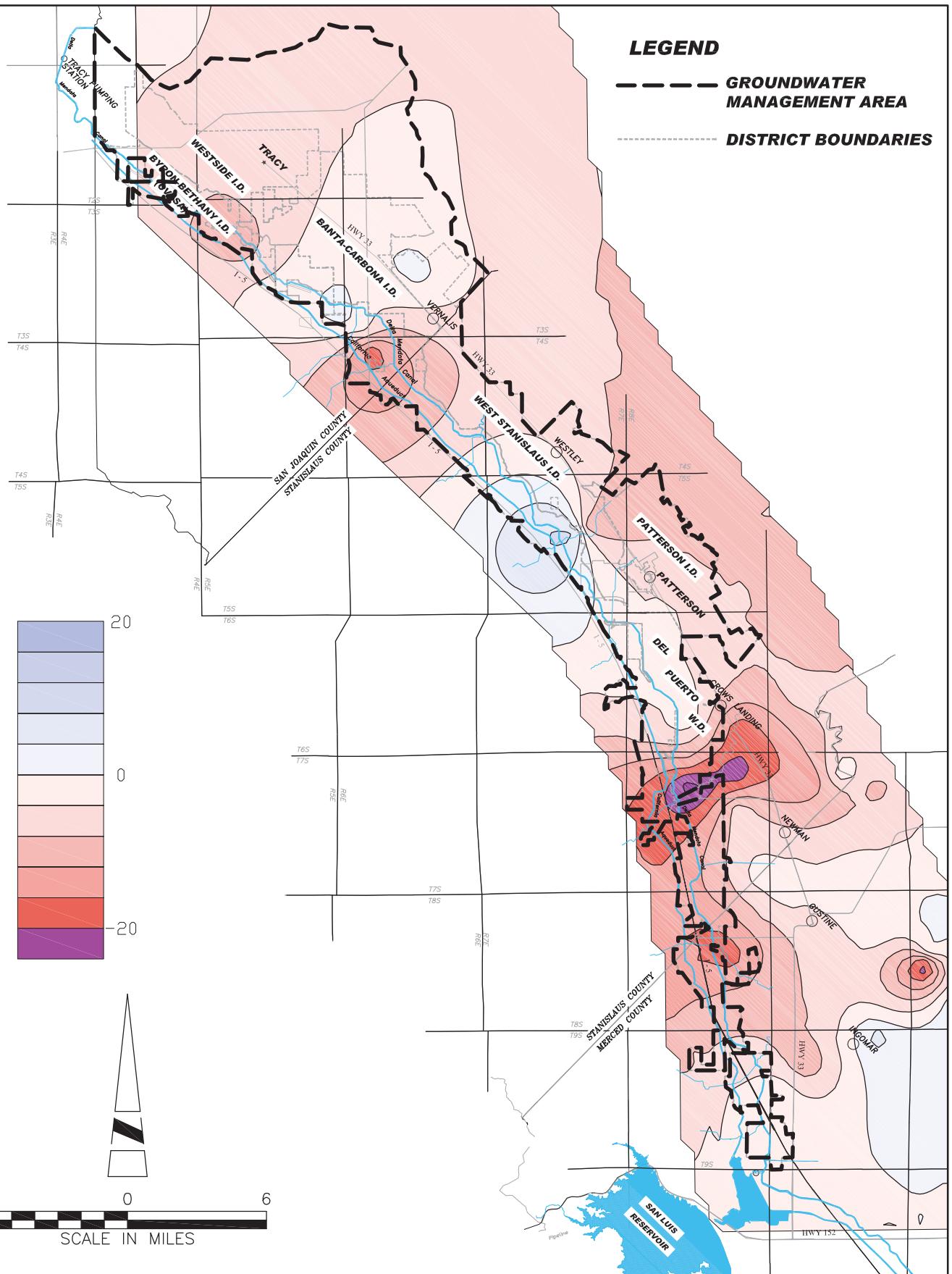
AECOM USA, Inc.
 1120 W. 1 St.
 LOS BANOS, CA 93635, SUITE "C"
 T 209-826-5155 F 209-826-3307
www.aecom.com

SAN LUIS DELTA MENDOTA WATER AUTHORITY

**CHANGE IN WATER TABLE ELEVATION
 SPRING 1993 TO SPRING 2008**

AECOM
 PROJECT NO.
 60185608

FIGURE
9



AECOM

AECOM USA, Inc.
 1120 W. 1 St.
 LOS BANOS, CA 93635, SUITE "C"
 T 209-826-5155 F 209-826-3307
www.aecom.com

SAN LUIS DELTA MENDOTA WATER AUTHORITY

**CHANGE IN WATER TABLE ELEVATION
 SPRING 1998 TO SPRING 2008**

AECOM
 PROJECT NO.
 60185608

**FIGURE
 10**

**APPENDIX J:
GROUNDWATER MANAGEMENT POLICY MITIGATED NEGATIVE DECLARATION
(EXCERPTED)**

GROUNDWATER MANAGEMENT POLICY

MITIGATED NEGATIVE DECLARATION

PREPARED FOR:

CITY OF TRACY
520 TRACY BOULEVARD
TRACY, CA 95376

PREPARED BY:

PMC
PACIFIC MUNICIPAL
CONSULTANTS

10461 OLD PLACERVILLE ROAD, SUITE 110
Sacramento, CA 95827
916-361-8384

APRIL 2001

MITIGATED NEGATIVE DECLARATION

FOR THE

GROUNDWATER MANAGEMENT POLICY

CITY OF TRACY

Prepared for:

CITY OF TRACY
Development and Engineering Department
520 Tracy Boulevard
Tracy, CA 95376

Prepared by:

PACIFIC MUNICIPAL CONSULTANTS
10461 Old Placerville Road, Suite 110
Sacramento, CA 95827
916.361.8384
Fax: 916.361.1574

APRIL 2001

TABLE OF CONTENTS

1.0	INTRODUCTION	
1.1	Introduction and Regulatory Guidance	1-1
1.2	Background and Purpose	1-1
1.3	Lead Agency	1-2
1.4	Purpose and Document Organization	1-2
2.0	PROJECT DESCRIPTION	
2.1	Project Location	2-1
2.2	Background	2-1
2.3	Proposed Project	2-3
2.4	Project Approvals	2-7
2.5	Alternative Water Supply Sources	2-11
3.0	ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES	
3.1	Land Use Planning, Population, and Housing	3-3
3.2	Geophysical (Earth)	3-6
3.3	Water	3-9
3.4	Air Quality	3-15
3.5	Transportation/Circulation	3-17
3.6	Biological Resources	3-19
3.7	Energy and Mineral Resources	3-21
3.8	Hazards	3-22
3.9	Noise	3-24
3.10	Public Services	3-26
3.11	Utilities and Service Systems	3-28
3.12	Aesthetics	3-30
3.13	Cultural Resources	3-31
3.14	Recreation	3-34
3.15	Mandatory Findings of Significance	3-35
4.0	DETERMINATION	
5.0	REPORT PREPARATION AND REFERENCES	
APPENDICES		
Appendix A	City of Tracy Estimated Groundwater Yield Study	

LIST OF FIGURES

FIGURE NUMBER	PAGE
2-1 Regional Location Map.....	2-2
2-2 Proposed Monitor Well Sites.....	2-5
2-3 Typical Cross-Section of a Monitor Well.....	2-6

2.0 PROJECT DESCRIPTION

2.1 PROJECT LOCATION

The Tracy Planning Area, as considered by the 1993 General Plan/Urban Management Plan (UMP), includes the City of Tracy, as well as approximately 63,000 acres of adjacent land located within San Joaquin County. The City of Tracy regional location is shown in Figure 2-1. The Tulare Formation, the City of Tracy's groundwater resource, consists of groundwater-bearing materials composed of poorly sorted gravelly material, including clay, sand, and silt underlying the Tracy Planning Area. These materials, which contain fresh groundwater, are referred to as the Tulare Formation of the Central Valley groundwater basin. Corcoran clay, laterally expansive clay up to 100 feet thick, separates the upper aquifer zone, which is up to 200 feet thick, from the lower aquifer zone, which is up to 650 feet thick.

2.2 BACKGROUND

The City of Tracy currently obtains water from both surface water and groundwater sources. The City, as a public purveyor of water, excises its appropriative right to utilize groundwater for beneficial use by the public. However, the UMP identified constraints to planned growth associated with water supply and the City's continued reliance on groundwater. The 1993 UMP EIR and the 1994 Water Master Plan suggested gradual phase out of groundwater as a regular water supply for the City after additional surface water supplies have been identified and acquired. Although additional surface water supplies have been identified and appear adequate to meet the City's need at projected UMP buildout, the final acquisition of these new surface water supplies would likely occur over the next two to five years.

The groundwater resources available in the Tracy Planning Area were analyzed in 1990. Based on a report prepared by Kennedy/Jenks/Chilton, the City recognized a "safe yield" from the Tulare Formation of 6,700 acre-feet a year (AFY), and adopted the report's recommendation that the City produce no more than 6,000 AFY in groundwater from the formation. The safe yield identified by Kennedy/Jenks/Chilton was based on the maximum historical withdrawal of 5,200 AFY, plus 1,500 AFY based on abandonment of a well by the West Side Irrigation District. Since 1974, total groundwater production from the Tulare Formation for use in the Tracy Planning Area has ranged from approximately 500 AFY to 5,800 AFY.

The City of Tracy adopted and certified the Urban Management Plan (UMP) and Environmental Impact Report (UMP EIR) in September 1993 (State Clearinghouse No. 19092060). The UMP directs growth in the Tracy Planning Area (TPA) to ensure well planned and managed growth for the benefit of current and projected future populations of the City at ultimate buildout. The UMP EIR noted that the City obtains surface water from the Delta-Mendota Canal and groundwater from City-owned wells. The UMP EIR included a series of mitigation measures intended to prevent overdraft conditions and phase out the use of and reliance upon groundwater for water supply as new surface water supplies were acquired. However, as noted in the UMP EIR, the Tulare Formation had not experienced overdraft conditions in the TPA.

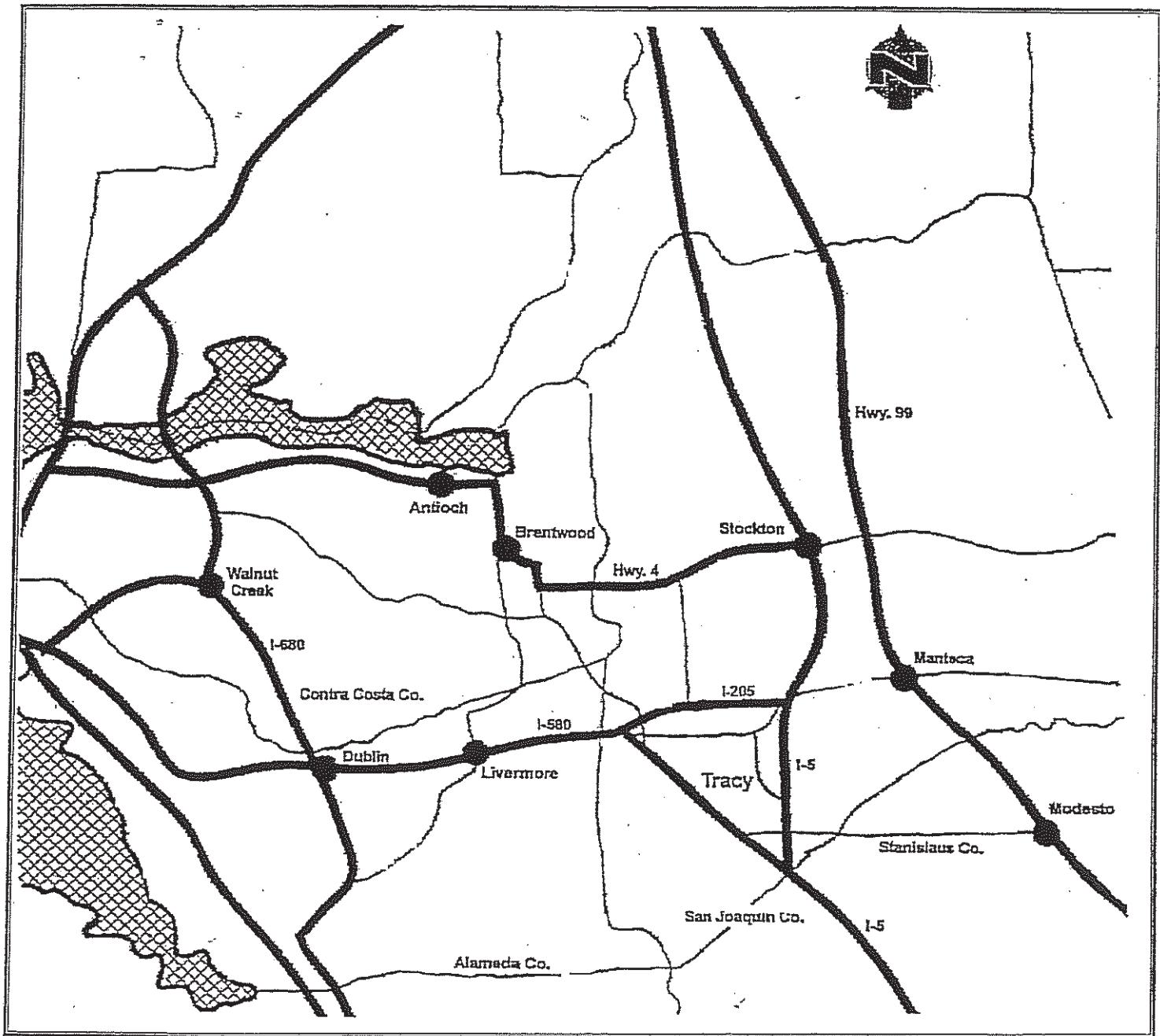


FIGURE 2-1
REGIONAL LOCATION MAP

2.0 PROJECT DESCRIPTION

The City's 1994 Water Master Plan recommended that the coordinated management and use of groundwater and surface water resources ("conjunctive use") continue until additional surface water supplies were acquired, with a gradual phase out of groundwater as a supply. The Water Master Plan noted that the biggest challenge to the City would be securing enough surface water supplies to meet the needs of projected growth.

A groundwater management plan for eight governmental entities, including the City of Tracy, was completed in April 1996. The Groundwater Management Plan (GMP) is titled, "Groundwater Management Plan for Northern Agencies in the Delta-Mendota Canal Service Area and a Portion of San Joaquin County" and prepared by Stoddard & Associates for the San Luis & Delta-Mendota Water Authority. The City adopted this plan under Ordinance No 511. The plan included a hydrologic inventory of the and was designed to assess impacts to the groundwater basin and optimize sustained use of groundwater resources. Various elements of the plan included; monitoring of groundwater levels and storage, facilitating conjunctive use operations, coordination with state and federal regulating agencies, regulation of contaminant migration into groundwater of the northern sub-basin, well construction, construction and operation of groundwater management facilities, mitigation of groundwater overdraft, etc.

Based on recommendations of the 1993 Urban Management Plan (UMP) and 1994 Water Master Plan, the City of Tracy typically requires that all new major developments to secure sufficient surface water supplies. Existing and projected surface water supplies have been identified and appear adequate to meet the City's needs on a long-term basis. However, the final acquisition of these new surface water supplies is anticipated to occur over the next two to five years.

2.3 PROPOSED PROJECT

Additional surface water supplies have been identified and appear adequate to meet the City's need. However, the final acquisition of these new surface water supplies is anticipated to occur over the next two to five years. The City is proposing as a policy to utilize additional groundwater above the City's current production rate in order to provide an interim water source until new surface water sources are secured as well as provide the City with an emergency water supply source in the event of failure or contamination of the City's surface water supply sources. This additional water source may be utilized as a permanent source if adequate surface water sources never become available.

In order to determine if additional groundwater resources are available in the Tracy area, the City conducted a groundwater analysis. The Estimated Groundwater Yield Study, prepared by Bookman-Edmonston Engineering (see **Appendix A**) provides an evaluation of potential groundwater yield and determined that a 2,300 AFY increase of the average annual operational groundwater yield over the yield recommended in the 1990 Kennedy/Jenks/Chilton study can be provided within the estimated sustainable yield without adverse impact to groundwater resources or quality in the Tracy area over a fifty year timeframe. This expansion of groundwater usage to 9,000 AFY would be within the City's estimated share of the aquifer's sustainable yield of 22,000 AFY of the 28,000 AFY total (this includes groundwater usage by West Side Irrigation District, Naglee-Burk Irrigation District, Plain View Water District and Banta-Carbona Irrigation

2.0 PROJECT DESCRIPTION

District) and would result in groundwater level drop of 10 feet, but would stabilize at this level (Bookman-Edmonston, 2001). The additional groundwater production would be an operational change and would not require the construction of additional wells or distribution facilities.

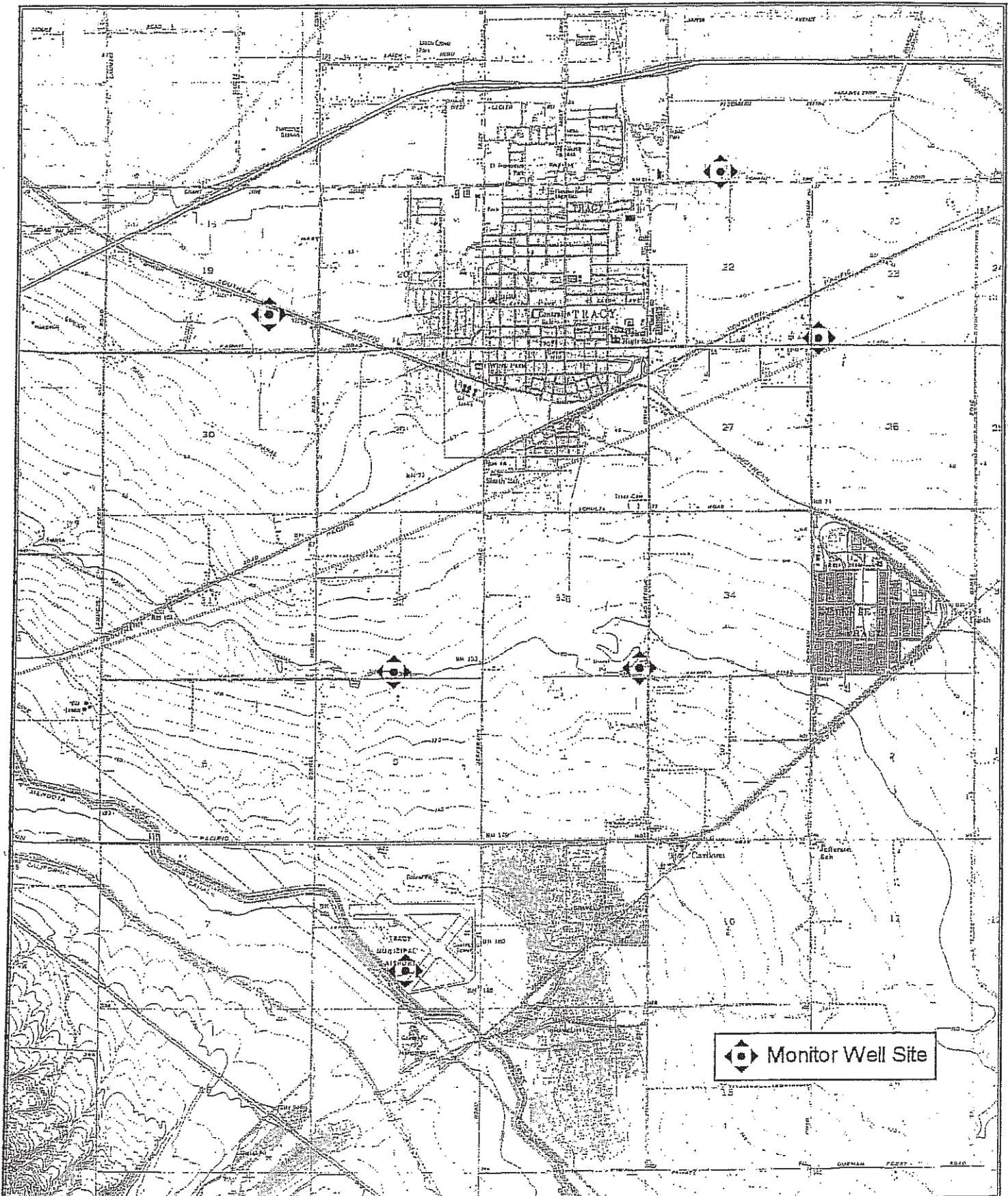
The Estimated Groundwater Yield Study was based on quantitative and qualitative analyses, historic rates of groundwater use and changes in groundwater conditions, as well as utilization of prior groundwater studies including the following:

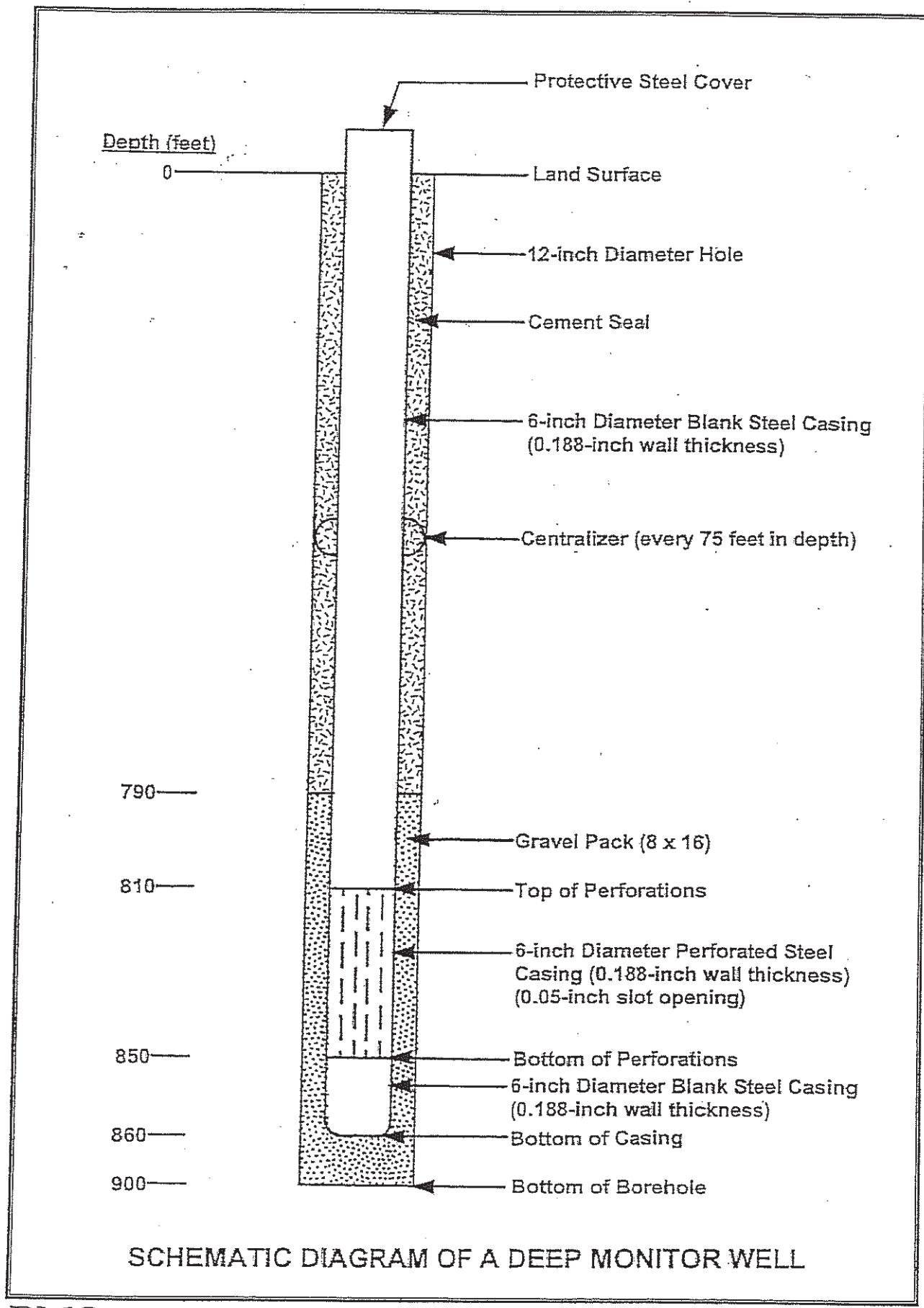
- G.H. Davis et al., *Groundwater Conditions and Storage Capacity in the San Joaquin Valley, California*, USGS Water Supply Paper 1469, 1959.
- W.R. Hotchkiss and G.O. Balding, *Geology, Hydrology, and Water Quality of the Tracy-Dos Palos Area, San Joaquin Valley, California*, USGS Open File Report 72-169, August 6, 1971.
- U.S. Geology Survey, *Groundwater Flow in the Central Valley, California, Regional Aquifer System Analysis*, Professional Paper 1401-D.
- Kennedy/Jenks/Chilton, *Tracy Area Groundwater Yield Evaluation: Final Report*, November 1990.

The Estimated Groundwater Yield Study also considered cumulative groundwater usage in the study area by the City and adjacent irrigation districts (West Side Irrigation District, Naglee-Burk Irrigation District, Plain View Water District and Banta-Carbona Irrigation District).

In addition to identification of increased groundwater production in the Tracy area, Bookman-Edmonston Engineering recommends the establishment of groundwater monitoring network for groundwater quality and subsidence, which is included in the proposed Policy. Specifically, up to six monitor well sites would be installed around the City as shown in Figure 2-2. A typical cross-section of the monitor well is shown in Figure 2-3. Each monitor well would be a multiple completion well and would consist of three separate 12-inch diameter holes with 6-inch casings and 2 by 2.5 foot above ground concrete caps installed within 50 feet of each other and would monitor three specific portions of the aquifer below the Corcoran Clay confining layer. These monitored portions of the aquifer would be shallow (380 to 480 feet in depth), intermediate (610 to 690 feet in depth) and deep (780 to 870 feet in depth). Five wells are located near roadways including; Grant Line Road, Byron Road, Valpicao Road, corner of Valpico and MacArthur, and the corner of East 11th Street and Chrisman Road. The sixth monitor well would be located at the Tracy Airport.

These wells would be constructed in two phases. The first phase would be the three well sites west of the City. The second phase would install the remaining well sites. Water level readings would be taken at each monitor well and water supply well each month, while water quality sampling would be taken quarterly from each monitor well and would sample for the following constituents:





2.0 PROJECT DESCRIPTION

- Major cations
- Major anions
- Iron
- Manganese
- Arsenic
- Chromium
- Fluoride
- Alpha activity
- Boron
- PH
- Total dissolved solids
- Electrical conductivity

In addition to water quality monitoring, ground survey monitoring would be conducted to evaluate potential land subsidence from increased groundwater production. This would involve the installation of a benchmark at each monitor well and active production well. If significant subsidence is observed, a compaction well may be installed to further evaluate subsidence impacts.

Adoption of this proposed Policy would implement recommendations of the Groundwater Management Plan for the Northern Agencies in the Delta-Mendota Canal Service Area and a Portion of San Joaquin County, which identified the need for groundwater analysis and monitoring at the local level in the region.

2.4 PROJECT APPROVALS

Based on the results and recommendations of the Estimated Groundwater Yield Study, the Tracy City Council would adopt the following policy associated with increased groundwater production:

GROUNDWATER MANAGEMENT POLICY

Based on the results of the Estimated Groundwater Yield Study prepared by Bookman-Edmonston Engineering, the City intends to increase groundwater production to provide an interim water source until new surface water sources are secured as well as provide the City with an emergency water supply source in the event of failure or contamination of the City's surface water supply sources. This additional water source may be utilized as a permanent source if adequate surface water sources never become available. The City Council hereby adopts this Policy for the extraction and allocation of 9,000 AFY of groundwater. The proposed 9,000 AFY extraction rate represents an increase of 3,200 acre-feet above the current base extraction rate of 5,800 AFY of groundwater. Of this 9,000 AFY, 6,700 AFY has already been allocated through the actions of the City of Tracy

2.0 PROJECT DESCRIPTION

Capacity Allocation Review Board (CARB) established pursuant to Section 11.16.120 of the City of Tracy Municipal Code. Therefore, the extraction of up to 9,000 AFY represents a potential increased extraction of 2,300 AFY over the 6,700 acre-feet per year currently allocated by the CARB. This groundwater would be extracted from the lower confined aquifer and allocated to specific land uses approved by the City. Details of this Policy are presented below:

A. Process for the Extraction of Groundwater

Groundwater in the City of Tracy is currently extracted by eight existing production wells. Generally, these wells and structures occupy no more than one-quarter acre of land. All well pumping equipment is enclosed in single story physical structures. No new production wells are expected to be added to increase groundwater production. However, up to six monitor wells will be installed within and adjacent to the City to monitor changes in groundwater conditions as a result of increased groundwater production.

B. Process for the Monitoring of Groundwater Extraction

While the Estimated Groundwater Yield Study identifies that no significant adverse impacts to groundwater resources are expected, increasing the extraction of groundwater from the aquifer could impact groundwater water levels, ground subsidence, and groundwater quality. In terms of groundwater levels, increasing the extraction could result in declining groundwater storage to levels at a rate that could exceed the recharge capacity of the basin. Reducing the amount of groundwater in storage could also lead to the dewatering of fine-grained geological strata, thus resulting in land subsidence and a potential reduction in the storage capacity of the aquifer. Finally, increasing groundwater extraction could potentially decrease groundwater quality by increasing or changing the concentrations of organic and inorganic chemical substances, or constituents within the aquifer.

1. Groundwater Level and Subsidence Monitoring

The following process is established to monitor for groundwater level changes and subsidence.

- a. Benchmarks shall be established at each monitor well and active production well and tied to an established local bench circuit to provide the appropriate datum points for elevation measurements.
- b. Groundwater levels shall be measured monthly at each monitor well and active production well and related to the benchmarks to determine changes in groundwater elevation.

- c. On an annual basis the bench circuit, which includes the benchmark at each well site (both production and monitor wells), shall be surveyed to determine if there has been any differential settlement resulting from the increase in groundwater extraction.
- d. A qualified hydrogeologist shall review the groundwater level and ground elevation measurements annually. Contour maps shall be prepared (for the base year and each subsequent year monitoring occurs) and compared to the prior year's maps for evidence of subsidence or adverse changes in groundwater levels or quality. Should adverse changes be noted, recommended operational changes at each production well shall be implemented (e.g., shut down of specific wells, reduction in groundwater extraction rates) if the monitoring results indicate adverse impacts in order to avoid groundwater overdraft and subsidence conditions.
- e. All monitor wells installed in accordance with this Policy will follow all sampling frequencies and protocols outlined in this Policy.

2. Groundwater Quality Monitoring

The following protocols are established to monitor for potential groundwater quality changes due to increased extraction rates:

- a. Groundwater shall be sampled and tested on a quarterly basis for the following constituents.
 - Major Cations
 - Major Anions
 - Iron
 - Manganese
 - Arsenic
 - Chromium
 - Fluoride
 - Alpha Activity
 - Boron
 - PH
 - Total Dissolved Solids
 - Electrical Conductivity
- b. Monitoring for the constituents listed above shall be conducted to ensure that any changes in constituent levels do not exceed the established maximum contaminant

2.0 PROJECT DESCRIPTION

levels (MCL) or public health goals for each identified constituent. Should adverse water quality conditions be noted, recommended operational changes at each production well (e.g., installation of treatment facilities, shut down of specific wells) shall be implemented to protect public health.

- c. Monitoring at all newly constructed monitor wells shall follow the process established above.

C. Allocation of the Groundwater to Development Projects

The City intends to allocate this water to various development projects within the City. A total of 2,300 additional AFY of water (to serve approximately 4,600 "equivalent consumer units") is available from this expanded extraction process, for allocation to approved development projects. In all cases, these projects will be consistent with the City's Urban Management Plan, approved Specific Plans, Development Agreements, Planned Unit Developments, Vesting Tentative Maps, etc., that have received all necessary approvals and are eligible for other findings as part of the CARB/RGMP process forth below. Certain criteria, which will guide the City's allocation of groundwater, are as follows:

1. The City may increase its groundwater production from its current "cap" of 6,700 AFY to 9,000 AFY. This increased production is to provide an interim water source until new surface water sources are secured as well as provide the City with an emergency water supply source in the event of failure or contamination of the City's surface water supply sources. This additional water source may be utilized as a permanent source if adequate surface water sources never become available.
2. The allocation should further the goal to provide a balanced distribution of land uses between residential population, jobs, and ability to provide services. In this context, and yet recognizing current inventory of vested residential projects, approximately 70 percent of the extracted groundwater may be allocated to residential uses, and the remaining 30 percent may be allocated to non-residential uses. Infill projects, whether residential or non-residential, may receive allocations under the above approximate proportions.
3. A maximum of 1,200 equivalent consumer units ("ECUs") of water capacity may be allocated on an annual basis. Water capacity shall not be allocated unless the necessary wastewater capacity is available to the project. The actual number of ECUs may vary from year to year.
4. The project receiving an allocation of groundwater is consistent with the Urban Management Plan.

5. The allocation of groundwater to residential uses should be conducted in accordance with Chapter 10.12 of the Tracy Municipal Code ("Growth Management Ordinance", which establishes and defines RGAs) as amended by Measure A, Chapter 11.16 of the Tracy Municipal Code ("Wastewater Treatment Facilities Capacity Regulation and Allocation", which defines ECUs, and establishes the Capacity Allocation Review Board), as well as the City's Growth Management Guidelines.
6. The allocation of groundwater to non-residential uses should be conducted in accordance with Chapter 11.16 of the Tracy Municipal Code ("Wastewater Treatment Facilities Capacity Regulation and Allocation", which defines ECUs, and establishes the Capacity Allocation Review Board).

2.5 ALTERNATIVE WATER SUPPLY SOURCES

The City is pursuing several sources of additional water supply to meet the needs of planned growth. These sources of water could be expected to be available over varying timeframes and could provide adequate water sources for planned growth in the City without the use of groundwater. These water supply sources are summarized below:

- **Groundwater Banking** - This would involve use of the groundwater basin for water storage and could occur under two options. The first option would involve maximizing the use of surface water resources in lieu of groundwater pumping (i.e., In-Lieu Banking). The groundwater not used would then be available for subsequent use during years when surface water resources are completely utilized. The second option would be to inject surplus water into the groundwater basin for later consumption using the City's existing distribution and well system (i.e., Aquifer Storage and Recovery). The City is currently moving forward with a pilot project to test inject treated surface water into the groundwater basin. The City has received a CALFED grant to pursue groundwater banking.
- **Kern Water Bank (and other Kern County Suppliers)** - The Kern Water Bank (KWB) is located in Kern County, at the southern end of the San Joaquin River valley. The KWB has approximately 50,000 ac-ft of water available for sale on an annual basis for either long-term or short-term deal. The water is highly reliable in all water years. They also have the ability to bank water. They utilize water from the California Aqueduct, Friant-Kern Canal and the Kern River. Kern has an interest in selling water to the City of Tracy either on annual basis or for a long-term contract. Consecutive annual purchases or a long-term water contract would require the CEQA/NEPA process that would likely take two years. Single year water purchased would most likely not require any environmental review to be completed. The City would need to expand its water treatment plant for this water source. California Department of Health Services requirements on the water treatment plant expansion would require the City to construct an intake on the California Aqueduct. On an interim basis, potential water transferred to

2.0 PROJECT DESCRIPTION

- the City would require a third party to become involved in the transfer, because of the City's current location of water intakes are on the Delta Mendota Canal and not on the California Aqueduct. The Santa Clara Valley Water District (SCVWD) has been used in discussion as the potential third party because they have rights to both the CA and the DMC and thus a transfer could be made through them. The City is also investigating the potential for the purchase of other long-term water supplies from suppliers in the Kern County area.
- Purchase of Long-Term Water Contracts** – The City is negotiating with local irrigation districts (e.g., West Side Irrigation District and Banta Carbona Irrigation District) for the purchase of portions of their Bureau of Reclamation contracts. The combined total for the assigned contracts would provide the City with up to 10,000 acre-feet of water per year. This water has agricultural reliability, meaning that the quantity of water delivered would vary significantly year to year depending on hydrologic conditions and endangered species impacts (e.g., 0 to 100 percent reliability). Agreements have been drafted with the districts. Future work includes a CEQA/NEPA environmental document and Bureau approval. These items are anticipated to require two years to complete. This water supply has the potential to supplement City supplies on an annual basis, or to be utilized with a groundwater banking program.
- BBID** - BBID has pre-1914 water rights. The water is also highly reliable in all water years. BBID takes water from the Sacramento-San Joaquin Delta (Delta) just up stream of the State Water Project (SWP) pumps on the California Aqueduct (CA). Use of BBID water by the City would require a water treatment plant expansion. BBID is currently taking the lead in the design and construction of a pipeline from BBID's intake to City WTP. The pipeline is likely to be completed in the next 2 to 3 years.
- SSJID** – The City is currently participating in the South San Joaquin County Irrigation District (SSJID) South County Surface Water Supply Project. The City would receive up to 10,000 acre-feet annually of treated surface water by 2004 under best-case conditions. However, the EIR is currently under litigation, which will likely delay the project.

Even if the City ultimately utilizes one or more of the above sources, increased groundwater production is considered necessary to provide an interim water source until these sources are secured as well as provide the City with an emergency water supply source in the event of failure or contamination of the City's surface water supply sources.

APPENDIX K:
NOTICE OF INTENT TO FORM A GROUNDWATER SUSTAINABILITY AGENCY



City of Tracy
3900 Holly Drive
Tracy, CA 95304

UTILITIES DEPARTMENT

MAIN 209.831.4480
FAX 209.831.4484
www.ci.tracy.ca.us

February 16, 2016

Mr. Mark Norberg, GSA Project Manager
Sustainable Groundwater Management Program
California Department of Water Resources
901 P Street, Room 213A
P.O.Box 942836
Sacramento, CA 94236-0001
Mark.Norberg@water.ca.gov

Subject: *Notice of Intent to become a Groundwater Sustainability Agency
City of Tracy - Tracy Subbasin*

Dear Mr. Norberg:

This letter serves as notification to the California Department of Water Resources that the City of Tracy (City) has elected to become a Groundwater Sustainability Agency (GSA) pursuant to Water Code section 10723.8, and its intent to undertake sustainable groundwater management for that portion of the Tracy Subbasin of the San Joaquin Valley Groundwater Basin (DWR Basin No. 5-22.15) (Basin) that lies within the City. A map and shapefile showing the City limits, which is the proposed area of the GSA is enclosed (Exhibit A).

The City is in discussions with other agencies overlying the Basin, and is interested in working cooperatively with them. To the best of the City's knowledge, the other entities considering formation of a GSA within the Basin boundaries currently include:

Banta-Carbona Irrigation District
Byron-Bethany Irrigation District
San Joaquin County
South Delta Water Agency
West Side Irrigation District

The City has actively conducted outreach to agencies, water providers, and other interested stakeholders with an interest in groundwater management. The City will continue to work cooperatively with interested stakeholders within San Joaquin County, the surrounding areas, and the State of California concerning sustainable groundwater management.

On February 2, 2016, the City of Tracy City Council held a public hearing in accordance with Water Code Section 10723(b), prior to its decision to become the GSA. The public hearing was noticed in accordance with Government Code Section 6066 (Exhibit B).

After holding the public hearing, the City Council adopted the enclosed resolution (Exhibit C) electing to become a GSA within the City boundaries. No new bylaws, ordinances, or authorities were adopted by the City at that time.

Pursuant to Water Code section 10723.2, the City has developed a list of interested parties and will continue to amend the list as necessary during the Groundwater Sustainability Plan (GSP) development process. The City has considered, and will continue to consider, the interests of all beneficial uses and users of groundwater, as well as those responsible for implementing GSPs. The City will solicit feedback and engage in discussions with other interested parties during GSP development. The interested parties include, but are not limited to the following:

- a) Holders of overlying groundwater rights, including:
 - 1. Agricultural users.
The City meets regularly with agricultural irrigation districts within the Basin.
 - 2. Domestic well owners.
The City will consider the interests of domestic well owners and conduct outreach efforts when and where appropriate.
- b) Municipal well operators.
The City operates nine municipal wells within its service area.
- c) Public water systems
The City will collaborate and work in close coordination with public water systems within the County to ensure reliable groundwater supplies in those service areas.
- d) Local land use planning agencies.
The City will recognize and consider the various land use planning authorities during GSP development.
- e) Environmental users of groundwater.
The City will work with any agencies proposing environmental uses of the groundwater within the Basin.
- f) Surface water users, if there is a hydrologic connection between surface and groundwater flows.
The City is a surface water user. The City will collaborate with the surface water users in areas adjacent to the City and work to identify impacts to the interests of surface water users for consideration during GSP development.

- g) Federal government, including, but not limited to, the military and managers of federal lands.
The City has a contractual relationship with the United States Bureau of Reclamation, and will collaborate as appropriate with the federal government in development of the GSP.
- h) California Native Tribes. Not applicable.
- i) Disadvantaged communities, including, but not limited to, those served by private domestic wells or small community systems.
The City will work with agencies within the Basin to collaborate with and consider the disadvantaged communities during GSP development.
- j) Entities listed in Water Code Section 10927 that are monitoring and reporting groundwater elevations in all or part of a groundwater subbasin managed by the GSA.
The City will coordinate with San Joaquin County and the San Luis & Delta-Mendota Water Authority to continue to collect data during GSP development.

The City intends to work cooperatively with other agencies, water providers, and other interested stakeholders regarding the sustainable management of groundwater within the Basin. By this notification, the City has provided DWR with all applicable information in Water Code Section 10723.8(a). If further information is required, please contact me at 209 831-6356 or at SteveB@ci.tracy.ca.us.

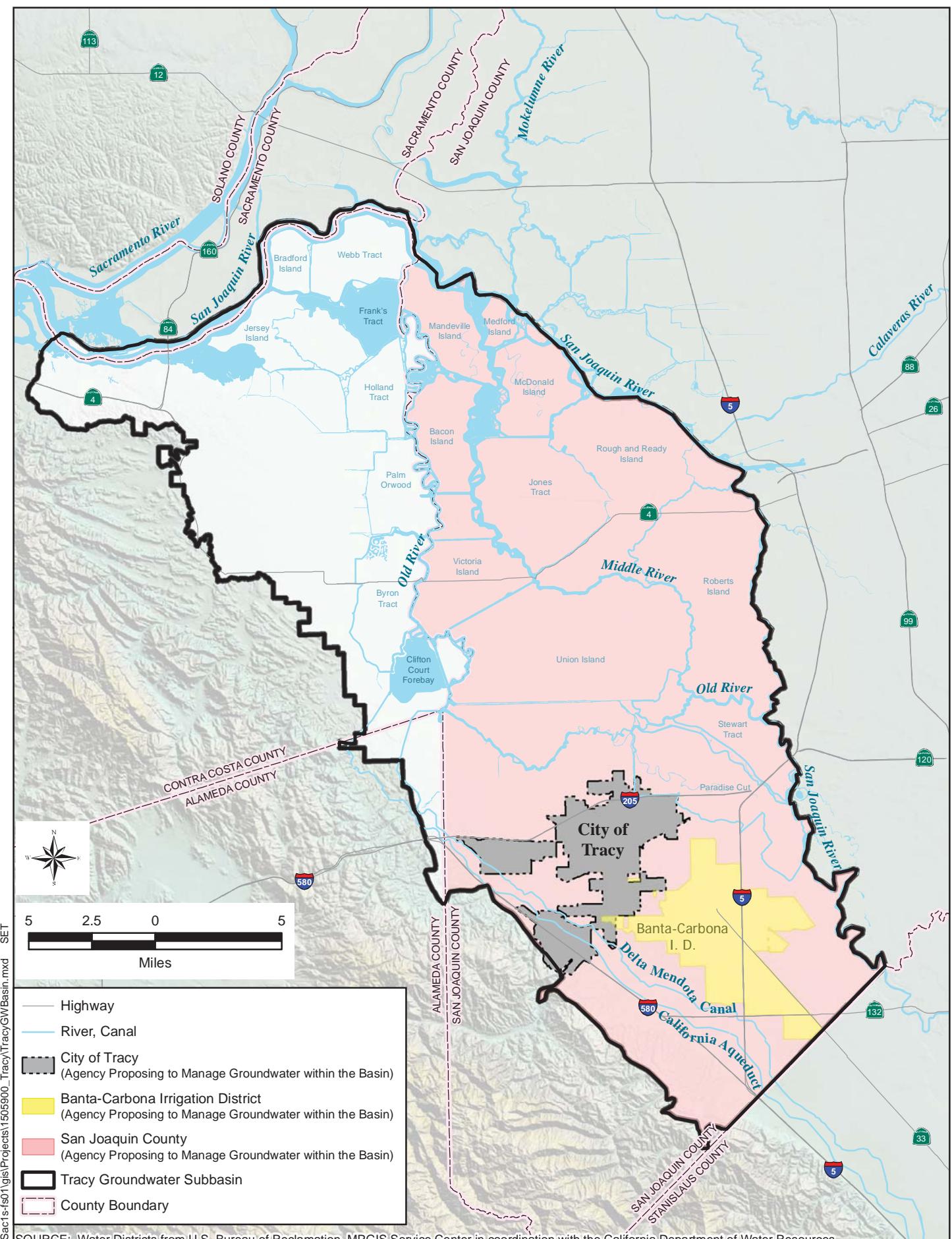
Very truly yours,



Steve Bayley
Project Specialist

Enclosures

cc: Kul Sharma



SOURCE: Water Districts from U.S. Bureau of Reclamation, MPGIS Service Center in coordination with the California Department of Water Resources.

Exhibit B

San Joaquin Edition of the Tri-Valley Herald

3510120

CITY OF TRACY/UTILITIES
ATTN: ACCOUNTS PAYABLE
3900 HOLLY DRIVE
TRACY, CA 95376

PROOF OF PUBLICATION

FILE NO. 2/2/16 Hearing

In the matter of

San Joaquin Edition of the Tri-Valley Herald

I am a citizen of the United States; I am over the age of eighteen years, and not a party to or interested in the above entitled matter. I am the Legal Advertising Coordinator of the printer and publisher of The San Joaquin Edition of the Tri-Valley Herald, a newspaper published in the English language in the City of Tracy, County of San Joaquin, State of California.

I declare that The San Joaquin Edition of the Tri-Valley Herald is a newspaper of general circulation as defined by the laws of the State of California as determined by this court's order, dated Nov. 22, 1999 and affirmed on June 5, 2001, in the action ascertaining and establishing the standing of The San Joaquin Edition of the Tri-Valley Herald as a Newspaper of General Circulation in the City of Tracy, County of San Joaquin, State of California, Case Numbers CV008693 and C034887, within the meaning and intent of the Government Code of the State of California Sections 6020 and 6008. Said order has not been revoked, vacated, or set aside.

I declare that the notice, of which the annexed is a printed copy, has been published at each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

01/15/2016, 01/22/2016

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

Dated: January 22, 2016



Public Notice Advertising Clerk

Legal No. 0005652718

NOTICE OF PUBLIC HEARING

CITY OF TRACY

A Public Hearing will be held by the City Council of the City of Tracy on Tuesday, February 2, 2016, at 7:00 p.m., or as soon thereafter as possible, in the Tracy City Hall, 333 Civic Center Plaza, Tracy, to consider public testimony on whether the City should elect to act as the Groundwater Sustainability Agency under the Sustainable Groundwater Management Act (SGMA) (California Water Code § 10720 et seq.) for the portion of the Tracy Subbasin of the San Joaquin Valley Groundwater Basin within the city limits of the City of Tracy.

All interested persons are invited to be present and to submit statements in writing before the meeting or orally during the meeting. Written comments should be submitted to the City to the attention of Steve Bayley, Project Specialist, no later than 12:00 noon on February 1, 2016 (one day before the hearing), at 520 Tracy Boulevard, Tracy, 95376 or at Steve.Bayley@ci.tracy.ca.us. The City Council, at the close of the hearing, may take action to become a Groundwater Sustainability Agency.

Information concerning this matter may be obtained at the Utilities Department, 3900 Holly Drive, (209) 831-4047.

NORA PIMENTAL
CITY CLERK
SJTVH #5652718; January 15, 22, 2016

Jan
COPY

Exhibit C

RESOLUTION 2016-026

RESOLUTION ELECTING TO ESTABLISH THE CITY OF TRACY AS A GROUNDWATER SUSTAINABILITY AGENCY FOR THAT PORTION OF THE TRACY SUB-BASIN WITHIN THE CITY OF TRACY

WHEREAS, Senate Bills 1168 and 1319, and Assembly Bill 1739, known collectively as the Sustainable Groundwater Management Act of 2014 (SGMA), became law on September 16, 2014, and

WHEREAS, SGMA went into effect on January 1, 2015, and

WHEREAS, SGMA requires the groundwater under Tracy to be managed by a Groundwater Sustainability Agency (GSA), and

WHEREAS, SGMA delineates a deadline for formation of a GSA for the Tracy sub-basin of June 30, 2017, and

WHEREAS, The SGMA authorizes a local public agency overlying groundwater sub-basin to elect to become a GSA, and

WHEREAS, The City of Tracy is a local public agency as defined under the SGMA and is therefore eligible to serve as a GSA, and

WHEREAS, Section 10723.2 of the SGMA requires that a GSA consider the interests of all beneficial uses and users of groundwater, as well as those responsible for implementing groundwater sustainability plans, and

WHEREAS, Section 10723.8 of the SGMA requires that a local public agency electing to be a GSA notify DWR of its election and intention to undertake sustainable groundwater management within a sub-basin, and

WHEREAS, The City is committed to sustainable management of its groundwater resources, and

WHEREAS, Pursuant of Government Code Section 6066, notices of a public hearing regarding whether to adopt a Resolution to elect to become a GSA was published on January 15, 2016 and January 22, 2016 in the Tri Valley Herald San Joaquin edition, and

WHEREAS, The City held a public hearing on February 2, 2016, and

WHEREAS, The City wishes to exercise the powers and authorities of a GSA granted by the SGMA;

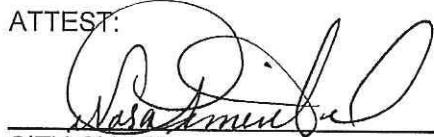
NOW, THEREFORE, BE IT RESOLVED, That the City Council hereby elects to become a Groundwater Sustainability Agency for that portion of the Tracy Sub-basin of the San Joaquin Valley Groundwater Basin within the city limits of the City of Tracy, and directs staff to, within 30 days from the date of this Resolution, provide notification of this election to DWR, including a copy of this Resolution and additional information required by Water Code Section 10723.8, in the manner required by law.

The foregoing Resolution 2016-026 was passed and adopted by Tracy City Council on the 2nd day of February, 2016, by the following vote:

AYES: COUNCIL MEMBERS: MITRACOS, VARGAS, YOUNG, RICKMAN, MACIEL
NOES: COUNCIL MEMBERS: NONE
ABSENT: COUNCIL MEMBERS: NONE
ABSTAIN: COUNCIL MEMBERS: NONE


MAYOR

ATTEST:


CITY CLERK

ATTACHMENT G

CITY OF TRACY

2015 UWMP

SECTION 5

**GROUNDWATER
BANKING PLAN**

ATTACHMENT G

(From City of Tracy UWMP Section 5)

5.5 SEMITROPIC GROUNDWATER STORAGE BANK

The City has acquired the rights to store and recover water in the Semitropic Groundwater Storage Bank (Semitropic) operated by the Semitropic Water Storage District (Semitropic WSD). The Semitropic facilities are located in Kern County alongside the California Aqueduct and the DMC. The first phase of Semitropic was initiated in the early 1990s and established one million AF of storage for a group of agencies referred to as the Original Banking Partners. In response to increased demand for banking capacity, up to 650,000 AF of additional storage was created for the Stored Water Recovery Unit (SWRU). When an agency purchases storage capacity in Semitropic, it is able to recover the volume of water it has banked over a period of three consecutive years (i.e., 3,000 AF equates to a maximum recovery rate of 1,000 AFY for three years).

The City originally entered into a pilot agreement with Semitropic WSD in June 2006 for 1,000 AF of water storage in Semitropic's SWRU. To satisfy the requirements of CEQA and NEPA, a Negative Declaration (SCH No. 2006052049) was prepared and a FONSI was issued by USBR (FONSI-05-111). The pilot agreement was intended to establish the procedures for water deposits and withdrawals by the City (WYA, 2016).

In 2012, the City entered into a long-term agreement with Semitropic WSD for up to 10,500 AF of storage volume.³² This storage agreement allows the City to withdraw up to 3,500 AF of water annually for three years. To store water in Semitropic, the City withdraws less than its available allocation of CVP water from the DMC. This water travels through the DMC where it is diverted by Semitropic and used for local groundwater recharge. When the City wishes to withdraw water that it has banked previously, Semitropic arranges for the City to divert CVP water beyond its allocation from the DMC. This source of water is provided through either an exchange of Semitropic WSD's contractual entitlement to SWP water or through direct "pumpback" of stored groundwater into the California Aqueduct by Semitropic WSD.

Though the City could utilize this supply in any year, it is most valuable during drought years when the City's surface water supplies are reduced. As described in Section 6.1.3, the City anticipates that banking water at Semitropic will increase the reliability of the City's water supply and help close the potential future gap between supply and demand during drought conditions or other water shortage emergencies. If the City uses water from the Semitropic water bank in any given year, it would manage its supplies during subsequent years such that it could "refill" the water bank for future use.

³² "Agreement Between City of Tracy and Semitropic Water Storage District and Its Improvement Districts for Participation in the Stored Water Recovery Unit of the Semitropic Water Banking and Exchange Program," dated November 2012.

ATTACHMENT H

CITY OF TRACY

2016 CCR

Where Does Your Water Come From?

Sources of the City of Tracy's water supply include the Stanislaus River, the Delta-Mendota Canal, and groundwater pumped from wells. In 2016, 70% of the water supply, or 3.62 billion gallons, came from the Stanislaus River. Water from the Delta-Mendota Canal comprised 18% of the total water supply, or .935 billion gallons. The groundwater supply comprised 12%, or .589 billion gallons of the total water supply.

During 2017, the City anticipates having an adequate water supply for the community. This is due to the healthy groundwater supply (well water) underneath Tracy. Unfortunately, using well water results in an increase in water hardness (mineral content), however, the water is still safe to drink. City staff will minimize the use of well water as much as possible. In addition, residents and businesses are encouraged to conserve water whenever possible.



Water Quality Control

Before the water reaches your tap, samples are collected and tested in State-certified laboratories. The City of Tracy has a water quality monitoring program and inspection system that ensures safe drinking water is delivered to you and your family.

As required by the Federal Safe Drinking Water Act, the City's water supplies must meet stringent water quality standards set by the California Department of Public Health and the United States Environmental Protection Agency. The City of Tracy completed a watershed sanitary survey of its drinking water sources in 2016. This survey can be obtained by contacting the Water Production Superintendent at the number provided below.

Water customers who are landlords receiving this report are asked to share this information with any tenant or user on the premises. The City of Tracy staff is available to answer your questions and provide further information: (209) 831-6302.

ATTACHMENT H



WHAT DOES A 20% REDUCTION in water use look like?

AVERAGE DAILY USE

The average Californian uses 196 gallons of water per day. Here are some easy ways to reduce water use. Find the right combination for you to reduce by 20% or 39 gallons a day.



F TURN OFF WATER WHEN BRUSHING TEETH OR SHAVING **saves** **10 GALLONS** per person/day

TAKE FIVE MINUTE SHOWERS INSTEAD OF 10 MINUTE SHOWERS **saves** **12.5 GALLONS** with a water efficient showerhead

WASH ONLY FULL LOADS OF CLOTHES **saves** **15-45 GALLONS** per load

FILL THE BATHTUB HALFWAY OR LESS **saves** **12 GALLONS** per person

USE A BROOM TO CLEAN OUTDOOR AREAS **saves** **8-18 GALLONS** per minute

WATER PLANTS EARLY IN THE AM **saves** **25 GALLONS** each time you water

INSTALL DRIPLRIGATION **saves** **15 GALLONS** each time you water

AJUST SPRINKLER TO WATER PLANTS, NOT DRIVEWAY **saves** **12-15 GALLONS** each time you water

Learn more ways to save water inside and outside of your home at www.saveourH2O.org/

FOLLOW US



2016 Consumer Confidence Report

Think Inside the Triangle™

CITY OF TRACY

The City of Tracy is pleased to report that from January 1 - December 31, 2016 the water delivered to your home or business complied with, or exceeded, all state and federal drinking water requirements! Provided in this brochure is a table that lists detectable and non-detectable substances found in the City's drinking water, and the maximum allowable substance levels set by United States Environmental Protection Agency (USEPA).

In California, drinking water standards, also called Maximum Contaminant Levels (MCLs), are set in two categories: **Primary Standards** related to public health, and **Secondary Standards** which relate to the aesthetic qualities such as taste, odor, and color. Within you will find a complete listing of both types of standards along with the results of the analysis of your water supply.



Este informe contiene información muy importante sobre su agua potable. Tradúzcalo ó hable con alguien que lo entienda bien.

assist the City in attaining its water conservation goals at www.thinkinsidehetriangle.com. You're continued efforts will by calling (209) 831-4333 or online at www.waterr.ca.gov/ through conditions/drought. Also, you may report any water waste through conditions visit <http://www.waterr.ca.gov/> longer than 8 minutes per day; and do not water for measures are: turning off irrigation timers in the winter months; fountains and ornamental water features. Some simple voluntary measures include: using a trigger handheld sprayer and bucket when washing your own car; and turning off faucet when door activities. Mandatory outdoor water conservation measures is outdoor door activities. Using a trigger handheld sprayer and bucket to more efficient models.

also consider turning off high water brushing teeth. Businesses might always receiving drips and leaking faucets quickly, and trash receiving full loads of laundry, never using the toilet as a pool; washing full loads of laundry, never using the toilet to help? Some simple indoor measures include: taking shorter showers, turning water off while shaving, including water with a shampoo bottle to do to help? Some simple indoor measures is out-

WATER YOU DOING TO CONSERVE?

through the education and communication of its municipal code. City staff discusses water use in ways, sidewalks and gutters. City staff discusses water use of possible water to wash hardscapes such as patios, drive-uses of only during the hours of 7 pm to 9 am, to further restricts the use of water. The State's requirements which limits outdoor water use to only the fifth treatment of its water. Despite the need for continued water basins re-meet the State's water requirements the City enacted Stage I of water supplies and public outreach campaigns. In an effort to meet the requirements the City enacted Stage I of water supplies and public outreach campaigns. The City has prepared for such droughts with a diverse portfolio of water use to do to help? Some simple indoor measures is out-

duced statewide conservation requirements in July 2014. The emergency regulation since the State Water Board first insti-

perists. The State's new action serves as the fifth treatment of many depleted and the need for continued water basins re-

Due to the severity of the water deficits over the past five years, many of California's reservoirs and public outreach campaigns. Due to exceed 20 percent compared to 2013 water use, under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

ceeded to 2017 percent compared to 2013 water use. Under the revised regulation, statewide water conservation is ex-

What's in My Water?

ANALYTICAL PARAMETER	SOUTH SAN JOAQUIN IRRIGATION DISTRICT	TREATED SURFACE WATER	TREATED SURFACE WATER	WELL WATER			REGULATORY LIMITS		TYPICAL SOURCE				
				AVERAGE	MINIMUM	MAXIMUM	MCL/G or PHG	MAXIMUM CONTAMINANT LEVEL (MCL)					
PRIMARY STANDARDS													
INORGANIC (ug/L)													
Arsenic	ND	ND	1.4	ND	2.8	0	10 ug/L	Erosion of natural deposits					
Barium	ND	26	30	24	44	2000	1000 ug/L	Erosion of natural deposits					
Chromium	ND	ND	4.2	ND	7.7	100	50 ug/L	Erosion of natural deposits					
Copper	ND	ND	1.0	ND	4.5	170	1000 ug/L	Erosion of natural deposits					
Iron	ND	ND	ND	ND	0.1	NA	300 ug/L	Erosion of natural deposits					
Manganese	ND	ND	2.9	ND	14.0	NA	50 ug/L	Erosion of natural deposits					
FLUORIDE (mg/L)													
Fluoride	ND	0.07	0.16	0.08	0.30	1.0	2.0 mg/L	Erosion of natural deposits					
NITRATE/NITRITE													
Nitrate (as NO ₃) ¹	ND	ND	6.7	0.5	9.8	45	45 mg/L	Runoff from fertilizer use; Erosion of natural deposits					
Nitrate + Nitrite (sum as N)	ND	ND	1.5	0.1	2.2	10	10 mg/L						
Nitrite (as N)	ND	ND	ND	ND	ND	1	1 mg/L						
REGULATED ORGANICS (ug/L)													
TRIHALOMETHANE													
Bromodichloromethane	3.4	12	0.2	ND	1.2	NA	ug/L						
Bromoform	ND	3.7	ND	ND	ND	NA	ug/L						
Chloroform	34	6.9	2.4	ND	18	NA	ug/L						
Dibromochloromethane	ND	12	ND	ND	ND	NA	ug/L						
Total Trihalomethane	36	35	2.5	ND	20	NA	80 ug/L	By-product of drinking water chlorination					
SECONDARY STANDARDS													
Aesthetic - Related													
Apparent Color (Units)	ND	ND	ND	ND	ND	NA	15 Units	Naturally occurring organic materials					
Foaming Agents (MBAS) (mg/L)	ND	ND	ND	ND	ND	NA	0.5 mg/L	Municipal and industrial waste discharge					
Odor (TON)	ND	8	0.5	0.0	2.0	NA	3 TON	Naturally occurring organic materials					
Potassium (K) (mg/L)	ND	3.1	3.4	1.5	4.7	NA	NS	Erosion of natural deposits					
Turbidity (NTU) ²	ND	0.1	0.4	ND	1.3	NA	5 NTU	Soil runoff					
Total Alkalinity (CaCO ₃)(mg/L)	47	46	133	66	190	NA	NS	Erosion of natural deposits					
Boron (B) (mg/L)	NA	0.12	1.6	0.2	2.3	NA	NS	Erosion of natural deposits					
Calcium (Ca) (mg/L)	11	18	68	22	91	NA	NS	Erosion of natural deposits					
Magnesium (Mg) (mg/L)	3	14	28	5	33	NA	NS	Erosion of natural deposits					
Sodium (Na) (mg/L)	5	69	136	28	200	NA	NS	Erosion of natural deposits					
Total Hardness (CaCO ₃)(mg/L)	80	100	273	76	380	NA	NS	Erosion of natural deposits					
TDS (mg/L)	30	310	742	289	889	NA	1000 mg/L	Erosion of natural deposits					
Specific Conductance (umhos/cm)	113	580	1171	486	1370	NA	1600 umhos/cm	Substances that form ions when in water					
Chloride (mg/L)	3	110	123	35	220	NA	500 mg/L	Erosion of natural deposits					
Sulfate (mg/L)	4	47	251	41	330	NA	500 mg/L	Erosion of natural deposits					
pH	7.2	8.4	7.5	7.1	8.2	NA	6.5 - 8.5 Units	NA					
WATER DISTRIBUTION SYSTEM DATA SHEET													
BACTERIOLOGICAL (% Present)													
Coliform Density	<1	<1	<1	<1	<1	0	5% Present/mo.	Municipal and industrial waste discharge					
ORGANICS (ug/L)				RUNNING ANNUAL AVERAGE									
Total Trihalomethane				43	NA	80 ug/L	By-product of drinking water chlorination						
Total Haloacetic Acids				22	NA	60 ug/L	By-product of drinking water chlorination						

¹ Nitrate in drinking water at levels above 45 ppm is a health risk for infants of less than six months of age. Such nitrate levels in drinking water can interfere with the capacity of the infant's blood to carry oxygen, resulting in a serious illness; symptoms include shortness of breath and blueness of the skin. Nitrate levels above 45 ppm may also affect the ability of the blood to carry oxygen in other individuals, such as pregnant women and those with certain specific enzyme deficiencies. If you are caring for an infant, or if you are pregnant, you should ask advice from your health care provider.

² Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of water quality and the effectiveness of disinfectants.

DEFINITIONS

AL (Action Level): The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements, which a water system must follow.

MCL (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible.

Secondary MCLs (SMCL): Are set to protect the odor, taste, and appearance of drinking water.

MCLG (Maximum Contaminant Level Goal): The level of a contaminant in drinking water below, which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency.

PHG (Public Health Goal): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

PDWS (Primary Drinking Water Standard): MCLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

TT (Treatment Technique): A required process intended to reduce the level of a contaminant in drinking water.

NA: Not applicable.

ND: Not detected.

NS: No standard.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water.

ppb (Parts Per Billion): One part per billion (or micrograms per liter).

ppm (Parts Per Million): One part per million (or milligrams per liter).

pCi/L (Picocuries Per Liter): A measure of the natural rate of radioactive disintegration.

umhos/cm (Micromhos Per Centimeter): A measure of electrical conductance.

DISINFECTION PRACTICES

The City uses two types of disinfectant:

CHLORINE: Chlorine is used as the primary disinfectant chemical to kill or inactivate bacteria, viruses and other potentially harmful organisms in drinking water. Chlorine also serves as a secondary or residual disinfectant in the distribution system.

CHLORAMINES: Chloramines are created by adding ammonia that then combines with the chlorine as the drinking water leaves the treatment plant. Chlorine will still be used as the primary disinfectant; however, chloramines will be used as the secondary disinfectant in the water distribution system when treating source water from the Delta Mendota Canal.

For most regular uses of potable water, chloraminated water is the same as chlorinated water. **However, chloramines must be removed for kidney dialysis treatment and may require recalibration of dialysis equipment. If you are receiving kidney dialysis treatment, please contact your doctor or dialysis technician.**

STANISLAUS RIVER WATER

The City of Tracy is committed to providing a safe, reliable and affordable water supply to meet the needs of the community today and in the future. The City has participated with the cities of Manteca, Lathrop, Escalon, and the South San Joaquin Irrigation District to bring high quality Sierra water from the Stanislaus River. This water source has increased the reliability of City water supplies by having a third source of supply and redundancy in treatment facilities. Delivery of this water comprises the majority of water consumed in the City and is the only supply source used during the winter months. The Stanislaus River water supply is very soft water and has significantly reduced the minerals in the City's water supply. You may no longer need to use a water softener.



CROSS CONNECTION PROTECTION

Backflow prevention assemblies are designed to allow water to flow into your home or office from the public water system but not allow water to flow in the reverse direction, creating effective cross connection protection. Reverse flow can carry untreatable pollutants and contaminants back to the public water system, compromising the water quality for all customers. Backflow prevention assemblies are required to be tested annually to ensure they are effectively protecting the public water system. If your residence has an active well on the premises or your business has fire sprinklers and/or landscaping, you should have a backflow prevention assembly. For questions regarding annual testing requirements, please call Erich Delmas, Laboratory Supervisor at (209) 831-4488.

WATER SOURCE ASSESSMENT

An assessment of the drinking water sources for the City of Tracy's water system was completed in June 2001. The sources are considered most vulnerable to the following activities: airports (maintenance and fueling areas), gas stations (historic and current), mining activities (historic and current), septic and waste landfill dumps (historic and current). You may request a copy of the assessment by contacting the Water Production Superintendent, Dave Carter, at (209) 831-6302.

The native groundwater under Tracy contains boron. Boron is a naturally occurring, non-carcinogenic, unregulated contaminant. Six of the City's wells contain elevated levels of boron. Although well water comprises only a small portion of the City's total water supply, well water does contain boron that may affect the babies of some pregnant women who drink water containing boron in excess of the notification level may have an increased risk of developmental effects, based on studies in laboratory animals.

SAMPLING RESULTS SHOWING TREATMENT OF SURFACE WATER SOURCES

Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water (type of approved filtration technology used).

Turbidity of the filtered water must:

1. Be less than or equal to 0.3 NTU in 95% of measurements in a month.
2. Not exceed 1 NTU for more than eight consecutive hours.
3. Not exceed 3 NTU at any time.

Turbidity Performance Standards: Turbidity (measured in NTU) is a measurement of the cloudiness of water and is a good indicator of water quality and filtration performance. Turbidity results, which meet performance standards, are considered to be in compliance with filtration requirements (that must be met through the water treatment process).

Lowest monthly percentage of samples that met Turbidity Performance Standard No.1: 100%. Highest single turbidity measurement during 2016 was 0.210 NTU.

SAMPLING RESULTS SHOWING THE DETECTION OF LEAD AND COPPER						
	# Of Samples Collected	90TH Percentile Level Detected	# Sites Exceeding AL	AL	MCLG	Typical Source of Contaminant
Lead (ppm)	33	0.0027	0	0.015	0	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits

ATTACHMENT I

CITY OF TRACY

2015 UWMP DMMs

AND

CalWEP 2016 BMP

REPORT

8. DEMAND MANAGEMENT MEASURES

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:

10631 (f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:

(1) (A) For an urban retail water supplier, as defined in Section 10608.12, a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years. The narrative shall describe the water demand management measures that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.20.

(1) (B) The narrative pursuant to this paragraph shall include descriptions of the following water demand management measures:

- (i) Water waste prevention ordinances.
- (ii) Metering.
- (iii) Conservation pricing.
- (iv) Public education and outreach.
- (v) Programs to assess and manage distribution system real loss.
- (vi) Water conservation program coordination and staffing support.
- (vii) Other demand management measures that have a significant impact on water use as measured in gallons per capita per day, including innovative measures, if implemented.

This section provides an overview of the City's current and planned DMMs, which include specific types and groupings of water conservation measures typically implemented by water suppliers. The DMMs reported in this Plan are closely aligned with the California Urban Water Conservation Council (CUWCC) Best Management Practices (BMPs). The City regularly completes annual CUWCC BMP Retail Coverage Reports, and reports completed in the past five years are included as Appendix T.

8.1 TRACY WATER CONSERVATION

The City implements all of the DMMs, as described below and summarized in Table 8-1 and the associated chart.

8.1.1 DMM 1 – Water Waste Prevention Ordinances

Prohibition of water uses to prevent water waste were included in the 1992 WSCP and 2015 WSCP as voluntary actions under Stage 1 and mandatory actions under Stage 2. Stage 1 of the 1992 WSCP has been enacted since the 2010 UWMP. The City enacted Stage 2 of the 1992 WSCP in August 2014. The City adopted the 2015 WSCP in June 2015 and Stages 3 and 4 of the 2015 WSCP became effective in that month.

The WSCP in this Plan establishes the same water waste prohibitions as were included in the 2015 WSCP, but makes these prohibitions mandatory at all times, regardless of the water supply conditions or stage of action that is enacted. The following prohibitions and requirements are listed as Mandatory Prohibitions in the City's WSCP:

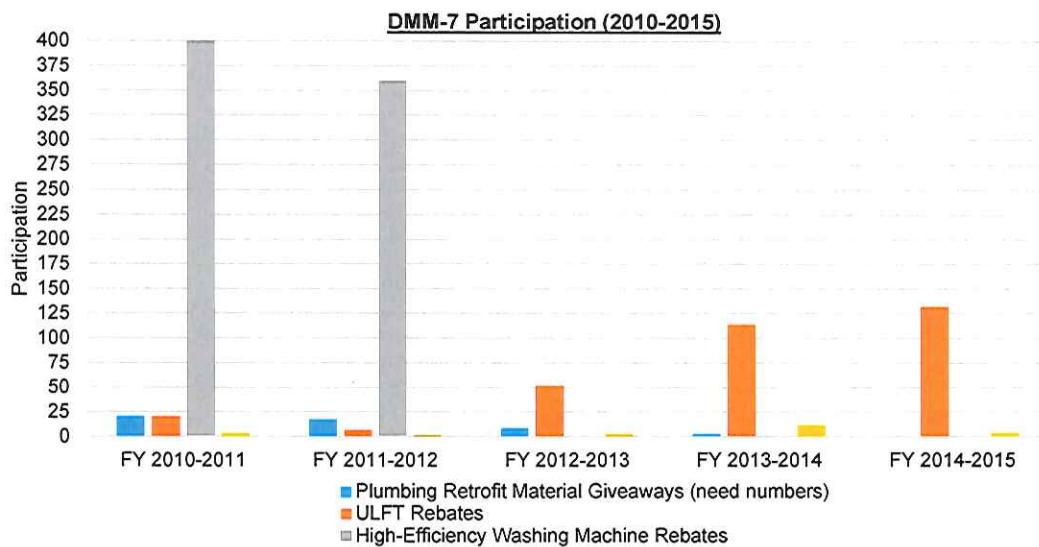
Table 8-1
Summary of DMMs and Implementation over the Past Five Years (2010-2015)
City of Tracy, California

DMM Category	Program or Activity	Target Sector	Nature of implementation	Extent of implementation
1	Water Waste Prevention Ordinances	SFR, MFR, CII, And IRR	Prohibition of water uses to prevent water waste were included in the 1992 WSCP and 2015 WSCP as voluntary actions under Stage 1 and mandatory actions under Stage 2. The 2016 WSCP establishes the same water waste prohibitions as the 2015 WSCP, but makes these prohibitions mandatory at all times, regardless of the water supply conditions or stage of action that is enacted.	Stage 1 of the 1992 WSCP has been enacted since the 2010 UWMP. The City enacted Stage 2 of the 1992 WSCP in August 2014. The City adopted the 2015 WSCP in June 2015 and enacted Stages 3 and 4 of the 2015 WSCP, which became effective in that month.
2	Metering	SFR, MFR, CII, And IRR	All water service connections are metered. Many non-residential and multi-family customers have sub-meters to monitor water use for landscape irrigation separately from indoor uses. In August 2012, the City conducted a feasibility study to assess the merits of implementing a program to provide incentives to switch mixed-use CII accounts to dedicated landscape meters. The study concluded that it would be too cost-prohibitive to retrofit all current mixed-use CII accounts. However, all new construction shall be equipped with a separate dedicated landscape meter.	All accounts are metered and read on a monthly basis.
3	Conservation Pricing	SFR, MFR, CII, And IRR	The current water rate structure includes a tiered water consumption charge based on water usage: http://www.ci.tracy.ca.us/?navId=89 , accessed 7 April 2016. The City also maintains the authority to implement water use surcharges (TMC §11.28.220) and conservation pricing (TMC §11.28.230) in times of need.	Tiered rate structure in place during 2010-2015. Water rate study planned for 2018.
4	School Education Program: Captain Hydro	SFR, MFR	Copies of the 40-page Official Captain Hydro Water Conservation Workbook provided to each school for dissemination to Kindergarten through Sixth Grade classes.	FY 2010-11: Distributed to schools FY 2011-12: Distributed to schools FY 2012-13: Distributed to schools FY 2013-14: Distributed to schools FY 2014-15: Distributed to schools
4	Public Outreach Program	SFR, MFR	Information about water conservation in the City distributed to customers through newsletters, bill inserts, flyers, information packages, email messages, and other methods of distribution.	FY 2010-11: 45,135 contacts made FY 2011-12: 37,450 contacts made FY 2012-13: 39,022 contacts made FY 2013-14: 81,000 contacts made FY 2014-15: 61,050 contacts made
4	Media Contacts	SFR, MFR, CII, And IRR	Contact made with television channels, radio stations, and newspaper to promote water conservation within the City. The goal of this contact to is to produce a story about water conservation resulting from the outreach.	FY 2010-11: 3 contacts, 3 stories FY 2011-12: 4 contacts, 6 stories FY 2012-13: 8 contacts, 4 stories FY 2013-14: 8 contacts, 2 stories FY 2014-15: 5 contacts, 5 stories
4	Other Public Outreach	SRF, MFR, CII, And IRR	The City maintains water conservation program pages on its website and posts outreach materials on its social media accounts: http://www.ci.tracy.ca.us/?navId=687 .	FY 2010-11: 2,001 website visitors FY 2011-12: 1,889 website visitors FY 2012-13: 3,862 website visitors FY 2013-14: 6,340 website visitors FY 2014-15: 2,543 website visitors

Table 8-1 (Continued)
Summary of DMMs and Implementation over the Past Five Years (2010-2015)
 City of Tracy, California

DMM Category	Program or Activity	Target Sector	Nature of Implementation	Extent of Implementation
5	AWWA Water Loss Worksheet	Non-revenue	The City completes the AWWA Water Loss Worksheet each year, which allows the City to estimate "real water loss." Real water loss consists of water loss attributable to the distribution system and includes physical water loss from the pressurized system and storage tanks up to the point of customer consumption.	FY 2010-11: AWWA Validity Score = 88 FY 2011-12: AWWA Validity Score = 88 FY 2012-13: AWWA Validity Score = 80 FY 2013-14: AWWA Validity Score = 74 FY 2014-15: Not completed yet
6	Conservation Program Coordination and Staff	SFR, MFR, CII And IRR	City employs a Water Conservation Coordinator (WCC) and funds the water conservation program through the Water Utility and grants. The WCC devotes approximately 45% of her time to water conservation.	FY 2010-11: Estimated budget of \$94,000 FY 2011-12: Estimated budget of \$91,000 FY 2012-13: Estimated budget of \$121,000 FY 2013-14: Estimated budget of \$141,000 FY 2014-15: Estimated budget of \$196,000
7	Ultra Low Flush Toilet Rebate	SFR, MFR, CII	Up to \$125 rebate for replacing toilets in pre-1994 buildings using more than 3.0 gpf with qualifying toilets that use less than 1.6 gpf. Up to three rebates are allowed per SFR account and up to four rebates are allowed per MFR and CII customer account.	FY 2010-11: 21 rebates, \$4,303 spent FY 2011-12: 7 rebates, \$1,482 spent FY 2012-13: 52 rebates, \$9,926 spent FY 2013-14: 114 rebates, \$21,046 spent FY 2014-15: 132 rebates, \$23,433 spent
7	High-Efficiency Clothes Washing Machine Rebate Program	SFR, MFR	Through a partnership with PG&E, up to a \$50 rebate was offered to residential customers for qualifying high-efficiency washing machines.	FY 2010-11: 400 rebates, \$20,000 spent FY 2011-12: 360 rebates, \$17,950 FY 2012-13: Not implemented FY 2013-14: Not implemented FY 2014-15: Not implemented
7	Water Use Survey Program	SFR, MFR, CII	Free water use surveys are offered to SFR, MFR, and CII customers in pre-1994 buildings. As part of this program, a Water Efficiency Representative from the City conducts a tour of the property to identify leaks and offer water and money saving opportunities. Participants may receive water-saving equipment and information, as recommended by City staff.	FY 2010-11: 4 surveys FY 2011-12: 2 surveys FY 2012-13: 3 surveys FY 2013-14: 12 surveys FY 2014-15: 4 surveys
7	Plumbing Retrofit Material Giveaways	SFR, MFR, CII	Water-saving fixtures and other items are available to SFR, MFR, and CII customers participating in the Water Use Survey Program at no cost. These giveaways include bathroom aerators, a kitchen aerators, a low-flow shower head, and other free items.	FY 2010-11: 21 fixture giveaways FY 2011-12: 18 fixture giveaways FY 2012-13: 9 fixture giveaways FY 2013-14: 3 fixture giveaways FY 2014-15: 1 fixture giveaway

Table 8-1 (Continued)
Summary of DMMs and Implementation over the Past Five Years (2010-2015)
City of Tracy, California



Abbreviations:

CII = commercial, industrial, and institutional accounts
DMM = demand management measure
FY = fiscal year
gpf = gallons per flush
IRR = irrigation accounts
MFR = multi-family residential accounts

PG&E = Pacific Gas and Electric Company
ULFT = ultra low flow toilets
SFR = single family residential accounts
TMC = Tracy Municipal Code
WCC = Water Conservation Coordinator
WSCP = Water Shortage Contingency Plan

Table 8-1 (Continued)
Summary of DMMs and Implementation over the Past Five Years (2010-2015)
City of Tracy, California

Notes:

(a) The City allocates budget to the Water Conservation Program through a bulk allotment designated for both water conservation and stormwater management efforts. The portion of the budget assigned to the Water Conservation Program was estimated to be equal to the fraction of time that the WCC, who is also responsible for stormwater management for the City, devotes to water conservation (i.e., 45%).

Prohibitions

- No customer shall permit flagrant water waste or incidental water runoff. Flagrant water waste or excessive water runoff is defined as any water that flows directly from a tap connected to the City water system that leaves the property of origin in a continuous flow of any dimension for 150 feet from the property, or for more than five minutes in duration.
- Irrigating outdoors during and within 48 hours following measurable rainfall is prohibited.

Requirements

- All customers must properly maintain all plumbing and irrigation systems and control any leaks within 72 hours of discovery or notification.
- Customers shall practice prudent water conservation measures, including:
 - Planting drought-tolerant landscapes;
 - Installing and maintaining water-efficient irrigation systems such as drip and bubble irrigation with weather or soil-based controllers;
 - Installing sprinkler heads with a low flow rate appropriate for the landscape to prevent overwatering and runoff; and
 - Watering only in the late night or early morning hours during non-windy periods.
- A hose that dispenses potable water shall be fitted with a shut-off nozzle or flow restriction device attached to it that causes it to cease dispensing water immediately when not in use.
- All swimming pools, hot tubs and spas installed after 1 May 1993 must have a separation tank and water recovery system installed in the filter backwash system, with a 90% water recovery standard.
- Each swimming pool, hot tub and spa installed after 15 July 2015 must have a non-permeable floating cover or equivalent device that provides 90% surface coverage.

In subsequent stages of the WSCP, the City is empowered to further reduce or eliminate water waste during periods of water supply shortage or emergency. These measures, described in more detail in Section 7 of this UWMP, include restrictions on landscape irrigation, sidewalk and car washing, and other residential, recreational, and commercial uses of water.

Enforcement of the water waste prohibition is done by the City's Water Conservation Coordinator (WCC). The WCC enforces water waste violations in the same manner as violations of the WSCP (see Section 7.6), which involves a series of Courtesy Notices informing customers of the identified violations and the need for corrective action within 72 hours. If the first Courtesy Notice does not induce compliance, the WCC issues a second notice. If those do not result in compliance, the WCC writes a letter, delivered by certified mail, warning that a citation will be issued by the City if the customer does not comply within 72 hours.

Tracy enforces its water waste ordinance on a year-round basis. Approximately 698 actions have been taken by the City since 2010 to enforce the water waste ordinance. No citations have had to be issued.

8.1.2 DMM 2 – Metering

The City has installed radio-capable water meters all of its water service connections. All meters within the City's service area are read on a monthly basis. The ability to perform meter readings remotely via radio enhances data acquisition and can potentially alert customers or the City when there is a leak, potentially reducing wasted water. Depending on the availability of budget and staffing support, the City is planning to implement a program in the future that will allow water meters to be utilized in such a way. The City has installed Advanced Metering Infrastructure (AMI) meters at some accounts, which will provide real-time water usage data to both the customer and the City. Installation of AMI meters has the ability to help the City reduce UAW in the future through the early identification of leaks. The City is planning to continue installation of AMI meters in the future.

The City has adopted the DWR Model Water Efficient Landscaping Ordinance (MWELO), which requires certain residential and non-residential projects to install separate irrigation meters if landscaped areas meet specific size thresholds.⁴¹ In August 2012, the City conducted a feasibility study to assess the merits of implementing a program to provide incentives to switch mixed-use CII accounts to dedicated landscape meters. The study concluded that it would be too cost-prohibitive to retrofit all current mixed-use CII accounts. However, all new construction shall be equipped with a separate dedicated landscape meter. As time and money allow, current water use accounts will be retrofitted for dedicated landscape meters, starting with larger *Commercial* accounts.

8.1.3 DMM 3 – Conservation Pricing

The City's water rate structure consists of a base service rate and a commodity rate.⁴² Approximately 70% to 75% of the City's water rate revenues are attributable to commodity rates (see Appendix T). The City's base service rate is tied to the size of each customer's meter. Meter service charges range from \$11.70 per month for a 5/8-inch or 3/4-inch diameter meter, to \$2,070.40 for a 10-inch meter. The City's commodity rate employs a tiered rate structure based on the quantity of water consumed by each customer. Four tiers are defined by the number of units of water use in a month, with one unit equal to 100 cubic feet (748 gallons). The current water rates for the City's four tiers are as follows:

- Tier 1 – \$1.00 per unit
- Tier 2 – \$1.45 per unit
- Tier 3 – \$1.65 per unit
- Tier 4 – \$1.80 per unit

To compensate for revenue losses and the resultant fiscal impacts during the low-flow winter months and during periods of water conservation, the City varies its water rates seasonally.

⁴¹ Per California Code of Regulation §492.7(a)(1)(A), landscape water meters must be installed for residential irrigated landscapes of 5,000 square feet or greater and for non-residential irrigated landscapes between 1,000 square feet and 5,000 square feet (at which point CWC §535 applies).

⁴² The City's current water rate structure is available online at: <http://www.ci.tracy.ca.us/?navId=89>.

Currently, the cost per unit for each tier remains the same during the summer months (May through October) and winter months (November through April), but the range of units associated with each tier changes. For example, in the summer months, the highest unit rate, associated with Tier 4, applies when a customer uses more than 288 units in a month. In the winter months, however, this high rate is charged at a lower threshold, when a customer uses more than 191 units in a month.

In addition to the City's conservation-oriented water rate structure, the City Council maintains the authority to adopt conservation pricing and water use surcharges in times of need (see Section 7.9).

A water rate study is planned for 2018 to analyze the City's current water rate structure and evaluate possible alternatives.

8.1.4 DMM 4 – Public Education Outreach

The City distributes information about water conservation to the public through bill inserts, brochures, community speakers, paid advertising, school education programs, and community events. The City's public information program is managed by the City's WCC and includes the following activities:

- Distributing bill inserts that promote conservation;
- Promoting water conservation through television and radio advertisements;
- Coordinating with homeowner associations and local non-profit organizations to provide additional water conservation material and speakers;
- Maintaining a booth at the City's annual Bean Festival where information is distributed regarding the City's water conservation programs; and
- Using cinema advertisements by running one promotional slide before every movie at the Tracy Cinemark.

The City continues to promote water and other resource conservation at City schools through in-class presentations to fourth, fifth and sixth grade classrooms during Water Week. Approximately six classroom visits are made each year. The City also distributes public outreach materials to schools for distribution, including the 40-page *Official Captain Hydro Water Conservation Workbook* and packages of water conservation flyers. Approximately \$500 of water conservation materials were distributed each year for the past five years. The City plans to continue working with the school districts and private schools in its service area to provide instructional assistance, educational materials, and classroom presentations that emphasize local urban, agricultural, and environmental issues related to water use.

The City also maintains a website providing water conservation tips and information regarding the City's water conservation programs discussed in Section 8.1.7, such as ultra low flush toilet rebates and the residential water survey program.⁴³

⁴³ <http://www.ci.tracy.ca.us/?navId=687>

8.1.5 DMM 5 – Programs to Assess and Manage Distribution System Real Loss

Citywide water consumption is tracked through the use of the Inspironix Water Usage Data System (WUDS) software. As described in Section 3.1.1, the City calculates UAW by comparing total metered water consumption to potable water purchases and groundwater production. As discussed in Section 3.1.1.4, the City completes the AWWA Water Loss Worksheet each year. The City's WCC attends workshops and trainings to receive instruction on the proper utilization of this software. Completion of this worksheet allows the City to estimate real water loss, which consists of water loss attributable to the distribution system and includes physical water loss from the pressurized system and storage tanks up to the point of customer consumption.

The City monitors its distribution for leaks by using acoustic sounders and the Supervisory Control and Data Acquisition (SCADA) software. A system-wide leak detection survey has not been completed since 1999; however, the City performs routine maintenance of its water lines and promptly repairs any ruptured water lines.

8.1.6 DMM 6 – Water Conservation Program Coordination and Staffing Support

The City's water conservation program is administered by the City's WCC, Mrs. Stephanie Reyna-Hiestand. As Tracy's WCC, Mrs. Reyna-Hiestand's responsibilities are divided as follows: 45% to water conservation efforts, 45% to storm water management, and 10% to groundwater management. The duties of the WCC include coordination and oversight of conservation programs and DMM implementation, preparation and submittal of the USBR Annual Update, communication and promotion of water conservation issues to senior City management, coordination of agency conservation programs with operations and planning staff, and preparation of the annual water conservation budget. Contact information for the City's water conservation program is listed below:

Name: Stephanie Reyna-Hiestand
Phone: 209-831-4333
Email: waterresources@ci.tracy.ca.us

The City's water conservation program is funded through the Water Utility and grants. The City estimated that its total water conservation program budget for Fiscal Year 2014-2015 was approximately \$196,000,⁴⁴ which includes expenses related to staffing, advertising, implementing DMMs, providing incentives and rebates, and more.

8.1.7 DMM 7 – Other DMMs

Other DMMs provided by the City, in addition to those discussed above, include the following:

- Ultra Low Flush Toilet (ULFT) Rebates: The City locally administers a ULFT Rebate Program for its residential and commercial customers. The ULFT Rebate Program was initiated in February 2007 and is subject to budget funding each fiscal year. Rebates are "first come, first served" and will continue until all ULFT rebates have been awarded each funded year. As part of this program, the City offers customers up to \$125 in rebates for customers replacing a high-volume toilet (i.e., 3.0 gallons per flush (gpf), or

⁴⁴ Estimated water conservation budget provided by the City on 21 April 2016.

more) in a building that was built prior to 1994 with a ULFT that uses less than 1.6 gpf. Covered rebate expenses include the tank, bowl, supply line, wax ring, caulking, seat, bolts, bolt covers, tax, and professional installation.

Up to three rebates are allowed per *SFR* account and up to four rebates are allowed per *MFR* and *CII* customer account. Between 2010 and 2015, the City provided a total of 316 rebates.

- High-Efficiency Clothes Washing Machine (HECW) Rebates: During FY 2010-2011 and FY 2011-2012, the City offered a HECW Rebate Program to *SFR* and *MFR* customers. As part of this program, offered through a partnership with PG&E, customers receive a \$50 rebate for installing Energy Star-rated HECWs listed in the Qualifying Product list published by the Consortium for Energy Efficiency. This voucher program was able to be used jointly with PG&E's rebate programs.

The City offered the HECW rebate program on a first come, first served basis, budgeting up to \$10,000 in rebates per fiscal year. The HECW Rebate Program was suspended in June 2012 due to an observed saturation in the market. During FY 2010-2011 and FY 2011-2012, the City provided a total of 760 rebates.

- Water Use Survey Program: Water use surveys are offered to *SFR*, *MFR*, and *CII* customers in pre-1994 buildings at no cost to the customer. As part of this program, a Water Efficiency Representative from the City conducts a tour of the property to identify leaks and offer water and money saving opportunities. Participants may receive water-saving equipment and information, as recommended by City staff.
- Plumbing Retrofit Material Giveaways: The City offers free plumbing retrofit materials to *SFR*, *MFR*, and *CII* customers participating in its Water Use Survey Program. The following materials are available at no cost as part of this giveaway program:
 - Bathroom aerators using 1 gpm;
 - Kitchen aerators using 1.5 gpm; and
 - Low-flow shower heads using 1.5 gpm.

The City gave out 50 plumbing retrofit materials between 2010 and 2015.

8.2 IMPLEMENTATION OVER THE PAST FIVE YEARS

10631. (f) Provide a description of the supplier's water demand management measures. This description shall include all of the following: (1)(A) ... a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years.

Table 8-1 and the associated chart summarizes the DMMs implemented by the City and the extent of implementation (e.g., number of surveys, number of rebates) for each of the programs listed under DMM-7 each year between 2010 and 2015.

Water savings from HET rebates and HECW issued over the past five years are conservatively estimated to be over 5 MG.⁴⁵ Through implementation of the DMMs, the City has been able to significantly reduce water demands in its service area and help its customers to achieve water and cost savings.

8.3 PLANNED IMPLEMENTATION TO MEET WATER USE TARGETS

10631.(f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:

(1)(A) ...The narrative shall describe the water demand management measures that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.20.

To achieve the SBx7-7 water use targets described in Section 4, the City intends to continue and expand implementation of the DMMs discussed above. In the future, specific program offerings may change as the market evolves. In particular, the City is exploring a potential program to offer rebates to incentive the replacement of turf with water-efficient landscapes. Additionally, the City is considering offering plumbing retrofits to restaurants to reduce water usage during pre-rinse washing cycles. As discussed in Section 4.5, the City is relying upon continued implementation of these DMMs to achieve its 2020 Target of 181 GPCD.

⁴⁵ Expected annual water savings per each HET change out would be approximately 4,041 gallons per year, using the following calculation (BAWSCA, 2013): (3.0 gpf - 1.6 gpf) x 5 flushes/toilet/day/person x 3.48 persons/house / 2.2 toilets/house x 365 days = 4,041 gal. This calculation assumes that a toilet rated at 3.0 gpf actually operates at 3.0 gpf and relies upon the persons-per-household factor from California DOF (2015).

Expected annual water savings per each HECW change out would be approximately 7,520 gallons per year, using the following calculation (BAWSCA, 2013): (43 gallons/load - 27 gallons/load) x 2.64 people/house x 0.37 loads/person/day x 365 days = 7,520 gallons. This calculation relies upon the persons-per-household factor from California DOF (2015).



CUWCC BMP Retail Coverage Report 2016

Foundational Best Management Practices for Urban Water Efficiency

BMP 1.1 Operation Practices

ON TRACK

7038 City of Tracy

1. Conservation Coordinator provided with necessary resources to implement BMPs?

Name:

Stephanie Reyna-Hiestand

Title:

Water Resources Analyst II

Email:

stephanie.hiestand@cityoftracy.org

2. Water Waste Prevention Documents

WW Document Name	WWP File Name	WW Prevention URL	WW Prevention Ordinance Terms Description
Option A Describe the ordinances or terms of service adopted by your agency to meet the water waste prevention requirements of this BMP.		https://library.municode.com/ca/tracy/codes/code_of_ordinances?nodeId=TIT11PUUT_CH1.128WAMA	The City of Tracy enforces Chapter 11.28 Water Management of the Tracy Municipal Code. This section of the municipal code contains the water shortage contingency plan and water waste provisions.
Option B Describe any water waste prevention ordinances or requirements adopted by your local jurisdiction or regulatory agencies within your service area.			
Option C Describe any documentation of support for legislation or regulations that prohibit water waste.			
Option D Describe your agency efforts to cooperate with other entities in the adoption or enforcement of local requirements consistent with this BMP.			The City regulates and enforces the Water Efficient Landscape Ordinance as written and mandated by the Department of Water Resources on all projects that are submitted for permits.
Option E Describe your agency support positions with respect to adoption of legislation or regulations that are consistent with this BMP.			The City of Tracy supports the efficient use of potable water and is an advocate for stormwater capture, harvest and use. It is also a proponent of alternative sources such as graywater systems.
Option F Describe your agency efforts to support local ordinances that establish permits requirements for water efficient design in new development.			The City enforces compliance with the Department of Water Resources 2015 Model Water Efficient Landscape Ordinance.

At Least As effective As

No



CUWCC BMP Retail Coverage Report 2016

Foundational Best Management Practices for Urban Water Efficiency

BMP 1.1 Operation Practices

ON TRACK

Exemption

No

Comments:



CUWCC BMP Coverage Report 2016

Foundational Best Management Practices For Urban Water Efficiency

BMP 1.2 Water Loss Control

NOT ON TRACK

7038 City of Tracy

Completed Standard Water Audit Using AWWA Software? Yes

AWWA File provided to CUWCC? Yes

2016 COT #7038 AWWA-Water Audit.xls

AWWA Water Audit Validity Score? 71

Complete Training in AWWA Audit Method Yes

Complete Training in Component Analysis Process? Yes

Component Analysis? Yes

Repaired all leaks and breaks to the extent cost effective? Yes

Locate and Repar unreported leaks to the extent cost effective? Yes

Maintain a record keeping system for the repair of reported leaks, including time of report, leak location, type of leaking pipe segment or fitting, and leak running time from report to repair.

Yes

Provided 7 Types of Water Loss Control Info

Leaks Repairs	Value Real Losses	Value Apparent Losses	Miles Surveyed	Press Reduction	Cost Of Interventions	Water Saved (AF)

At Least As effective As

No

Exemption

No

Comments:



CUWCC BMP Coverage Report 2016

Foundational Best Management Practices For Urban Water Efficiency

BMP 1.3 Metering With Commodity

ON TRACK

7038 City of Tracy

Numbered Unmetered Accounts No

Metered Accounts billed by volume of use Yes

Number of CII Accounts with Mixed Use Meters 439

Conducted a feasibility study to assess merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters? Yes

Feasibility Study provided to CUWCC? Yes

Date: 1/1/0001

Uploaded file name:

Completed a written plan, policy or program to test, repair and replace meters Yes

At Least As effective As

Exemption

Comments:



CUWCC BMP Coverage Report 2016

Foundational Best Management Practices For Urban Water Efficiency

BMP 1.4 Retail Conservation Pricing

Not On Track

7038 City of Tracy

Implementation (Water Rate Structure)

Customer Class	Water Rate Type	Conserving Rate?	(V) Total Revenue Commodity Charges	(M) Total Revenue Fixed Carges
Single-Family	Increasing Block	Yes	4300224.4	4392398.32
Multi-Family	Increasing Block	Yes	679303.5	369055.93
Commercial	Increasing Block	Yes	1116051.25	662415.39
Industrial	Increasing Block	Yes	473930.15	56962.89
Institutional	Increasing Block	Yes	184582	116568.02
Dedicated Irrigation	Increasing Block	Yes	833630.88	310683.66
			7587722.18	5908084.21

Calculate: $V / (V + M)$

56 %

Implementation Option: Use Annual Revenue As Reported

Use 3 years average instead of most recent year

Canadian Water and Wastewater Association

Upload file:

Agency Provide Sewer Service: Yes

Customer Class	Rate Type	Conserving Rate?
Single-Family	Increasing Block	Yes
Multi-Family	Increasing Block	Yes
Commercial	Increasing Block	Yes
Industrial	Increasing Block	Yes
Institutional	Increasing Block	Yes
Dedicated Irrigation	Increasing Block	Yes

At Least As effective As

No

Exemption

No

Comments:



CUWCC BMP Coverage Report 2016

Foundational Best Management Practices For Urban Water Efficiency

BMP 2.1 Public Outreach

ON TRACK

7038 City of Tracy

Retail

Does your agency perform Public Outreach programs? Yes

The list of wholesale agencies performing public outreach which can be counted to help the agency comply with the BMP

California Department of Water Resources (DWR), U.S. Bureau of Reclamation

The name of agency, contact name and email address if not CUWCC Group 1 members

Orchard Supply Hardware

Did at least one contact take place during each quarter of the reporting year? Yes

Public Outreach Program List	Number
Flyers and/or brochures (total copies), bill stuffers, messages printed on bill, information packets	43518
Email Messages	3272
Website	6557
General water conservation information	1500
Total	54847

Did at least one contact take place during each quarter of the reporting year? Yes

Number Media Contacts	Number
Articles or stories resulting from outreach	2
Radio contacts	3
Television contacts	3
Newspaper contacts	4
Total	12

Did at least one website update take place during each quarter of the reporting year? Yes

Public Information Program Annual Budget

Annual Budget Category	Annual Budget Amount
advertising	8000
printing	2500
promotional materials	1500
Total Amount:	12000

Public Outreach Additional Programs

Landscaper- Pesticide Applicator Workshop

Stakeholder groups



CUWCC BMP Coverage Report 2016

Foundational Best Management Practices For Urban Water Efficiency

BMP 2.1 Public Outreach

ON TRACK

Public Outreach Additional Programs

Delta Tunnels Workshops

Description of all other Public Outreach programs

Hydrozoning and mulching for less water useOur Water Our World

Comments:

At Least As effective As

No

Exemption

No

0



CUWCC BMP Coverage Report 2016
Foundational Best Management Practices For Urban Water Efficiency

BMP 2.2 School Education Programs

ON TRACK

7038 City of Tracy

Retail

Does your agency implement School Education programs? Yes

The list of wholesale agencies performing public outreach which can be counted to help the agency comply with the BMP

California Department of Water Resources (DWR)

Materials meet state education framework requirements? Yes

Comic Books and outreach material supplied by DWR and USBR

Materials distributed to K-6? Yes

Videos, handouts, and posters

Materials distributed to 7-12 students? Yes (Info Only)

After school educational - hands-on activities

Annual budget for school education program: 500.00

Description of all other water supplier education programs

Reaching out to local teachers for potential water quality program.

Comments:

At Least As effective As

No

Exemption

No

0



CUWCC BMP Coverage Report 2016

7038 City of Tracy

Baseline GPCD: 275.87

GPCD in 2016 148.9

GPCD Target for 2018: 226.20

Biennial GPCD Compliance Table

ON TRACK

Year	Report	Target		Highest Acceptable Bound	
		% Base	GPCD	% Base	GPCD
2010	1	96.4%	265.90	100%	275.90
2012	2	92.8%	256.00	96.4%	265.90
2014	3	89.2%	246.10	92.8%	256.00
2016	4	85.6%	236.10	89.2%	246.10
2018	5	82.0%	226.20	82.0%	226.20

ATTACHMENT J

CITY OF TRACY

2017 WATER

MANAGEMENT PLAN

SECTION 4

BMP 5 YR BUDGET

ATTACHMENT J

B. Provide a 5-Year Budget for Expenditures and Staff Efforts for BMPs

Year 2016 BMP #	BMP Name	Budgeted Expenditure (Not including staff time)	Staff Hours
1	Utilities Operations		
	1.1 Operations Practices	\$43,326.00	10,172
	1.2 Water Loss Control	\$175,467.00	7,452
	1.3 Metering	\$313,820.00	3,360
	1.4 Retail Conservation Pricing	\$43,326.00	24
2	Education Programs		
	2.1 Public Information Programs	\$15,939.70	10
	2.2 School Education Programs	\$513.53	10
3	Residential	\$10,000.00	100
4	CII	\$10,000.00	100
5	Landscape	\$10,000.00	200
	Total	\$622,392.23	21,428

Year 2017 BMP #	BMP Name	Budgeted Expenditure (Not including staff time)	Staff Hours
1	Utilities Operations		
	1.1 Operations Practices	\$44,409.15	10,208
	1.2 Water Loss Control	\$179,853.68	7,488
	1.3 Metering	\$321,665.50	3,396
	1.4 Retail Conservation Pricing	\$44,409.15	60
2	Education Programs		
	2.1 Public Information Programs	\$16,338.19	46
	2.2 School Education Programs	\$526.37	46
3	Residential	\$10,000.00	100
4	CII	\$10,000.00	100
5	Landscape	\$10,000.00	200
	Total	\$637,202.04	21,644

Year 2018 BMP #	BMP Name	Budgeted Expenditure (Not including staff time)	Staff Hours
1	Utilities Operations		
	1.1 Operations Practices	\$45,519.38	10,244
	1.2 Water Loss Control	\$184,350.02	7,524
	1.3 Metering	\$329,707.14	3,432
	1.4 Retail Conservation Pricing	\$45,519.38	96
2	Education Programs		
	2.1 Public Information Programs	\$16,746.65	82
	2.2 School Education Programs	\$539.53	82
3	Residential	\$10,000.00	100
4	CII	\$10,000.00	100
5	Landscape	\$10,000.00	200
	Total	\$652,382.09	21,860

Year 2019 BMP #	BMP Name	Budgeted Expenditure (Not including staff time)	Staff Hours
1	Utilities Operations		
	1.1 Operations Practices	\$46,657.36	10,280
	1.2 Water Loss Control	\$188,958.77	7,560
	1.3 Metering	\$337,949.82	3,468
	1.4 Retail Conservation Pricing	\$46,657.36	132
2	Education Programs		
	2.1 Public Information Programs	\$17,165.31	118
	2.2 School Education Programs	\$553.02	118
3	Residential	\$10,000.00	100
4	CII	\$10,000.00	100
5	Landscape	\$10,000.00	200
	Total	\$667,941.64	22,076

Year 2020 BMP #	BMP Name	Budgeted Expenditure (Not including staff time)	Staff Hours
1	Utilities Operations		
	1.1 Operations Practices	\$47,823.80	10,316
	1.2 Water Loss Control	\$193,682.74	7,596
	1.3 Metering	\$346,398.56	3,504
	1.4 Retail Conservation Pricing	\$47,823.80	168
2	Education Programs		
	2.1 Public Information Programs	\$17,594.45	154
	2.2 School Education Programs	\$566.84	154
3	Residential	\$10,000.00	100
4	CII	\$10,000.00	100
5	Landscape	\$10,000.00	200
	Total	\$683,890.18	22,292