

CITY OF GREENFIELD



2015 URBAN WATER MANAGEMENT PLAN

**CITY OF GREENFIELD
RESOLUTION NO. 2018-26**

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF
GREENFIELD ADOPTING THE 2015 URBAN WATER
MANAGEMENT PLAN**

WHEREAS, the California Urban Water Management Planning Act, Water Code section 10610 *et seq.*, mandates that every urban water supplier providing water for municipal purposes to more than 3,000 customers annually, must prepare an Urban Water Management Plan (UWMP), the primary objective of which is to plan for the conservation and efficient use of water; and

WHEREAS, the UWMP must be adopted by the governing board of each system and submitted to the California Department of Water Resources; and

WHEREAS, the City of Greenfield is an urban supplier of water providing water for municipal purposes to more than 3,000 customers; and

WHEREAS, on March 17, 2008, the City Council adopted the 2008 Urban Water Management Plan (Resolution No. 2008-15), the first plan developed by the City; and

WHEREAS, on July 22, 2014, the City Council approved the City of Greenfield Urban Water Shortage Contingency Plan as required by the 2008 UWMP and the State Water Code; and

WHEREAS, the State Water Code requires the UWMP be periodically reviewed at least once every five years (beginning in 2010), and the City shall make any amendments or changes to its UWMP which are indicated by that review; and

WHEREAS, the City has prepared and circulated for public review a draft 2015 Urban Water Management Plan, and a properly noticed public hearing regarding said UWMP was held by the City Council on March 27, 2018; and

WHEREAS, the City did prepare and submit said 2015 UWMP to the California Department of Water Resources;

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Greenfield as follows:

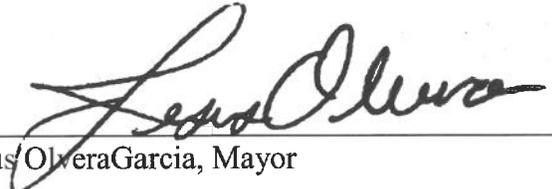
1. That the 2015 Urban Water Management Plan is hereby adopted; and
2. That the City Manager is hereby authorized and directed to submit the 2015 Urban Water Management Plan to the California Department of Water Resources within 30 days after this date.

PASSED AND ADOPTED by the City Council of the City of Greenfield at a public meeting of the City Council held on the 27th day of March 2018, by the following vote:

AYES, and all in favor, therefore, Councilmembers: Mayor OlveraGarcia, Mayor Pro-tem Torres, Councilmembers Santibanez and Martinez

NOES, Councilmembers: None

ABSENT, Councilmembers: None



Jesus OlveraGarcia, Mayor

Attest:



Ann F. Rathbun, City Clerk



**City of Greenfield
2015 Urban Water Management Plan**

Contact Sheet

Date this plan was submitted to the Department of Water Resources: April 11, 2018

Name of Person(s) preparing this plan:

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The Water supplier is a: **Municipality**

The Water supplier is a: **Retailer**

Utility Services provided by the water supplier include: **Water, Sewer**

Is this Agency a Bureau of Reclamation Contractor? **NO**

Is this Agency a State Water Project Contractor? **NO**



City of Greenfield 2015 Urban Water Management Plan

Acknowledgements

City Council

Jesus OliveraGarcia, Mayor
Avelina Torres, Mayor Pro-Tem
Lance Walker, Councilmember
Leah Santibañez, Councilmember
Yanely Martinez, Councilmember

Management Personnel

Jaime Fontes, City Manager
Mic Steinmann, Community Services Director
Arturo "Felix" Felix, Public Works Operations Manager



City of Greenfield 2015 Urban Water Management Plan

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CHAPTER 1: INTRODUCTION AND OVERVIEW

1.1 Urban Water Management Plan

The Urban Water Management Act (Act) became part of the State Water Code with the passage of Assembly Bill 797 during the 1983-1984 regular session of the California Legislature. The Act applies to every urban water supplier that provides water for municipal purposes either directly or indirectly to more than 3,000 customers or supplies more than 3,000 acre-feet of water annually. Under the Act, an Urban Water Management Plan (UWMP) must be adopted by the governing board of each system and submitted to the California Department of Resources. The City of Greenfield provides water for municipal purposes to more than 3,000 customers and is, therefore, subject to the Act.

1.2 Water Conservation Bill of 2009

The Act has been modified over the years in response to the State's water shortages, droughts, and other factors. A significant amendment was made in 2009, after the drought of 2007-2009 and because of the governor's call for a statewide 20 percent reduction in urban water use by the year 2020. This was the Water Conservation Act of 2009, also known as SB X7-7. This Act requires agencies establish water use targets for 2015 and 2020 that will support statewide urban water consumption savings of 20 percent by December 31, 2020. SB X7-7 requires each water agency preparing a 2010 UWMP to calculate baseline water use as well as an interim (2015) and final (2020) water use reduction target.

1.3 Urban Water Management Plans in Relation to Other Planning Efforts

To help combat the overdraft of the Salinas Valley Groundwater Basin, the City has joined the Water Awareness Committee of Monterey County (WAC). Through the WAC, representatives from several agencies throughout Monterey County work together coordinating conservation and other water awareness efforts, including educational programs, information booths for special events, and public understanding of Monterey County water challenges and opportunities.

The City of Greenfield has recently updated both the City's water and wastewater master plans. These plans include deployment of water management tools. The City has already implemented a new water rate schedule that will show progress toward meeting the state mandated water conservation goals by 2020. In 2017, the City completed a Water Meter Replacement program. The new meters are part of the resource savings programs the City has been implementing in conjunction with Opterra Energy Services. The new meters are read using a radio transmitter. The radio transmits water usage data tower receivers directly to City Hall, thereby enabling the



City to avoid any manual collection of information and reduce staff costs. The new meters will also ensure accurate water usage readings.

1.4 Urban Water Management Plan Organization

This UWMP was prepared following the plan preparation recommendations and formats presented in the Department of Water Resources (DWR) 2016 guidebook. Consistent with those guidelines, this UWMP is organized into the following chapters.

- Chapter 1 – Introduction and Overview
- Chapter 2 – Plan Preparation
- Chapter 3 – System Description
- Chapter 4 – System Water Use
- Chapter 5 – Baselines and Targets
- Chapter 6 – Water Supply System
- Chapter 7 – Water Supply Reliability
- Chapter 8 – Water Shortage Contingency Planning
- Chapter 9 – Demand Management Measures
- Chapter 10 – Plan Adoption, Submittal, and Implementation
- Chapter 11 – DWR Checklist

1.5 Public Participation and Plan Adoption

The Act requires and encourages public participation and a public hearing regarding the preparation of the UWMP. A draft of this plan was made available to the public through the City's web page and at City offices in the Civic Center. Notice of the availability of the plan and public hearing by the City Council was published in the local newspaper on March 7 and again on March 14, 2018. The City Council held public hearing on the plan on March 27, 2018. Following public hearing and receipt of public comments, the City Council adopted this plan on March 27, 2018 (Resolution 2018-26). As adopted by the City Council, this UWMP will be submitted to the Department of Water Resources for its approval.



CHAPTER 2: PLAN PREPARATION

This chapter provides information on the City’s process for developing the 2015 UWMP, including efforts in coordination and outreach with other agencies in the region.

2.1 Basis for Preparing a Plan

The City of Greenfield is an urban public water system with over 3,600 connections. The State Water Code requires the City prepare an Urban Water Management Plan. The City of Greenfield is regulated by State Water Resources Control Board, Division of Drinking Water. The Division requires regular monthly water reports from public water systems. The City files electronic Annual Reports to the Drinking Water Program (eARDWP), which include annual reports of water usage and other information. The information provided in this UWMP is consistent with the data reported in the eARDWP.

The City of Greenfield serves as its own Public Water System (PWS). Information about that PWS is shown below. (Table 2-1)

Table 2.1 Public Water System			
Public Water System Number	Public Water System Name	Number of Municipal Connections 2015	Volume of Water Supplied 2015 (AF)
2710008	City of Greenfield	3,600	1,559

2.2 Regional Planning

The City of Greenfield is not part of any regional alliance. This UWMP is prepared by the City of Greenfield as an individual UWMP. (Table 2-2)

Table 2-2 Plan Identification	
Select One	Type of Plan
<input checked="" type="checkbox"/>	Individual UWMP
<input type="checkbox"/>	Water Supplier is also a member of a RUWMP
<input type="checkbox"/>	Water Supplier is also a Member of a Regional Alliance
<input type="checkbox"/>	Regional Urban Water Management Plan (RUWMP)

Although not part of a regional alliance for purposes of preparation of this UWMP, the City and Clark Colony Water Company have submitted application to Department of Water Resources to be a Groundwater Sustainability Agency (GSA) with authority and jurisdiction to undertake sustainable groundwater management for that portion of the Salinas Valley Groundwater Basin – Forebay Subarea that covers both the City limits and the Clark Colony service area. The GSA



has received numerous petitions from adjoining landowners to include the petitioned lands in the management area of the GSA. The activities of the GSA will be coordinated with this UWMP.

2.3 Fiscal or Calendar Year and Units of Measure

Information provided in this UWMP was prepared on a calendar year basis. Water volumes are presented in units of acre-feet (AF) as summarized in Table 2-3.

Table 2-3 Agency Identification	
Type of Agency (select one or both)	
()	Agency is a wholesaler
(X)	Agency is a retailer
Fiscal or Calendar Year (select one)	
(X)	UWMP Tables are in Calendar Years
()	UWMP Tables are in Fiscal Years
Units of Measure Used in UWMP	
Unit	Acre-feet (AF)

2.4 Coordination and Outreach

The City did not and was not required to notify any wholesale water suppliers. (Table 2.4)

Table 2-4: Water Supplier Information Exchange
The retail supplier has informed the following wholesale supplier(s) of projected water use in accordance with California Water Code (CWC) 10631.
No wholesale water supplier needed to be informed.

2.5 Coordination with Other Agencies and the Community

Greenfield's 2015 UWMP is an update to the 2010 UWMP. The draft plan was submitted to area regional stakeholders and was available to the public in both hard copy and electronic format on the City's web site and at City offices. The following is a list of agencies and organizations the City contacted in the preparation of this 2015 UWMP:

- Monterey County Water Resources Agency (MCWRA)
- Clark Colony Water Company
- California Department of Public Health District 05 (CDPH)
- City of Soledad
- California Water Service (King City Office)
- Arroyo Seco GSA

Copies of the letters sent to each of those agencies are included in Appendix H.



CHAPTER 3: SYSTEM DESCRIPTION

This chapter describes the City of Greenfield water system and service area to provide an understanding of the various elements that affect water supply and demand.

3.1 Service Area Physical Description

John S. Clarke and other land developers laid out the town from 1902 to 1905 on part of the Rancho Arroyo Seco Mexican land grant, created by a subdivision of 4,000 acres. The Clark Colony Water Company, which became the organization for water distribution to the city from the nearby Arroyo Seco AVA, was formed in April 1905. The organized water canal system and ideal growing conditions attracted people of Danish, Swiss and other nationalities from surrounding areas to settle in Greenfield. Today, the Clark Colony Water Company still holds 1905 Prior Rights guaranteeing delivery to its members a certain amount of water from the Arroyo Seco River before any other agencies. Clark Colony evolved into Clark City and was eventually renamed Greenfield after the United States Postal Service informed the city that there were too many "Clark Cities" in the state. Greenfield was recognized as a municipality by the State legislature and incorporated on January 7, 1947.

The City of Greenfield is in the heart of the Salinas Valley, formed by the Gabilan Mountains range to the east and the Santa Lucia Mountains range to the west. Greenfield is 135 miles south of San Francisco, 95 miles south of San Jose and 60 miles north of Paso Robles. According to the United States Census Bureau, the city encompasses a total area of 2.1 square miles, all of it land (Figure 3.1).

The City obtains its municipal potable water supply from the Central Salinas Valley Groundwater Basin (SVGB) – Forebay Aquifer. This sub-basin occupies the central portion of the Salinas Valley and extends from the town of Gonzales in the north to approximately three miles south of Greenfield.

3.2. Service Area Map

The City water system is owned and operated by the City of Greenfield. Personnel who operate the water system are certified by the State Water Resources Control Board; Title 22 Code of Regulation; Chapter 13 Operator Certification; Sections 63758-63770.

The City currently operates from three (3) wells varying in depth and two (2) water storage tanks. In 2015, these wells supplied 501 million gallons of water (1,539.1 Acre Feet) for Greenfield's 17,898 residents with water for personal, commercial use, and fire protection. The City is in Monterey County, approximately 32 miles southeast of the city of Salinas, between Soledad on the north and King City on the south (Figure 3-1).



Figure 1 Regional Location Map

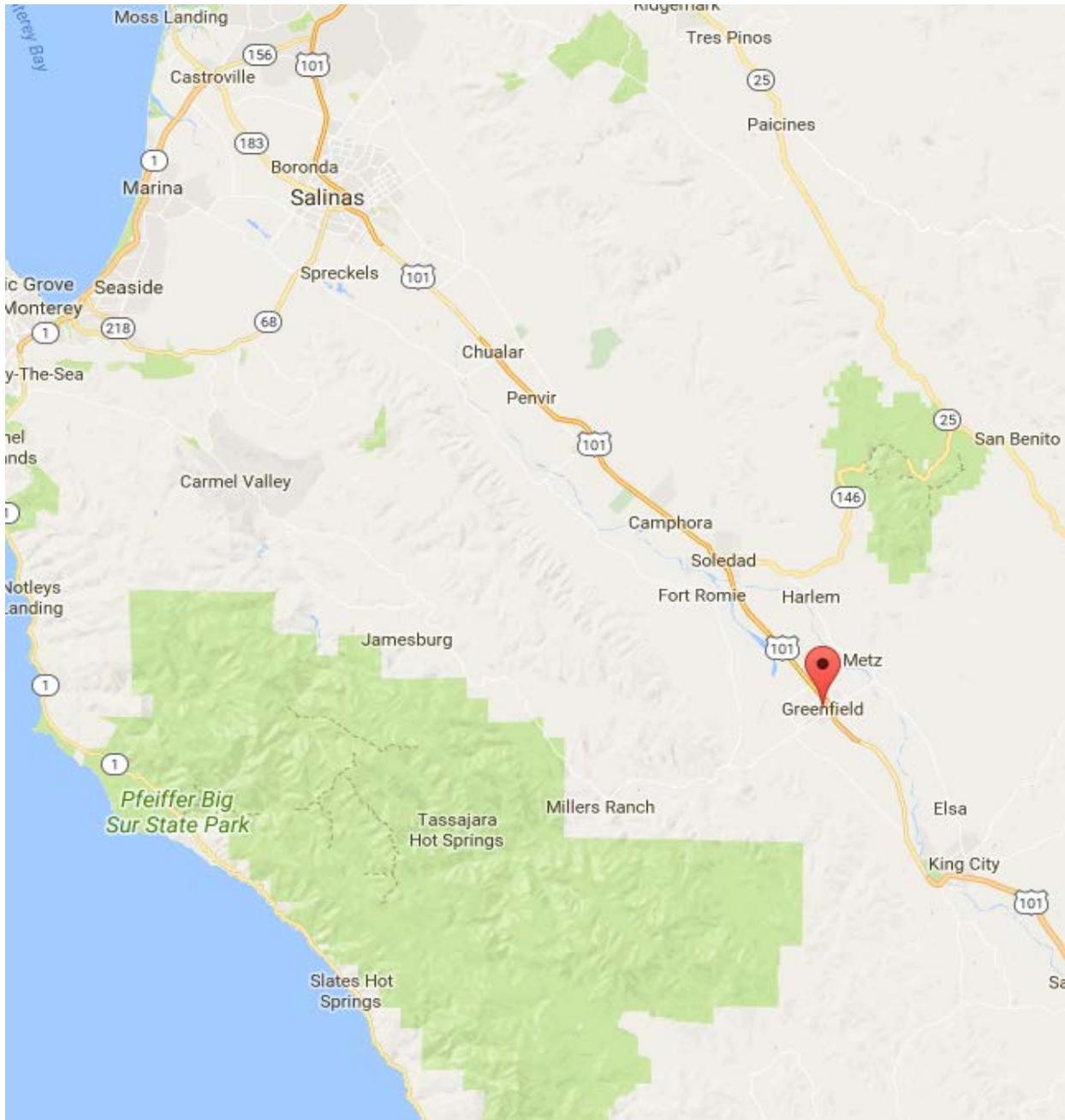



Figure 3-1
 Regional Location Map
 2015 Urban Water Management Plan
 City of Greenfield

Legend

-  Protected Open Areas
-  Waters of The State



3.3. Service Area Climate

“The climate for Greenfield is moderate with average temperatures around 40 degrees in winter and about 80 degrees in summer. High temperatures may reach the low 90s during mid-summer. Most rain falls between October and March; there are 14-20 inches of rain annually. On some occasions, there might be a snow fall in the mountains.” (WIKIPEDIA, The Free Encyclopedia). Figure 3-2 shows City’s average temperature, average precipitation, record lows and highs provided by Intellicast (the authority in expert weather).

Greenfield, California						
Weather Report · Interactive Map · Extended Forecast · Hourly Forecast · Past Observations · Historic Averages						
Monthly Averages & Records - °F °C						
Date	Average Low	Average High	Record Low	Record High	Average Precipitation	Average Snow
January	37°	63°	15° (1976)	89° (1931)	2.35"	0"
February	40°	66°	19° (1929)	90° (1977)	2.65"	0"
March	42°	69°	22° (1971)	93° (2007)	2.49"	0"
April	43°	75°	24° (1927)	102° (2004)	0.74"	0"
May	47°	78°	31° (1975)	108° (1976)	0.24"	0"
June	50°	83°	36° (1975)	112° (1976)	0.07"	0"
July	53°	85°	34° (1936)	111° (2006)	0.01"	0"
August	53°	85°	31° (1964)	113° (1931)	0.05"	0"
September	51°	85°	32° (1950)	113° (1955)	0.25"	0"
October	47°	80°	23° (1935)	109° (1980)	0.55"	0"
November	40°	69°	20° (1958)	95° (1930)	1.23"	0"
December	36°	63°	14° (1990)	90° (1958)	1.67"	0"

3.4 Service Area Population

The City’s 2016 population was estimated by the State Department of Finance at 17,484. The 2010 United States Census reported that Greenfield had a population of 16,330. The population density was 7,647.9 people per square mile. The City’s population increase for the last five years has averaged a 1.5% growth rate consistent with 2014 Association of Monterey Bay Area Governments (AMBAG) Regional Growth Forecast projections (Appendix B). The City’s current service area population and estimated future populations through 2040 are shown in Table 3-1.

Table 3-1: Population - Current and Projected						
Population Served	2015	2020	2025	2030	2035	2040
City of Greenfield	16,564	21,341	22,061	22,835	23,079	23,851
Note: 2015 population and projections through 2040 interpolated from 2014 AMBAG Regional Growth Forecast at http://www.ambag.org/programs-services/planning/regional-growth-forecast						



CHAPTER 4: SYSTEM WATER USE

This chapter provides a description and quantifies the City’s current water use and water use projections through the year 2035. The data provided in this section allows the City to accurately analyze the use of the water resources, conduct good resource planning and manage the water supply and appropriately plan future infrastructure investments.

4.1 Recycled versus Potable and Raw Water Demand

The City’s water supply is exclusively from groundwater sources. Tables 4-1, 4-2, 4-3, and 4-4 contain information documenting current and projected raw water demands.

4.2 Water Use by Sector

The City’s water system supplies water to approximately 3,650 connections and 17,898 residences through a maze of water lines ranging from 4” to 16” lines. Each water service is equipped with a water meter for accounting and billing. The City is responsible for operating and maintaining the water system up to the water meter. Most of the City’s water connections are for single family residential (SFR) accounts. SFR accounts make up 83% of the service connections; multi-family customers (apartments, duplexes and trailer parks) make up approximately 11%; commercial (businesses, schools, churches and business parks) make up 4%; landscape (parks and medians) make up 1%; and 1% are “other” (fire protection, government, and fire hydrants). Tables 4-1 and 4-2 contain the actual and projected water demands, respectively.

Table 4-1 Demand for Potable and Raw Water – Actual			
User Type	2015 actual		
	Number of Connections	Level of Treatment when Delivered	Volume (AF)
Single Family	3,124	Drinking Water	1,069
Multi-Family	289	Drinking Water	200
Commercial ¹	148	Drinking Water	111
Industrial	10	Drinking Water	14
Landscape Irrigation	63	Drinking Water	45
Other	49	Drinking Water	22
Landscape ²		Drinking Water	30
Losses			48
Total			1,461

1. Commercial use includes industrial and institutional use
2. Landscape usage for metering purposes only not billed by City.



Table 4-2 lists the projected number of current (2015) and projected connections by user type. The number of connections were projected using a 1.5 percent growth rate consistent with Revised Draft 2016 Association of Monterey Bay Area Governments (AMBAG) Regional Growth Forecast projections.

Table 4-2 Projected Number of Total Connections by User Type					
User Type	2015	2020	2030	2035	2040
Single Family Residential	3,124	3,452	3,814	4,215	4,657
Multi-Family Residential	289	319	352	389	430
Commercial/Industrial	148	163	180	199	220
Industrial	10	11	12	13	15
Landscape Irrigation	63	69	76	85	93
Other	49	54	58	66	73
Total	3,683	4,158	4,492	4,967	5,488

Table 4-3 lists the projected water demands through the year 2040. The projected water demands were obtained using a 1.5 percent growth rate consistent with the population growth. The growth rate was multiplied by the user's 2015 annual consumption to calculate projected water demands.

Table 4-3 Demands for Potable Water- Projections (Standard Table 4.2) in Acre/Feet					
User Type	2015	2020	2030	2035	2040
Single Family Residential	1,068	1,180	1,304	1,440	1,592
Multi-Family Residential	200	221	244	269	289
Commercial/Industrial	111	122	135	149	165
Industrial	14	15	17	18	21
Landscape Irrigation	44	48	53	59	65
Other	21	23	25	28	38
Total	1,458	1,609	1,778	1,963	2,170

Table 4-4 provides a summary of the City's potable water demand projections. The City does not currently have the necessary infrastructure to support the use of recycled water; recycled water is not, therefore, currently feasible.

Table 4-4 Total Water Demand (Standard Table 4.3)					
Water Demand Type	2015	2020	2030	2035	2040
Potable and Raw Water from Tables 4.1 & 4.2	1,461	1,609	1,778	1,963	2,170
Recycled Water Demand from Standard Table 6.4	0	0	0	0	0
Total Acre Feet	1,461	1,609	1,778	1,963	2,170



4.3 Distribution System Water Losses

The City’s water distribution system has been metered for over 20 years. This has allowed the City to better service its residents in identifying potential leaks in residential and commercial buildings. In 2017, the City completed a major overhaul of its metering system with installation of new state of the art AMR (Automatic Meter Read) meters in association with the Opterra Energy Efficiency Project. The system will give the City better control of detecting resident and commercial leaks, high usage and more accurate reading. The City’s 2016 Water Master Plan identifies older and smaller diameter pipes within the system that require replacement. The City currently fixes and replaces old leaking water residential lateral lines which have helped reduce the system losses. Water distribution system losses are a crucial part of water demand management. The Distribution System loss is the volume of water produced and entering the distribution system but not metered to customers. Causes of distribution system water losses include:

- Slow Meters
- Theft
- Fire Protection
- Unmetered water used during flushing dead ends for water quality within the system
- Irrigation of parks and landscape that where originally unmetered

The City has determined its water loss to be 78 AF for the year 2015 (Table 4.5). Table 4.6 contains a summary of water loss since 2005.

Table 4.5 Water Loss Summary for Most Recent 12-Month Period	
Reporting Period Start Date	System Water Loss
January 2015	78 AF

Table 4.6 12 Year Water Loss Audit Reporting (Standard Table 4.4)				
Reporting Period Start Date (mm/yyyy)	Water Produced	Water Metered	Volume of Water Loss (AF)	% of Lost Water
01/2005	1,977.68	1,751.69	225.99	11%
01/2006	2,192.70	2,169.77	22	1%
01/2007	1,834.74*	2,285.62	N/A	N/A
01/2008	2,058.30*	2,111.93	N/A	N/A
01/2009	2,020.40	1,965.14	55.26	3%
01/2010	1,937.80	1,896.61	41.19	3%
01/2011	1,865.70	1,849.62	16.08	1%
01/2012	1,905.30*	1,935.49	N/A	N/A
01/2013	1,967.30	1,893.28	74.02	8%
01/2014	1,794.80	1,734.30	60.5	4%
01/2015	1,539.10	1,461.16	77	5%

* Well 6 flow meters not working properly during this period



The unaccounted water averaged 6.5 percent of the total produced water since 2005. Most of the volume of unaccounted water was for irrigation of Patriot Park, which was not previously metered. The City has installed water meters at all remaining unmetered connections, including Patriot Park.

4.4 Future Water Savings

The water demand projections included in this UWMP do not include “passive savings” for new and future customers based on identifiable savings from codes, standards, ordinances, or transportation and land use plans. Although identifying and including such “passive savings” is not a required element of the UWMP, the City does have a number of water conservation ordinances and programs in place that encourage water conservation and reduced water consumption. Those ordinances and programs are described elsewhere in this UWMP and included in various appendices to this report.

The City Municipal Code (Code) includes requirements that promote water use efficiency and prohibit water waste. The Water System section of the Code (Chapter 13.12) lays out the requirements for new water connections, allowing the City to track new demands and ensure that those users are compliant with water use standards. Chapter 13.09 of the Code establishes mandatory water conservation regulations that are applicable to all properties within the City and all water customers. These ordinances, in conjunction with the City’s Water Shortage Contingency Plan, enable the City to encourage customers to practice more efficient and responsible water use which will have lasting impacts on the City’s per capita water use rates.

The City currently has rebate programs that encourage residential customers to replace older, inefficient toilets, washing machines, and dishwashers with new higher efficient appliances. The City also has a landscape rebate program for property owners that install drought tolerant and water efficient landscaping. The City provides customers with free low flow shower heads, faucet aerators, and garden hose guns.

The City is also of member Water Awareness Committee of Monterey County, web site: <http://www.waterawareness.org>.

4.5 Water Use for Lower Income Households

Water Code Section 10631.1 requires water suppliers identify the projected water use for single-family and multi-family residential units for lower income households as identified in the City’s adopted General Plan Housing Element. The intent of this requirement is to assist water suppliers in complying with the requirement under Section 65589.7 of the Government Code to grant a priority for the provision of service to housing units affordable to lower income households.



The City has an inclusionary housing ordinance, Municipal Code section 17.51.060, that is intended to enhance the public welfare by meeting the City's regional share of housing needs, assisting in the implementation of the Housing Element goals, policies, and programs, and ensuring compatibility between future housing development and housing units affordable to persons of very low-, low-, and moderate-income. The Housing Element, the City's inclusionary housing ordinance, and the City's zoning code (chapter 17) require developable land in the City is utilized in a manner consistent with state and local land use and housing policies. The inclusionary housing ordinance requires:

- 1) Multifamily Rental Inclusionary Units: 10% of the total units in the development shall be set aside for low-income households and 10% set aside for very low-income households.
- 2) Non-Multifamily Rental Inclusionary Units: 10% of the total units in the residential development shall be set aside for low-income households and 10% for moderate-income households.
- 3) For-Sale Inclusionary Units: 10% of the total units in the development shall be set aside for moderate-income households and 10% for low-income households.

Although the City has not specifically identified the water use requirements for lower income single-family and multifamily residential units, the City is committed to supporting and encouraging new affordable housing units, both single-family and multifamily. As required by the Government Code, the City gives priority in its planning and permitting process to new housing development projects that include housing for lower income households. Under the City's inclusionary housing ordinance, all new housing development must include a minimum percentage of units that are affordable to very low-, low-, and moderate-income households.

The lower income housing units identified in the Housing Element are included within the overall housing and population projections upon which the projected water use demands included in this UWMP are based. Lower income household water demands are no different than those for all other income levels. Although not separately identified, lower income household demands are included in the water demand projections of this UWMP.

4.6 Climate Change

The DWR Guidebook indicates discussion of climate change and its impact on future water demands, production, and distribution is optional. The City has not in the past had the staff or financial resources available to conduct such climate change analyses. In future iterations of the City's UWMP, climate change analyses will be included to the extent feasible and to the extent staff and financial resources are available.



CHAPTER 5: BASELINES AND TARGETS

The UWMPA requires that retail water agencies provide a description of methods used for calculating their baseline consumption as well as targeted water consumption. For the 2015 UWMP, the agencies are required to indicate whether the 2015 interim water use target was achieved and whether the agency is on track to meet the “20X2020” goals originally set forth by Governor Schwarzenegger to reduce per capita water consumption by 20 percent by the year 2020. The City utilized the SB X7-7 verification tables to determine compliance with the Water Conservation Act of 2009.

5.1 Updating Calculations from 2010 UWMP

The 2010 UWMP established the 2020 Urban Use Target approach using the 20 percent reduction, defined by DWR as Method 1. Following a review of the Department of Finance (DOF) population estimates for 2010 based on 2000 census data and actual 2010 census data, DWR determined that significant discrepancies exist. As a consequence, DWR determined that any agency that used the 2010 population based on the 2000 census data must recalculate the population over the baseline period for the 2015 UWMP using 2010 census data.

The City’s 2010 UWMP used population data based on the 2010 census in calculating the population over the baseline period. Because DOF year 2010 population projections were not utilized, it is not necessary to update the projection methodology utilized in the City’s 2010 UWMP.

5.2 Baseline Periods

The City of Greenfield used the 10-year baseline period. The representative period used was 2000 through 2009. The City’s calculations for the base periods are documented in the following table.

SB X7-7 Table 1 Baseline Period Ranges			
Baseline	Parameter	Value	Units
10- to 15-year Baseline Period	2009 total water deliveries	2,058	Acre Feet
	2009 total volume of delivered recycle water	0	Acre Feet
	2009 recycled water as percent of total deliveries	0.00%	Percent
	Number of years in baseline period	10	Years
	Year beginning baseline period range	2000	
	Year ending baseline period range	2009	
5-year Baseline Period	Number of years in baseline	5	Years
	Year beginning baseline period range	2005	
	Year ending baseline period range	2009	



In the City’s 2010 UWMP, a 5-year range (2006-2010) was used to calculate the 2020 urban water use target, which yielded a 5-year average per capita water use target of 120 GPCD. To achieve a 20% water use reduction, the SB X7-7 verification tables established a 2020 conservation target of 91 GPCD and a 2015 interim target of 102 GPCD.

5.3 Service Area Population

Agencies whose service area boundaries correspond with 95 percent or more of the boundaries of a city during the baseline period and the compliance year 2015 can utilize population estimates from tables prepared by the Department of Finance (DOF). The City meets this criterium. The DWR Population Tool was also used to determine the 10-year population estimates (SB X7-7 Table 2).

SB X7-7 Table 2 Method for Population Estimates	
(X)	1. Department of Finance (DOF)
()	2. Persons-per-Connection Method
(X)	3. DWR Population Tool
()	4. Other

The service area population for each of the baseline years is shown in SB X7-7 Table 3.

SB X7-7 Table 3 Service Area Population		
Year		Population
10 to 15 Year Baseline Population		
Year 1	2000	-
Year 2	2001	11,005
Year 3	2002	11,063
Year 4	2003	11,158
Year 5	2004	11,446
Year 6	2005	12,359
Year 7	2006	14,400
Year 8	2007	15,282
Year 9	2008	15,282
Year 10	2009	14,985
5 Year Baseline Population		
Year 1	2005	12,359
Year 2	2006	14,400
Year 3	2007	15,282
Year 4	2008	15,282
Year 5	2009	14,985
2015 Compliance Year Population		
2015		16,564



5.4 Gross Water Use

Gross water use is a measure of water that enters the City’s distribution system over a 12-month period with certain allowable exclusions. These exclusions are recycled water delivered within the service area, indirect recycled water, water placed into long-term storage, water conveyed to another urban supplier, water delivered for agricultural use, and process water.

Gross water use is accurately measured at the point that water enters the distribution system. Measuring at this point ensures that all water, including losses and other non-revenue water (e.g., firefighting, line flushing) is accounted for. Gross water use is calculated for each baseline year and the 2015 compliance year. Gross water use is shown in Table 5-2.

SB X7-7 Table 4 Annual Gross Water Use								
Baseline Year		Volume into Distribution System	Exported Water	Change in Dist. System Storage	Indirect Recycled Water	Water Delivered for Ag. Use	Process Water	Annual Gross Water Use
		(AF)	(AF)	(AF)	(AF)	(AF)	(AF)	(AF)
10 to 15 Year Baseline – Gross Water Use								
Year 1	2000	n/a	0	0	0	0	0	n/a
Year 2	2001	555	0	0	0	0	0	555
Year 3	2002	594	0	0	0	0	0	594
Year 4	2003	1,811	0	0	0	0	0	1,811
Year 5	2004	1,978	0	0	0	0	0	1,978
Year 6	2005	1,977	0	0	0	0	0	1,977
Year 7	2006	2,192	0	0	0	0	0	2,192
Year 8	2007	1,897*	0	0	0	0	0	1,897
Year 9	2008	2,058*	0	0	0	0	0	2,058
Year 10	2009	2,020	0	5	0	0	0	2,105
10 to 15 year baseline average gross water use								1,675
5 Year Baseline – Gross Water Use								
Year 1	2005	1,977	0	0	0	0	0	1,977
Year 2	2006	2,192	0	0	0	0	0	2,192
Year 3	2007	1,897*	0	0	0	0	0	1,897
Year 4	2008	2,058*	0	0	0	0	0	2,058
Year 5	2009	2,020	0	0	0	0	0	2,020
5 year baseline average gross water use								2,029
2015 Compliance Year- Gross Water Use								
2015		1,539	5-year baseline average gross water use					1,539

*The years 2007 to 2008 Well # 6 master meter was not working properly.



5.5 Baseline Daily Per Capita Water Use

The final step in baseline calculations is determining the daily per capita water use in each of the baseline years. All agencies must complete SB X7-7 Table 5. Once population and gross water use have been determined and entered into SB X7-7 Table 5, the GPCD for each baseline year is calculated.

SB X7-7 Table 5 Gallons Per Capita Per Day (GPCD)				
Baseline Year		Service Area Population	Annual Gross Water Use	Daily Per Capita Water Use (GPCD)
10 to 15 Year Baseline Population				
Year 1	2000	-	n/a	
Year 2	2001	11,005	555	45
Year 3	2002	11,063	594	48
Year 4	2003	11,158	1,811	145
Year 5	2004	11,446	1,978	154
Year 6	2005	12,359	1,977	143
Year 7	2006	14,400	2,192	136
Year 8	2007	15,282	1,897*	111
Year 9	2008	15,282	2,058*	120
Year 10	2009	14,985	2,015	120
10 Year Average baseline				114
5 Year Baseline GPCD				
Year 1	2005	12,359	1,977	143
Year 2	2006	14,400	2,192	136
Year 3	2007	15,282	1,897*	111
Year 4	2008	15,282	2,058*	120
Year 5	2009	14,985	2,020	120
5 Year Average Baseline				126
2015 Compliance Year GPCD				
2015		16,564	1,539	83

SB X7-7 Table 6 provides a summary of the calculated baselines and 2015 consumption based on the data provided in SB X7-7 Table 5.

SB X7-7 Table 6 Gallons per Capita per Day Summary	
10 Year Baseline GPCD	114
5 Year Baseline GPCD	126
2015 Compliance Year GPCD	83



5.6 2015 and 2020 Targets

The 2010 UWMP established the 2020 Urban Use Target approach using a 20 percent reduction from the 10 to 15 year baseline, defined by DWR as Method 1, from SB X7-7 Table 7.

SB X7-7 Table 7 2020 Target Method		
Target Method		Supporting Documentation
(X)	Method 1	SB X7-7 Table 7A
()	Method 2	SB X7-7 Tables 7B, 7C, and 7D
()	Method 3	SB X7-7 Table 7E
()	Method 4	Method 4 Calculator

The City's 2020 Urban Water Use Target is calculated as 80 percent of the 10 to 15 year daily per capita water use baseline (114 GPCD x 80% = 91 GPCD). This target GPCD reflecting a 20 percent reduction from the 10 to 15 Year Baseline water usage is shown in SB X7-7 Table 7-A below.

SB X7-7 Table 7-A Target Method 1 20% Reduction	
10 to 15 Year Baseline GPCD	2020 Target GPCD
114	91

The 2020 calculated water use target must reduce the City's 2020 water use by a minimum of 5% from the 5 year baseline. SB X7-7 Table 7-F shows that the calculated 2020 target (91 GPCD) is less than the maximum 2020 target (120 GPCD). The City is required to meet the lower of these two targets. This table confirms that the City's UWMP 2020 water use target (91 GPCD) is in compliance with the water reduction targets and requirements of the Urban Water Management Act of the State Water Code.

SB X7-7 Table 7-F Confirm Minimum Reduction For 2020 Target			
5 Year Baseline GPCD	Maximum 2020 Target*	Calculated 2020 Target	Confirmed 2020 Target
126	120	91	91

*Maximum 2020 Target is 95% of the 5-year Baseline GPCD

The 2015 Interim Target is the value halfway between the 10-year Baseline and the Confirmed 2020 Target. The City's 2015 Interim Target of 102 GPCD is shown in SB X7-7 Table 8 below.

SB X7-7 Table 8 2015 Interim Target GPCD		
Confirmed 2020 Target	10 Year Baseline GPCD	2015 Interim Target GPCD
91	114	102



A summary of the City’s GPCD baseline and target is shown in Standard Table 5-1 below.

Standard Table 5-1 Baseline and Target Summary					
Baseline Period	Start Year	End Year	Average Baseline GPCD*	2015 Interim Target	Confirmed 2020 Target*
10-15 Year	2000	2009	114	102	91
5 Year	2005	2009	126		

*All Values are in Gallons per Capita per Day (GPCD)

5.7 2015 Compliance Daily Per Capita Water Use

Water suppliers must calculate their actual 2015 water use for the calendar year to determine whether they have met their per capita 2015 conservation target and to assess their progress towards meeting their 2020 target water use reduction goal.

In 2015, the City’s actual daily per capita water use was 83 GPCD. This is less than the 2015 interim target of 102 GPCD. The City exceeded its interim 2015 per capita water use target and is well on track to meet the confirmed 2020 target of 91 GPCD. SB X7-7 Table 9 below summarizes the City’s compliance with the 2015 per capita water use targeted reduction.

SB X7-7 Table 9 2015 Compliance								
2015 Actual GPCD	2015 Interim Target GPCD	Optional Adjustments to 2015 GPCD					Final 2015 GPCD	Did Supplier Achieve Targeted Reduction for 2015? Y/N
		Extraordinary Events	Economic Adjustments	Weather Normalization	Total Adjustments	Adjusted 2015 GPCD		
83	102	0	0	0	0	83	83	Yes

*All Values are in Gallons per Capita per Day (GPCD)

5.8 Regional Alliance

The City is not a member of a Regional Alliance.



CHAPTER 6: WATER SUPPLY SYSTEM

The UWMPA requires the City provide a description as well as a quantification of the current and projected sources of water available to the City. This chapter describes the City’s water source, wastewater collection and treatment, and future water system infrastructure improvements.

6.1 Purchase or Imported Water

The City does not currently purchase or import water, nor does it have any plans to do so. The City currently uses groundwater as its sole source of water supply.

6.2 Groundwater

The City of Greenfield obtains its municipal potable water supply from the Central Salinas Valley Groundwater Basin (SVGB) – Forebay Subarea. The City extracts its water supply from three (3) wells. Water is stored in two (2) water tanks.

The Forebay Subarea occupies the central portion of the Salinas Valley and extends from the town of Gonzales in the north to approximately three miles south of Greenfield (Figure 6-1). The Forebay Subarea is approximately 87,000 acres with a storage capacity of 5,720,000 acre-feet. Data from the Department of Water Resources identified in-ground storage of 4,530,000 acre-feet in 2003.

Infiltration in the Salinas River channel is the principal source of groundwater recharge for the SVGB. The recharge area is generally believed to end at a point between Chualar and the City of Salinas. Both natural runoff and conservation releases from the Nacimiento and San Antonio Reservoirs contribute to the flow in the Salinas River. Infiltration from smaller tributaries that drain the highland areas also provides recharge to the groundwater basin. The down-valley movement of this subsurface water is essential to the containment of saltwater intrusion into the Pressure Subarea. Higher elevations tend to have little potential for groundwater recharge due to both shallow or non-existent soils and steep slopes. Additional details of the SVGB is presented in DWR Groundwater Bulletin 118 (Appendix C).



Figure. 6-1 Salinas Valley Groundwater Basin



**Figure 6-1**
Groundwater Basins
2015 Urban Water Management Plan
City of Greenfield

Legend

-  Pressure
-  East Side
-  Forebay
-  Upper Valley



The Salinas Valley Groundwater Basin is divided into four major hydrologic subareas: Pressure, East Side, Forebay, and Upper Valley. The pumps all its water from the Forebay Subarea aquifer. This is an unadjudicated basin. All recharge efforts for this subarea are managed by the Monterey County Water Resources Agency (MCWRA).

MCWRA requires annual extraction reports from all agricultural and municipal well operators, and has researched, developed and/or constructed projects to reduce seawater intrusion, manage nitrate contamination in the groundwater, provide adequate water supplies to meet current and future needs, and balance the groundwater basin in the Salinas Valley. Figure 6-2 on the following page presents summary data from the 2015 Ground Water Extraction Report identifying extractions from the SVGB, the Forebay Subarea, and extractions by type of use and by city or area. The full report is presented in Appendix D.

The Sustainable Groundwater Management Act (SGMA) was signed on September 16, 2014 by Governor Brown. The SGMA is intended to “strengthen local management and monitoring of groundwater basins most critical to the state’s water needs” (Governor’s Office of Planning & Research). The City and Clark Colony Water Company have submitted application to Department of Water Resources to be a Groundwater Sustainability Agency (GSA) with authority and jurisdiction to undertake sustainable groundwater management for that portion of the Forebay Subarea that covers both the City limits and the Clark Colony service area. The GSA has received numerous petitions from adjoining landowners to include the petitioned lands in the management area of the GSA.

Groundwater consumption in the Salinas Valley has increased over time as the number of croplands under irrigation has continued to increase annually. Continued residential, commercial and industrial development has also increased groundwater consumption. Agriculture continues to dominate, representing 95% of the area’s water consumption. In some parts of the basin, although not the subarea that the City is in, agricultural and urban consumers are now using more water than is recharged annually, resulting in a groundwater overdraft. There is no overdrafting of the Forebay Subarea.

The City’s water system is owned and operated by the city of Greenfield. The City has three wells (Figure 6-3). Well #1 and Well #6 are located on 14th Street and Cherry Avenue northwest of the City. Well #1 was drilled in 1979 and has a capacity of 1000 gpm. Well #6 was drilled in 1998 and has a capacity of 1300 gpm. Well #7, located at the City’s corporation yard at 10th Street and Walnut Avenue, has a capacity of 1800 gpm. The three wells have a capacity to extract approximately 15 acre/feet per day or 5.1 MGD.



Figure 6-2 Monterey County Water Resource Agency 2015 Ground Water Extraction Report

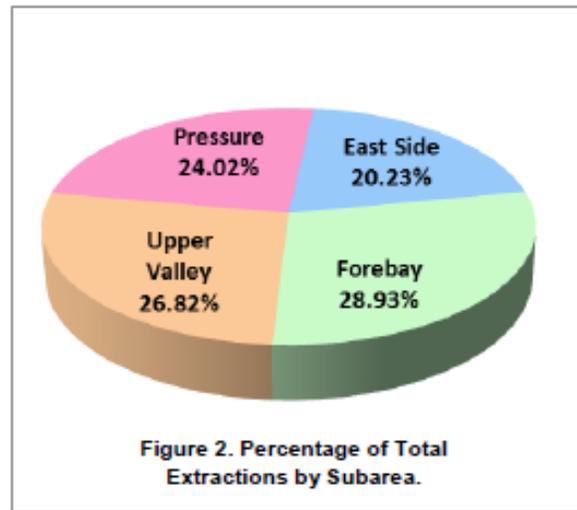
Groundwater Extraction Form – Data Summary

Total Extractions by Subarea and Type of Use

All data presented in this section are derived from the agricultural and urban Groundwater Extraction Forms.

Table 1. Extraction Data by Subarea and Type of Use.

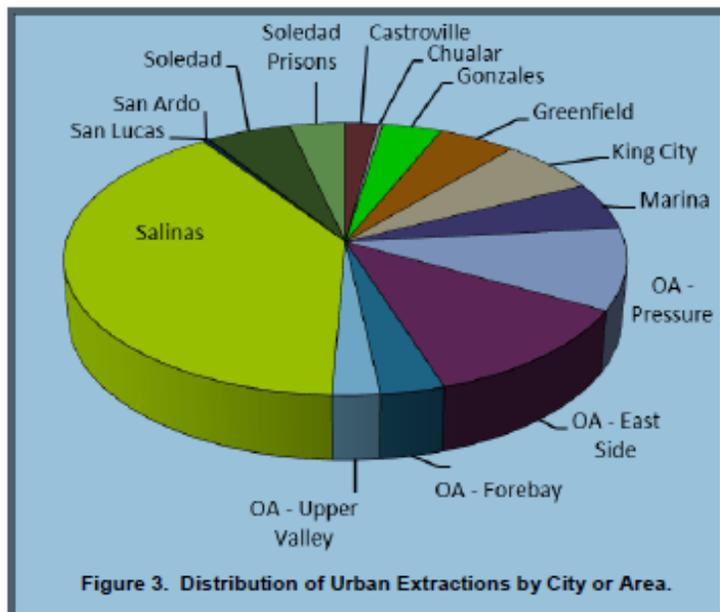
Subarea	Agricultural Pumping (AF)	Urban Pumping (AF)	Total Pumping (AF)
Pressure	109,214	14,443	123,657
East Side	91,491	12,631	104,122
Forebay	142,668	6,221	148,889
Upper Valley	134,740	3,306	138,046
Total (AF)	478,113	36,601	514,714
Percent of Total	92.89%	7.11%	100.00%



Urban Extraction Data by City or Area

The total groundwater extractions attributed to urban use include residential, commercial, institutional, industrial and governmental pumping, and are summarized below.

Table 2. Urban Extractions by City or Area

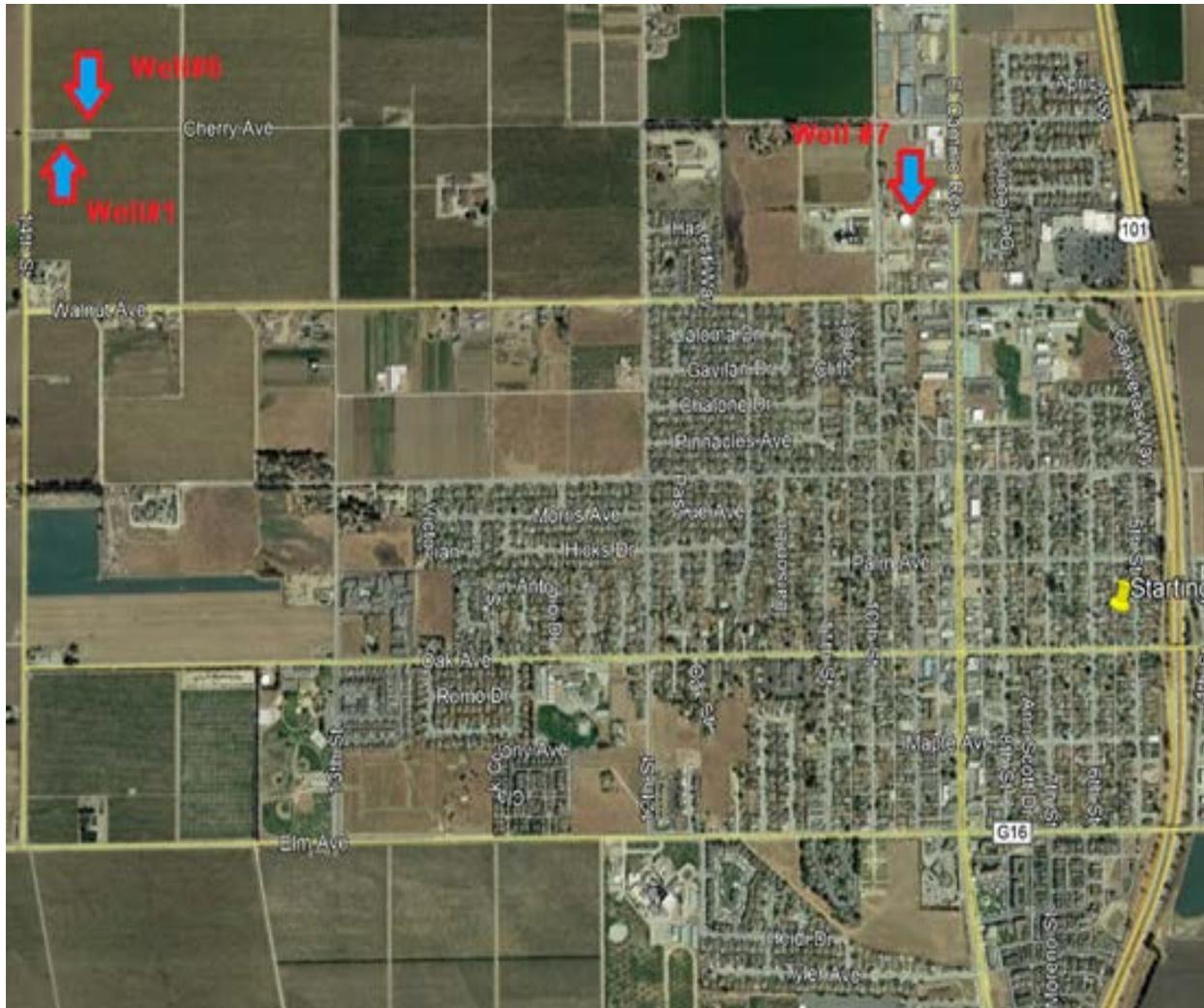


City or Area	Urban Pumping (AF)	Percentage
Castroville	771	2.12%
Chualar	115	0.31%
Gonzales	1,407	3.84%
Greenfield	1,842	5.03%
King City	2,354	6.43%
Marina	2,058	5.62%
OA - Pressure	3,548	9.69%
OA - East Side	4,360	11.91%
OA - Forebay	1,202	3.28%
OA - Upper Valley	891	2.43%
Salinas	14,568	39.80%
San Ardo	141	0.39%
San Lucas	26	0.07%
Soledad	1,991	5.45%
Soledad Prisons	1,330	3.63%
Total	36,602	100.00%

*OA=Other Area



Figure 6-3 Existing Groundwater Wells



	<p style="text-align: center;"> Forebay Existing Groundwater Wells Location 2015 Urban Water Management Plan City of Greenfield </p>	<p style="text-align: center;">Legend</p> <p style="text-align: center;"> Existing Wells </p>
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The City’s three active wells meet existing demands. The volume of groundwater pumped by the City over the past five years is summarized on Table 6-1. Historically, the Forebay Subarea has met the City’s water demands, even during times of drought. The Forebay Subarea will meet the City’s water demands in the future. The City’s 2015 extraction of 1,559 acre-feet comprised only



1% of the total Forebay groundwater extraction (see Figure 6-3). The City’s 2015 extraction represents less than 0.03% of the total actual in-ground storage capacity of the Forebay Subarea.

Table 6-1 Ground Water Pumping						
Groundwater Type	Location or Basin Name	Volume				
		2011	2012	2013	2014	2015
		(AF)	(AF)	(AF)	(AF)	(AF)
Alluvial Basin	Well #1 (14 th St. & Cherry Ave.)	521	474	321	374	372
	Well #6 (14 th St. & Cherry Ave.)	635	691	1442	717	598
	Well #7 (520 10 th St.)	693	739	203	703	589
Total		1,849	1,904	1,966	1,794	1,559

6.3 Surface Water

The City does not use any surface water as part of its water supply. All water is from subsurface groundwater from the Forebay Subarea aquifer.

6.4 Storm Water

The City does not use any storm water as part of its water supply. The City collects storm water in storm water percolation ponds located throughout the City. Water in the ponds percolates back into the groundwater subarea. This groundwater recharge is not included in the City’s supply calculations. Collected storm water is not currently diverted for beneficial reuse.

6.5 Wastewater and Recycled Water

The City is responsible for the collection, treatment, and disposal of wastewater within the UWMP service area. The City’s wastewater treatment facility (WWTP) is located near the eastern limit of the City. No recycled water distribution infrastructure exists between the City and the WWTP. To develop distribution piping from the WWTP to areas throughout the City is presently cost prohibitive. Additionally, there are no large-scale users that would benefit in proportion to the cost of installing a separate recycled water distribution system.

The City’s wastewater collection system is comprised of approximately thirty-one miles of gravity sewer pipes ranging in size from 4-inch to 24-inch in diameter, and six lift stations. The wastewater collection system spans over 2.1 square miles to serve the City’s 3,700 customers. Maintenance access to the wastewater collection system is provided by 535 manholes and clean outs. There are six sewer lift stations. Wastewater is collected by a gravity system that carries influent to the WWTP about 1.5 miles east of the City on Walnut Avenue near the Salinas River. The WWTP was reconstructed and completed in 1978. Recent plant improvements have



increased the capacity to 2 Million Gallons per Day (MGD). The City’s WWTP treated a total of 951 AF in 2015 (Table 6-2).

Table 6-2 Wastewater Collected Within Service Area in 2015						
Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated	Volume of Wastewater Collected from UWMP Service Area	Name of Wastewater Treatment Agency Receiving	Treatment Plant Name	Is WWTP Located within the UWMP Area?	Is WWTP Operation Contracted to a Third Party
City of Greenfield	Metered	951	City of Greenfield	WWTP	Yes	No
Total Wastewater Collected from Service		951				

Wastewater treatment and disposal is subject to the regulatory authority of the California Regional Water Quality Control Board, Central Coast Region, Waste Discharge Requirements Order No. R3-2002-0062. The current treatment facility is “Class II-Modified Treatment Pond.” Primary treatment is by means of three clarifiers with an aerobic digester. Sludge is drawn from the aerobic digester by gravity to two drying ponds. After drying, the bio-solids are properly disposed through the Salinas Valley Solid Waste Authority. Wastewater flowing through the digester is piped to three oxidation ponds. After treatment, the effluent is discharged to two percolation ponds and then to 13 acres of spray fields. Through the combination of oxidation ponds, percolation ponds, and spray fields, all wastewater percolates into the ground in a manner that protects the public health, maintains or enhances the existing groundwater quality, and does not create a visual or odor nuisance. No wastewater effluent is discharged to any of the adjacent surface waters. A summary of the wastewater treated and discharge by City of Greenfield is presented in Tables 6-2 and 6-3.

Table 6-3 Wastewater Treatment and Discharge within Service Area in 2015								
Wastewater Collection					Recipient of collected wastewater			
Wastewater Treatment Plant Name	Discharge Location Name and Description	Method of Disposal	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level	Wastewater Treated	Discharged Treated Wastewater	Recycle within Service Area	Recycled Outside of the Service Area
Greenfield Wastewater Treatment Plant	WWTP Sprayfield Area	Discharge to Land	Yes*	Secondary Lagoons	951	951	0	0
Total (AF)							0	0

* Wastewater currently accepted from Yanks RV Park located outside the City’s northern limits. This area is scheduled for annexation into the City.



DWR guidelines stipulate that incidental recharge from treated wastewater effluent disposal in percolation ponds is not counted as groundwater recharge or recycled water use. This UWMP does not include any such recharge as recycled water. Developing a recycled water system to capture the groundwater discharge to serve non-potable irrigation or industrial demands within the City’s service area will require upgrading the WWTP to tertiary treatment and constructing an extensive non-potable pipe network. Developing a recycled water program is not feasible at this time – it is cost prohibitive.

Table 6-4: Current and Projected Recycled Water Direct Beneficial Uses Within Service Area	
(X)	Recycled water is not used and is not planned for use within service area of the supplier.

Table 6-5 Wholesale: 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual	
(X)	Recycled water was not used or distributed by the supplier in 2010, nor projected for use or distribution in 2015. The supplier will not complete the table below

Table 6-6: Methods to Expand Future Recycled Water Use	
(X)	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.

6.6 Desalinated Water Opportunities

There are no opportunities for the development of desalinated water in the Greenfield area. Greenfield is in an inland valley located 40 miles from potential saline water sources.

6.7 Exchanges or Transfer

Greenfield is not pursuing any transfer or exchange agreements. Groundwater has been and will continue to be a reliable water source for the City. The City is not adjacent to any other water agencies and emergency interties are not possible.

6.8 Future Water Projects

The City’s 2016 Water Master Plan recommended construction of an additional groundwater supply well and water storage tank to meet future needs and to serve increased demand through natural growth and economic expansion. An additional well is also recommended to protect against system failure in the event one of the existing wells is out of service. The California Water Works Standards recommend the City maintain adequate production facilities to accommodate the future maximum daily demand (MDD) with the largest production well out of service. The City is planning on constructing a new potable well with a capacity of approximately 1,000 AFY to accommodate near term and future increases in demand (Table 6-7).



Table 6-7 Expected Future Water Supply Projects or Program					
Name of Future Projects or Programs	Joint Project with Other Agencies	Description	Planned Implementation	Planned for Use in Year Type	Expected Increase in Water Supply to Agency
Construction of Well # 8	No	Well Construction Consistent with City's 2016 Water Master Plan Recommendations	2020	All Year Type	1,590 AF

6.9 Summary of Existing and Planned Sources of Water

The City's existing groundwater supply source has historically been adequate to meet the City's demands. Table 6-8 summarizes the total water pumped in 2015. In the coming years with new development, a new well will be constructed to meet future demands and protect against system failure. The City will continue to use groundwater as the sole source for its water supply. Table 6-9 summarizes data from DWR and the Monterey County Water Resources Agency. The total storage capacity of the Forebay Subarea aquifer is 5,720,000 AF. As of 2003, there was an estimated 4,530,000 AF of stored groundwater in the Forebay Subarea.

Table 6-8: Water Supplies – Actual					
Water Supply	Additional Detail on Water Supply		2015		
			Actual Volume	Water Quality	Total Right or Safe Yield (optional)
Groundwater	Deep Aquifer (potable)		1,559	Drinking water	
Total (AF)			1,559		

Table 6-9 Water Supplies – Projected				
Water Supply Sourced	Projected Water Supply			
	2020 (AF)	2025 (AF)	2030 (AF)	2035 (AF)
Groundwater	4,530,000	4,530,000	4,530,000	4,530,000

Figures from MCWRA water model. In 2015, from the Forebay Subarea, agricultural pumping was 142,668 AF and urban pumping was 6,221 AF. Forebay Subarea storage capacity is 5,720,000 AF.



CHAPTER 7: WATER SUPPLY RELIABILITY

Water supply reliability addresses the capability of the water supply during emergency events in normal existing conditions, single dry years and multiple dry years. Supply reliability must also be projected out for 20 years.

7.1 Constraints on Water Sources

The City’s only source of water is groundwater. The City is committed to providing the community a safe, reliable supply of excellent quality drinking water that meets or exceeds federal and state regulations and safe drinking water standards. In 2015, the City met or exceeded every applicable water quality standard. The City’s Water System Emergency Response Plan (ERP) discussed the potential for disruption of the City’s water supply from contamination, earthquakes, or acts of terrorism. Only a natural disaster or mechanical system failure can impact the City’s access to a reliable water supply. The Emergency Response Plan is included in Appendix J.

7.2 Reliability by Type of Year

This section discusses the type of years considered when evaluating water supply reliability. The conditions are as follows:

- **Average Water Year** – A term denoting the average annual hydrologic conditions based upon an extended or existing period of record.
- **Single Dry Year** – The individual year with the lowest usable water supply.
- **Multiple Dry Years** – Multiple dry years are defined as the three consecutive years with the lowest usable water supply.

Table 7-1 Bases of water Year Data			
Year Type	Base Year	Volume Available ¹	Percent of Available
Average Year	2002	4,530,000 AF	100%
Single –Dry Year	2013	4,530,000 AF	100%
Multiple-Dry Year 1 st Year	2013	4,530,000 AF	100%
Multiple- Dry year 2 nd year	2014	4,530,000 AF	100%
Multiple –Dry year 3 rd Year	2015	4,530,000 AF	100%

¹ In-ground groundwater storage of Forebay Subarea aquifer. This is the City’s exclusive water source.



7.3 Supply and Demand Assessment

A more accurate way to analyze the water available to the City in any given year is to estimate the safe yield of the aquifer. The Salinas Valley Groundwater Basin (SVGB) is a regional resource that serves the majority of Monterey County. Annual usage varies with rainfall, but over the last decade groundwater use has ranged from 440,000 AFY to 527,000 AFY. Pumping from the Forebay Subarea accounts for only 29% of the total groundwater use from the SVGB. Agricultural irrigation accounts for 93% of SVGB water use, and 95% of the water use within the Forebay Subarea. Urban use accounts for the remaining 5% to 7% of total water use.

Although a sustainable yield has not been estimated for the Forebay Subarea aquifer, this UWMP assumes an average usage rate of 149,000 acre-feet per year from all users – commercial, agricultural, and urban. Given the Forebay Subarea aquifer storage capacity of 5,720,000 AF, the 2003 estimated in-ground ground water storage of 4,530,000 AF, and the relative lack of impact that drought conditions have on water availability within the Forebay Subarea aquifer, the total historical and projected water use from the Forebay Subarea aquifer is only a small percentage of the actual groundwater storage – approximately 3%. The City’s annual water extraction from this aquifer is only 0.03% of the actual groundwater storage. As evident from Tables 7-2, 7-3, and 7-4 below, the City’s projected water demand during the periods of normal, dry, and multiple dry years is only a small fraction of the amount of water actually available within the Forebay Subarea aquifer during any year, regardless of rainfall or drought conditions.

Table 7-2 Normal Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040
Supply Total (AF)	4,530,000	4,530,000	4,530,000	4,530,000	4,530,000
Demand Totals (AF)	1,588	1,855	1,964	2,073	2,281
Difference	4,528,412	4,528,145	4,528,036	4,527,927	4,527,719

Table 7-3 Single Dry Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040
Supply Total (AF)	4,530,000	4,530,000	4,530,000	4,530,000	4,530,000
Demand Totals (AF)	1,588	1,855	1,964	2,073	2,281
Difference	4,528,412	4,528,145	4,528,036	4,527,927	4,527,719

Table 7-4 Multiple Dry Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040
Supply Total (AF)	4,530,000	4,530,000	4,530,000	4,530,000	4,530,000
Demand Totals (AF)	1,588	1,855	1,964	2,073	2,281
Difference	4,528,412	4,528,145	4,528,036	4,527,927	4,527,719



7.4 Regional Supply Reliability

As discussed previously, the City uses groundwater as its sole source of supply and no known opportunities currently exist to diversifying sources of supply. To reduce the burden on groundwater resources during periods of prolonged drought, the City has a water conservation ordinance and water shortage contingency plan that can be implemented to prevent and prohibit the wasting of water, while also encouraging the community to conserve. See Appendix E (contingency plan) and Appendix F (ordinance).



CHAPTER 8: WATER SHORTAGE CONTINGENCY PLANNING

This chapter describes the City’s plans for water supply shortage or catastrophic supply interruptions. The City has a reliable supply of source water and is not vulnerable to reductions in deliveries due to the storage capabilities of its groundwater basin. The water shortage contingency plan presented in this chapter was developed in compliance with the requirements of California Water Code Section 10632.

8.1 Stages of Action

This Plan describes actions the City will initiate in the event of a catastrophic reduction in its water supply. The City has adopted a five-stage water conservation plan that includes two voluntary and three mandatory stages. The City’s Water Shortage Contingency Plan, adopted in 2014, is included in Appendix E. Table 8-1 summarizes the various stages. Specific water reduction mechanisms applicable to each stage are discussed in the next section.

Stage	Percent Supply Reduction	Water Supply Condition
1	0%-10% reduction voluntary	Water shortage alert
2	10%-15% reduction voluntary	Water shortage warning
3	25%-35% reduction mandatory	Emergency Water shortage
4	35%-50% reduction mandatory	Sever water shortage emergency
5	50%+ reduction mandatory	Critical water shortage emergency

8.2 Prohibitions on End Uses

The City has a mandatory water conservation ordinance that prohibits water waste and promotes water conservation. Section 13.09.040 of the ordinance specifies mandatory restrictions on water waste that are always in force. The adopted Water Shortage Contingency Plan sets forth additional water use reduction mechanisms the City can adopt to comply with use reductions during the more restrictive stages of water shortages, including the following:

1. Elimination of turf irrigation with potable supplies;
2. Restriction of landscape watering to shrubs and trees by hand or drip irrigation only;
3. Elimination of vehicle washing except in car washes that have recirculation systems;
4. Prohibition on filling or topping-off swimming pools where damage to pumping equipment will not result;
5. Elimination of water served in food service establishments unless requested;
6. Elimination of the issuance of construction meters;
7. Shut-off of dedicated landscape irrigation meters; and
8. Moratorium on provision of new supply meters.



Stage 1: Up to 10% – Voluntary – Water Shortage Alert Conservation

The City shall:

- Voluntary water conservation requested of all customers to adhere to Chapter 13.09 Mandatory Water Conservation Regulations of the Municipal Code
- Landscape irrigation restricted to early morning and evening
- Non-essential water uses banned
- Shutoff nozzles on all hoses used for any purpose
- Encourage conversion to drip, low volume irrigation
- Notify all customers of the water shortage
- Provide technical information to customers on ways to improve water use efficiency
- Campaign to remind consumers of the need to save water are to restrict all landscape irrigation to certain hours of the day and to prohibit various uses deemed to be non-essential.

Stage 2: 10% to 25% – Voluntary – Water Shortage Warning Conservation

In addition to the actions listed in stage 1, the City shall call for voluntary reductions of up to 25% for each connection based on the average use during a base period proposed by the Utilities Division and adopted by the City Council.

- Involves expanding mandatory water restrictions and limiting landscape irrigation to specified days and times
- Large landscape users would be required to adhere to water budgets
- Intensify public information campaign
- Send direct notices to all customers
- Optimize existing water sources
- Intensify system leak detection and repair
- Increase water waste patrol
- Continue all stage 1 measures
- Landscape irrigation restricted to designated watering days and times
- Require large landscapes to adhere to water budgets
- Prohibit exterior washing of structures
- Require large users to audit premises and repair leaks

Stage 3: 25% to 35% – Mandatory – Emergency Water Shortage Conservation

Stage 3 water shortage constitutes an emergency. Conservation measures may be called for as a result of malfunction of all or portions of the water system that reduces supplies by greater than



25% on a daily, peak seasonal or annual basis. It also may be called due to prolonged drought conditions and a need to focus public attention on water conservation methods.

In addition to the actions listed in stages 1 and 2, the City shall establish mandatory annual allotments for each connection based on the average use during a base period proposed by the Utilities Division and adopted by the City Council. When stage 3 use reductions become necessary, administration and enforcement of water conservation rules becomes a major focus of the Utilities Division. If necessary, additional temporary personnel may be hired and special meetings of the Utilities Division and/or City Council may be scheduled.

Stage 4: 35% to 50% – Mandatory – Severe Water Shortage Emergency

Stage 4 conservation measures may be called for as a result of malfunction of all or portions of the water system that reduces supplies by greater than 35% on a daily, peak seasonal or annual basis. It also may be called due to prolonged drought conditions and a need to focus public attention on water conservation.

Stage 5: >50% – Mandatory – Critical Water Shortage Emergency

Appropriate 50% water shortage allotments shall be calculated and notice made to all customers. Appropriate administration and enforcement of this stringent program shall be the highest priority of the Utilities Division activity. All resources of the Utilities Division will be directed toward improvements to and increase of the water supply to the system. Water rates may be further increased by the City Council.

Table 8-2 below details the restrictions and prohibitions included in each stage of the City’s Water Shortage Contingency Plan. The full plan is presented in Appendix E.

Table 8-2: Restrictions and Prohibitions on End User			
Stage	Restrictions and Prohibitions on End Users Category	Additional Explanation or Reference	Penalty, Charges or Other Enforcement
1	Landscape irrigation restricted to early morning and evening		Yes
1	Non-essential water uses		Yes



Table 8-2: Restrictions and Prohibitions on End User			
Stage	Restrictions and Prohibitions on End Users Category	Additional Explanation or Reference	Penalty, Charges or Other Enforcement
1	Shutoff nozzles on all hoses used for		Yes
1	Encourage conversion to drip, low		Yes
2	Large landscape users would be required to adhere to		Yes
2	Intensify system leak detection and repair		Yes
2	Landscape irrigation restricted to designated watering days and times		Yes
3	Landscaping irrigation for existing landscapes, including public parks	<p>Landscape watering with potable water shall be subject to the following limits:</p> <p>1) Landscape watering using sprinkler or irrigation systems is permitted only two days per week. Addresses ending in even numbers (0, 2, 4, 6, 8,) may water on Mondays and Thursdays. Addresses ending in odd numbers (1, 3, 5, 7, and 9) may water on Tuesdays and Fridays. If there is no street address, or if more than one street address is associated with a contiguous property, the irrigation days are Wednesday and Saturday.</p> <p>2) Manual landscape watering with a soaker hose, handheld hose or watering can/bucket is allowed on any day.</p>	Yes



Table 8-2: Restrictions and Prohibitions on End User			
Stage	Restrictions and Prohibitions on End Users Category	Additional Explanation or Reference	Penalty, Charges or Other Enforcement
3	Golf courses, athletic fields	Landscape watering with potable water shall be subject to the following limits: 1) All landscape out-of-play areas such as may be found around a clubhouse or entryway shall follow the general landscape irrigation restrictions. 2) All in-play areas may be irrigated during the standard watering hours (before 10:00 a.m. or after 5:00 p.m.). 3) Course operators shall implement a ten (10) percent reduction in irrigation water use.	Yes
3	Hotels, motels and bed and breakfasts	Hotels, motels and B&B's must offer and clearly notify guests of a "limited linen/towel exchange" program.	Yes
3	Swimming pools, hot tubs	Initially filling new and existing swimming pools prohibited. Draining and refilling existing swimming pools permitted only if repairing a pool leak or repairing, maintaining or replacing a pool component that has become hazardous. All pools and tubs shall be covered when not in use to reduce evaporation.	Yes
3	Industrial and commercial	Non-commercial washing of vehicles and mobile equipment (e.g., washing a vehicle at a residence) is permitted only on assigned landscape watering days during landscape watering hours (before 10:00 a.m. or after 5:00 p.m.). Fleet managers are encouraged to only wash those vehicles as is necessary for health and safety.	Yes
3	Heavy construction	The use of potable water for dust control shall be reduced to the greatest extent possible.	Yes
4	Golf courses, athletic fields	Landscape watering with potable water shall be subject to the following limits: 1) All landscape out-of-play areas such as may be found around a clubhouse or entryway shall follow the general landscape irrigation restrictions. 2) All in-play areas may be irrigated during the standard watering hours (before 10:00 a.m. or after 5:00 p.m.). Course operators shall implement a twenty (20) percent reduction in irrigation water use.	Yes
4	Hotels, motels and bed and breakfasts	Hotels, motels and B&B's must limit linen/towel exchange to once every two (2) nights or for the entire stay, whichever is shorter, except for health and safety program.	Yes



Table 8-2: Restrictions and Prohibitions on End User			
Stage	Restrictions and Prohibitions on End Users Category	Additional Explanation or Reference	Penalty, Charges or Other Enforcement
4	Swimming pools, hot tubs	Initially filling new and existing swimming pools prohibited. Draining and refilling existing swimming pools permitted only if repairing a pool leak or repairing, maintaining or replacing a pool component that has become hazardous. All pools and tubs shall be covered when not in use to reduce evaporation.	Yes
4	Vehicle and equipment washing	Non-commercial washing of vehicles and mobile equipment (e.g., washing a vehicle at a residence) is permitted only on assigned landscape watering days during landscape watering hours (before 10:00 a.m. or after 5:00 p.m.).	Yes
4	Industrial and commercial	Compliance with mandatory demand reduction measures is required for outdoor water uses including landscape irrigation, swimming pools, and vehicle washing.	Yes
4	Heavy construction	The use of potable water for dust control shall be reduced to the greatest extent possible.	Yes
5	Landscape irrigation for existing landscapes, incl. public parks	Landscape watering with potable water is prohibited	Yes
5	Landscape irrigation for new landscapes, incl. public parks	New landscapes installed prior to declaration of Conservation Stage 5 may water two (2) days a week to maintain adequate growth on newly installed landscapes, for the remainder of the initial five (5) week establishment period. Watering days for new landscapes are Tuesday and Friday. Property owners must notify the City of the address where new landscape is installed and the date of installation.	Yes



Table 8-2: Restrictions and Prohibitions on End User			
Stage	Restrictions and Prohibitions on End Users Category	Additional Explanation or Reference	Penalty, Charges or Other Enforcement
5	Golf courses, athletic fields	Landscape watering with recycled water may continue without restriction. Landscape watering with potable water shall be subject to the following limits: 1) All landscape out-of-play areas such as may be found around a clubhouse or entryway shall follow the general landscape irrigation restrictions. 2) All in-play areas may be irrigated during the standard watering hours (before 10:00 a.m. or after 5:00 p.m.). Course operators shall implement a thirty (30) percent reduction in irrigation water use.	Yes
5	Hotels, motels and bed and breakfasts	Hotels, motels and B&B's must limit linen/towel exchange to once every three (3) nights or for the entire stay, whichever is shorter, except for health and safety program.	Yes
5	Vehicle and equipment washing	Non-commercial washing of vehicles and mobile equipment is prohibited. Only commercial facilities with water recycling systems may be used.	Yes
5	Industrial and commercial	Compliance with mandatory demand reduction measures is required for outdoor water uses including landscape irrigation, swimming pools, and vehicle washing. Use of water from fire hydrants is prohibited, except by city and/or fire personnel.	Yes
5	Heavy construction	The use of potable water for dust control shall be reduced to the greatest extent possible. The City may establish mandatory construction water budgets, if needed.	Yes

8.3 Penalties, Charges, and Other Enforcement of Prohibitions

Section 13.09.050 of the municipal code provides for a system warnings and notices of violations. Violation of water waste provisions of the municipal code and the Water Shortage Contingency Plan are enforced under section 13.09.060 of the municipal code, which provides that:

- A. Each violation is an infraction.
- B. Any violation that occurs or continues from one day to the next is a separate violation, for each day during which such violation occurs or continues to occur.



- C. The fine for a first violation is \$50. The fine for a second violation and each subsequent violation within a period of 12 months is \$100.

8.4 Consumption Reduction Methods

The prohibitions described in section 8.2 above are limitations imposed by the City on specific uses of water by its customers. In addition to those restrictions, the City has a number of consumption reduction methods it can and has taken to reduce water demand within its service area. These can be undertaken at any stage of the Water Shortage Contingency Plan. The consumption reduction programs and mechanisms implemented by the City are presented in Table 8-3 below.

Table 8-3 Stages of Water Shortage Contingency Plan – Consumption Reduction Methods		
Stage	Consumption Reduction Methods by Water Supplier	Additional Explanation or Reference
Any	Expand public information campaign	Press releases, inserts to monthly utility bills
Any	Provide rebates on plumbing fixtures and devices	On-going program; Includes clothes washers, dishwashers, toilets, and hot water recirculating pump rebates; for single and multi-family residential customers; maximum of \$150 rebate for each fixture type
Any	Provide rebates for turf replacement	On-going program \$1.00 per square foot rebate, up to \$1,000 for single family residential customers, for replacement of high water using lawns with water-efficient landscaping
Any	Decrease line flushing	Not currently in effect: System operation and maintenance efficiencies by Utilities
Any	Reduce system water loss	Completed: City has installed new water meters throughout the service area to improve meter reading accuracy
4 and 5	Moratorium or net zero demand increase on new connections	Not currently in effect: City Council may impose moratorium on installation of new meters, including construction meters
Any	Implement or modify drought rate structure or surcharge	Not currently in effect: In June 2015, City Council imposed a water consumption surcharge for all residential, school, trailer park, irrigation and landscape, and park customers; surcharge ranged from 100% on low water users to 400% for the largest water users; surcharge suspended by City Council in March 2017



8.5 Determining Water Shortage Reductions

During normal water supply conditions, production figures are recorded daily by Water Utility personnel. Totals are reported monthly to the Utility Manager. Production figures are reported in the Annual Report to the Drinking Water Program, which is submitted to California Department of Public Health each year.

During a stage 1 or 2 water shortage, daily production figures are reported to the Utility Manager. The Utility Manager compares the weekly production to the target weekly production to verify that the reduction goal is being met. Monthly reports are forwarded to the Community Services Director, The City Manager and the City Council. If reduction goals are not met, the City Manager may notify the City Council so that corrective action can be taken.

During a stage 3 or 4 water shortage, the procedure listed above is followed, with the addition of a daily production report to the Community Services Director and weekly reports to the City Manager and City Council. Special meetings may be called for administration of the Water Shortage Contingency Plan.

During a Stage 5 shortage, production figures are reported to the Utility Manager hourly, and to the Community Services Director and the City Manager daily. Reports are also provided to the City Council and the Monterey County Office of Emergency Services,

8.6 Revenue and Expenditure Impacts

Most water supply utility costs are fixed operating costs rather than variable based on the quantity of water sold. As a result, when conservation programs are implemented, a reduction in revenue results due to decreased water sales. In 2016 the City adopted a new water rate schedule that took into account the effectiveness of water conservation programs and the impact reduced water sales will have on revenues. The study on which the new rate structure was based is available at <http://ci.greenfield.ca.us/documentcenter/view/87>. The adopted rate schedule is presented in Appendix G.

The City's water rate structure includes a fixed monthly charge based on meter size. A different fixed monthly charge is applied for private fire service meters. For single-family residential customers, there is a three-tiered rate structure, with differing rates for 0-8,000 GPM, 8,001-15,000 GPM, and 15,001 GPM and greater. For multi-family, commercial, institutional, industrial, irrigation, landscape, and agricultural customers, there is a single rate for each user type based on actual consumption. The rate structure in effect as of August 1, 2016 is presented in Table 8-4 on the following page. The rate structure includes annual escalations through June 30, 2021.



Table 8-4 City of Greenfield Water Rates (August 1, 2016)		
Tiered Consumptive Rates (Single Family Residential)		
Tier	Threshold (Gallons)	Rate (\$ per Thousand Gallons)
Tier 1	0-8,000	\$1.17
Tier 2	8,001-15,000	\$1.75
Tier 3	>15,000	\$3.35
Uniform Consumptive Rates		
Customer Class	Rate (\$ per Thousand Gallons)	
Multi-Family Residential	\$1.73	
Commercial/Institutional	\$1.68	
Industrial	\$1.65	
Irrigation/Landscape/Agriculture	\$2.38	

In 2015, the City Council adopted a temporary water consumption surcharge on all residential customers (both single family and multi-family), schools, trailer parks, and irrigation and landscape customers. The surcharge was effective from June 2015 through February 2016. During the period the surcharge was in effect, total water consumption was reduced by 27% from the same period in 2013. Since the surcharge was suspended, the City’s overall water consumption reduction from the same months in 2013 has been 17%.

Table 8-5 City of Greenfield Water Surcharge (June 2015 – February 2016)		
Usage (Gallons)	Surcharge	Cost per 1000 Gallons
0 to 5,000	100%	\$0.74
5,001 to 10,000	125%	\$1.50
10,001 to 15,000	150%	\$2.25
15,001 to 20,000	200%	\$3.52
20,001 to 25,000	300%	\$5.55
25,001 and up	400%	\$11.08

8.7 Resolution or Ordinance

The Water Shortage Contingency Plan for the City was adopted by the City Council on July 22, 2014, by Resolution 2014-50. That plan, and the adopting resolution, is included in Appendix E.

8.8 Catastrophic Supply Interruption

The City has adopted a Water System Emergency Response Plan and specific action plans for catastrophic water supply interruptions, including those caused by contamination, structural damage from explosive device, power outage, and natural events (flood, winter storm, earthquake). The Emergency Response Plan is included in Appendix J.



8.9 Minimum Supply Next Three Years

As previously discussed, the City draws all its water supply from the Forebay Subarea aquifer. This is the City's sole source. The estimate in-ground groundwater storage of the aquifer is identified in Table 8-6.

Table 8-6 Minimum Supply Next Three Years			
	2016	2017	2018
Available Water Supply	4,530,000 AF	4,530,000 AF	4,530,000 AF



CHAPTER 9: DEMAND MANAGEMENT MEASURES

This chapter describes the Demand Management Measures (DMMs) utilized by the City. A DMM is a program designed to maximize the efficient use of water resources and minimize water waste.

9.1 Waste Water Prevention Ordinance

In 1950 the City adopted section 13.12.030 of the municipal code that simply stated: “no consumer shall knowingly permit leaks or waste of water.” In 1995 the City adopted a comprehensive mandatory water conservation ordinance, chapter 13.09 of the municipal code. This ordinance is in place at all times and is not dependent upon a water shortage for implementation. A copy of the ordinance is included in Appendix F. In 2014 the City supplemented the mandatory prohibitions of the ordinance with the adoption of the Water Shortage Contingency Plan. This plan was summarized in section 8.2 above and is included in Appendix E.

On April 1, 2015, California Governor Jerry Brown issued an emergency water conservation order requiring a statewide conservation of 25%. The City’s in-place water conservation ordinance and contingency plan provides the City with the tools necessary to restrict and enforce water waste during emergency water shortages and future droughts.

9.2 Metering

All residential and commercial connections to the City’s water distribution system are required to be metered. The meters record the volume of water use. Most fire protection backflows also contain a water meter to record any leaks in the fire system. In 2016, the City started a major program to replace all meters with new state-of-the-art Badger meters and Itron automatic meter reading (AMR) software. Meters are read on a monthly basis with this automated meter reading and recording software. The software enables the City to monitor real-time water use at any meter. The system also has the capability of allowing customers to monitor their water use on a real-time basis. Under this meter replacement program, the City also installed meters at all City parks and landscape areas that were not previously metered.

9.3 Conservation Pricing

All City water service connections are charged monthly for the volume of water used. In 2016, the City Council adopted a new rate structure, which includes annual escalators through June 2021. The City’s water rate schedule was described in section 8.6 above and is included in Appendix G. For single-family residential customers, there is a tiered rate structure: 0-8,000 GPM, 8,001-15,000 GPM, and 15,001 GPM and greater. The variable per gallon charge increases with



each tier. All other customers are charged a uniform per gallon rate, with different rate structures for various types of water users, i.e., multi-family residential, commercial/institutional, industrial, or irrigation/landscape/agriculture.

In 2015, the City adopted a temporary water rate surcharge. This was described in section 8.6 above. Although not current in effect, the City can re-implement this surcharge program in the future if necessary to enhance continued water conservation efforts and to ensure the City meets all mandated water reduction goals and targets.

9.4 Public Education, Outreach, and Incentive Programs

The City has multiple programs in place to reduce water consumption by raising public awareness of water conservation. These programs include rebates, communication with customers through monthly utility billing inserts, school education programs, newspaper articles and press releases, and information items on the City's website. The City is also a member of the Water Awareness Committee of Monterey County (WAC).

Rebates: Rebates are available to customers who replace older plumbing fixtures with water conserving new fixtures. Rebates up to \$150 for each fixture type are available for clothes washers, dishwashers, toilets, and hot water recirculating pumps. These rebates are available to single family and multi-family residential customers. The City also has a turf replacement rebate program for single family residential customers for the replacement of high water using lawns with water-efficient landscaping. The rebate is \$1.00 per square foot up to a maximum of \$1,000 per residential customer. The City also provides free showerheads and aerators through the City's Residential Water Audits program.

Utility Bill Inserts: The City utilizes its monthly utility billings to communicate with customers regarding continuing water conservation efforts and new and continuing programs.

School Education: Through membership in WAC, the City has access to ZunZun, a performing arts group that celebrates the environment and culture of the Americas through music. ZunZun is best known for their work with performance programs about environmental protection, specifically about water issues. Utility Department staff are also available to public schools within the service area, upon request, to provide informational presentations to raise water conservation methods and ideology among the youth of the community.

City Website: The City has links on its website to the water fixture and turf replacement rebate programs. The UWMP, Water Shortage Contingency Plan, Water Master Plan, water ordinance, and other water and water conservation documents are available on the City's website.



Other: As appropriate, the City issues press releases and newspaper articles to heighten public awareness of water conservation, the City's programs, and new State regulations.

9.5 Programs to Assess and Manage Distribution System Real Loss

All water entering the distribution system is metered. The City's new meters will enable the City to better account for usage and water waste. During fire hydrant flushing, the City meters this activity to ensure all water usage is accounted for. The City compares well production and water usage data to identify any water loss. Unaccounted water can be an indication of leaks, water system repairs, or the use of water during a fire emergency.

The Public Works Department is responsible for handling and scheduling all water system audits and repairs. Leaks within the system are immediately fixed upon detection. The City keeps a record of all repaired leaks in the Public Works Department.

9.6 Water Conservation Program Coordination and Staffing Support.

The Public Works Department is responsible for coordinating all water conservation efforts. The City has designated the Public Works Operations Manager as the Water Conservation Coordinator. The Operations Manager is currently Arturo "Felix" Felix. Mr. Felix is responsible for establishing and overseeing water conservation programs and maintaining communication with City residents about water conservation practices.

9.7 Other Demand Management Measures - Landscape Water Audits

The City plans to develop a large landscape water auditing and incentive program that will allow the City to survey and characterize the irrigation practices of large landscape customers, defined as three acres or greater. This program is still in the development stage.



CHAPTER 10: PLAN ADOPTION, SUBMITTAL, AND IMPLEMENTATION

This chapter describes the process undertaken for adoption and submittal of the UWMP as well as the plan required to implement the UWMP. Ways in which the public can access the UWMP are also described in this section.

10.1 Inclusion of All 2015 Data

The City’s 2015 UWMP is prepared on a calendar year basis. All data in this Plan was updated through December of 2015.

10.2 Notice of Public Hearing

The City provided notice to relevant stakeholders, summarized in Table 10-1, on November 1, 2017. This notification date was more than the required 60 days prior to the public hearing on the 2015 UWMP.

Table 10-1 Notification of Cities and Countries		
City or County Name	60 Day Notice	Notice of Public Hearing
City of King City	(X)	(X)
City of Soledad	(X)	(X)
Monterey County	(X)	(X)

As required by Government Code 6066, the City notified the public of the UWMP preparation via a newspaper announcement, utility bill insert, and online posting. The public notice published in the local newspaper included the time and place of the public hearing and the location where copies of the draft UWMP could be obtained. The draft UWMP was available on the City’s website and at City Hall. Copies of the required notices are presented in Appendix H.

10.3 Public Hearing and Adoption

Following the notification of all relevant stakeholders and publication of notice in the local newspaper, the City held a public hearing on March 27, 2018 to receive public comments, review the draft UWMP, approve the UWMP implantation program and water use target, and adopt the 2015 UWMP. The 2015 UWMP was adopted by the City Council on March 27, 2018 (Resolution 2018-26). A copy of the adopting resolution is included in Appendix I.

10.4 Plan Submittal

The UWMP will be submitted to DWR electronically through DWR’s online submittal tool WUEdata within 30-days of its adoption by the City Council. The UWMP, including the Water



Shortage Contingency Plan, will also be submitted to the California State Library, Government Publications Section, and the County of Monterey.

10.5 Public Availability

The 2015 UWMP is available to the public in the office of the City Clerk at City Hall, located at 599 El Camino Real, Greenfield, CA 93927. The 2015 UWMP is also available for public viewing on the City's website: <http://ci.greenfield.ca.us/>.

10.6 Amending an Adopted UWMP

Any amendments to the adopted 2015 UWMP will be adopted and filed in the manner set forth in Water Code section 10640 *et seq.* This includes requirements for notification, public hearing, adoption, and submittal to DWR and other agencies.



CHAPTER 11: DWR CHECKLIST

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location (Optional)
10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Plan Preparation	Section 2.1	Sec. 2.1
10620(d)(2)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan Preparation	Section 2.5.2	Sec. 2.5
10642	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	Plan Preparation	Section 2.5.2	Sec. 2.5, App. H
10631(a)	Describe the water supplier service area.	System Description	Section 3.1	Sec. 3.1
10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3	Sec. 3.3
10631(a)	Provide population projections for 2020, 2025, 2030, and 2035.	System Description	Section 3.4	Sec. 3.4
10631(a)	Describe other demographic factors affecting the supplier's water management planning.	System Description	Section 3.4	N/A
10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Sections 3.4 and 5.4	Sec. 3.4, Sec. 5.3
10631(e)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.2	Sec. 4.2
10631(e)(3)(A)	Report the distribution system water loss for the most recent 12-month period available.	System Water Use	Section 4.3	Sec. 4.3
10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4.5	Sec. 4.5
10608.20(b)	Retail suppliers shall adopt a 2020 water use target using one of four methods.	Baselines and Targets	Section 5.7 and App E	Sec. 5.6



CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location (Optional)
10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	Baselines and Targets	Chapter 5 and App E	Chapter 5
10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5-year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.7.2	Sec. 5.6
10608.24(a)	Retail suppliers shall meet their interim target by December 31, 2015.	Baselines and Targets	Section 5.8 and App E	Sec. 5.7
10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	Section 5.8.2	N/A
10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	Section 5.1	N/A
10608.40	Retail suppliers shall report on their progress in meeting their water use targets. The data shall be reported using a standardized form.	Baselines and Targets	Section 5.8 and App E	Sec. 5.7
10631(b)	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, 2030, and 2035.	System Supplies	Chapter 6	Sec. 6.2
10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2	Sec. 6.2
10631(b)(1)	Indicate whether a groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System Supplies	Section 6.2.2	Sec. 6.2
10631(b)(2)	Describe the groundwater basin.	System Supplies	Section 6.2.1	Sec. 6.2
10631(b)(2)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	Section 6.2.2	Sec. 6.2



CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location (Optional)
10631(b)(2)	For unadjudicated basins, indicate whether or not the department has identified the basin as overdrafted, or projected to become overdrafted. Describe efforts by the supplier to eliminate the long-term overdraft condition.	System Supplies	Section 6.2.3	Sec. 6.2
10631(b)(3)	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years	System Supplies	Section 6.2.4	Sec. 6.2
10631(b)(4)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Sections 6.2 and 6.9	Sec. 6.2
10631(d)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.7	Sec. 6.7
10631(g)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years.	System Supplies	Section 6.8	Sec. 6.8
10631(h)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6	Sec. 6.6
10631(j)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) – if any - with water use projections from that source.	System Supplies	Section 2.5.1	N/A
10631(j)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	Section 2.5.1	N/A
10633	For wastewater and recycled water, coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.1	Sec. 6.5
10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area. Include quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	System Supplies (Recycled Water)	Section 6.5.2	Sec. 6.5



CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location (Optional)
10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System Supplies (Recycled Water)	Section 6.5.2.2	N/A
10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.3 and 6.5.4	N/A
10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 6.5.4	N/A
10633(e)	Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.	System Supplies (Recycled Water)	Section 6.5.4	N/A
10633(f)	Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System Supplies (Recycled Water)	Section 6.5.5	N/A
10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.5	N/A
10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 7.4	N/A
10631(c)(1)	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage.	Water Supply Reliability Assessment	Section 7.1	N/A
10631(c)(1)	Provide data for an average water year, a single dry water year, and multiple dry water years	Water Supply Reliability Assessment	Section 7.2	Sec. 7.2
10631(c)(2)	For any water source that may not be available at a consistent level of use, describe plans to supplement or replace that source.	Water Supply Reliability Assessment	Section 7.1	N/A
10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	Section 7.1	Sec. 7.1
10635(a)	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 7.3	Sec. 7.2, Sec. 7.3



CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location (Optional)
10632(a) and 10632(a)(1)	Provide an urban water shortage contingency analysis that specifies stages of action and an outline of specific water supply conditions at each stage.	Water Shortage Contingency Planning	Section 8.1	Sec. 8.1
10632(a)(2)	Provide 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.	Water Shortage Contingency Planning	Section 8.9	Sec. 8.9
10632(a)(3)	Identify actions to be undertaken by the urban water supplier in case of a catastrophic interruption of water supplies.	Water Shortage Contingency Planning	Section 8.8	Sec. 8.8
10632(a)(4)	Identify mandatory prohibitions against specific water use practices during water shortages.	Water Shortage Contingency Planning	Section 8.2	Sec. 8.2
10632(a)(5)	Specify consumption reduction methods in the most restrictive stages.	Water Shortage Contingency Planning	Section 8.4	Sec. 8.4
10632(a)(6)	Indicated penalties or charges for excessive use, where applicable.	Water Shortage Contingency Planning	Section 8.3	Sec. 8.3
10632(a)(7)	Provide an analysis of the impacts of each of the actions and conditions in the water shortage contingency analysis on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts.	Water Shortage Contingency Planning	Section 8.6	Sec. 8.6
10632(a)(8)	Provide a draft water shortage contingency resolution or ordinance.	Water Shortage Contingency Planning	Section 8.7	Sec. 8.7, App. E
10632(a)(9)	Indicate a mechanism for determining actual reductions in water use pursuant to the water shortage contingency analysis.	Water Shortage Contingency Planning	Section 8.5	Sec. 8.5
10631(f)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Sections 9.2 and 9.3	Chapter 9
10631(f)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	Sections 9.1 and 9.3	N/A



CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location (Optional)
10631(i)	CUWCC members may submit their 2013-2014 CUWCC BMP annual reports in lieu of, or in addition to, describing the DMM implementation in their UWMPs. This option is only allowable if the supplier has been found to be in full compliance with the CUWCC MOU.	Demand Management Measures	Section 9.5	N/A
10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets.	Plan Adoption, Submittal, and Implementation	Section 10.3	Sec. 10.3
10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.	Plan Adoption, Submittal, and Implementation	Section 10.2.1	Sec. 10.2
10621(d)	Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.	Plan Adoption, Submittal, and Implementation	Sections 10.3.1 and 10.4	Sec. 10.4
10635(b)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 60 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	Sec. 10.4
10642	Provide supporting documentation that the urban water supplier made the plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan.	Plan Adoption, Submittal, and Implementation	Sections 10.2.2, 10.3, and 10.5	Sec. 10.2, 10.3, 10.5
10642	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.	Plan Adoption, Submittal, and Implementation	Sections 10.2.1	Sec. 10.2
10642	Provide supporting documentation that the plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3.1	Sec. 10.3
10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 10.4.3	Sec. 10.4
10644(a)(1)	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	Sec. 10.4



CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location <i>(Optional)</i>
10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Sections 10.4.1 and 10.4.2	Sec. 10.4
10645	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.5	Sec. 10.5



APPENDIX A

SB X7-7 Verification Forms

SB X7-7 Verification Form Version FINAL.1

Table 4-C.4 has been modified from the FINAL version.

WUEdata Entry Exceptions	
The data from the tables below will not be entered into WUEdata tables (the tabs for these tables' worksheets are colored purple). These tables will be submitted as separate uploads, in Excel, to WUEdata.	
Process Water Deduction SB X7-7 tables 4-C, 4-C.1, 4-C.2, 4-C.3, 4-C.4 and 4-D	A
A supplier that will use the process water deduction will complete the appropriate tables in Excel, submit them as a separate upload to the WUE data tool, and include them in its UWMP.	
Target Method 2 SB X7-7 tables 7-B, 7-C, and 7-D	
A supplier that selects Target Method 2 will contact DWR (gwen.huff@water.ca.gov) for SB X7-7 tables 7-B, 7-C, and 7-D.	
Target Method 4 These tables are only available online at http://www.dwr.water.ca.gov/wateruseefficiency/sb7/committees/urban/u4/ptm4.cfm	A supplier
that selects Target Method 4 will save the tables from the website listed above, complete the tables, submit as a separate upload to WUE data, and include them with its UWMP.	

SB X7-7 Table 0: Units of Measure Used in UWMP*

(select one from the drop down list)

Acre Feet

**The unit of measure must be consistent with Table 2-3*

NOTES:

SB X7-7 Table-1: Baseline Period Ranges

Baseline	Parameter	Value	Units
10- to 15-year baseline period	2008 total water deliveries	2,058	Acre Feet
	2008 total volume of delivered recycled water	-	Acre Feet
	2008 recycled water as a percent of total deliveries	0.00%	Percent
	Number of years in baseline period ^{1, 2}	10	Years
	Year beginning baseline period range	2000	
	Year ending baseline period range ³	2009	
5-year baseline period	Number of years in baseline period	5	Years
	Year beginning baseline period range	2005	
	Year ending baseline period range ⁴	2009	

¹ If the 2008 recycled water percent is less than 10 percent, then the first baseline period is a continuous 10-year period. If the amount of recycled water delivered in 2008 is 10 percent or greater, the first baseline period is a continuous 10- to 15-year period. ² The Water Code requires that the baseline period is between 10 and 15 years. However, DWR recognizes that some water suppliers may not have the minimum 10 years of baseline data.

³ The ending year must be between December 31, 2004 and December 31, 2010.

⁴ The ending year must be between December 31, 2007 and December 31, 2010.

NOTES:

SB X7-7 Table 2: Method for Population Estimates

Method Used to Determine Population (may check more than one)	
<input type="checkbox"/>	1. Department of Finance (DOF) DOF Table E-8 (1990 - 2000) and (2000-2010) and DOF Table E-5 (2011 - 2015) when available
<input type="checkbox"/>	2. Persons-per-Connection Method
<input checked="" type="checkbox"/>	3. DWR Population Tool
<input type="checkbox"/>	4. Other DWR recommends pre-review
NOTES:	

SB X7-7 Table 3: Service Area Population

Year		Population
10 to 15 Year Baseline Population		
Year 1	2000	
Year 2	2001	11,005
Year 3	2002	11,063
Year 4	2003	11,158
Year 5	2004	11,446
Year 6	2005	12,359
Year 7	2006	14,400
Year 8	2007	15,282
Year 9	2008	15,282
Year 10	2009	14,985
Year 11		
Year 12		
Year 13		
Year 14		
Year 15		
5 Year Baseline Population		
Year 1	2005	12,359
Year 2	2006	14,400
Year 3	2007	15,282
Year 4	2008	15,282
Year 5	2009	14,985
2015 Compliance Year Population		
	2015	16,564
NOTES:		

SB X7-7 Table 4: Annual Gross Water Use *

Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Into Distribution System <i>This column will remain blank until SB X7-7 Table 4-A is completed.</i>	Deductions					Annual Gross Water Use
		Exported Water	Change in Dist. System Storage (+/-)	Indirect Recycled Water <i>This column will remain blank until SB X7-7 Table 4-B is completed.</i>	Water Delivered for Agricultural Use	Process Water <i>This column will remain blank until SB X7-7 Table 4-D is completed.</i>	
10 to 15 Year Baseline - Gross Water Use							
Year 1	2000	-		-	-	-	-
Year 2	2001	555		-	-	-	555
Year 3	2002	594		-	-	-	594
Year 4	2003	1,811		-	-	-	1,811
Year 5	2004	1,978		-	-	-	1,978
Year 6	2005	1,977		-	-	-	1,977
Year 7	2006	2,192		-	-	-	2,192
Year 8	2007	1,897		-	-	-	1,897
Year 9	2008	2,058		-	-	-	2,058
Year 10	2009	2,020	-	-	-	-	2,020
Year 11	0	-		-	-	-	-
Year 12	0	-		-	-	-	-
Year 13	0	-		-	-	-	-
Year 14	0	-		-	-	-	-
Year 15	0	-		-	-	-	-
10 - 15 year baseline average gross water use							1,676
5 Year Baseline - Gross Water Use							
Year 1	2005	1,977		-	-	-	1,977
Year 2	2006	2,192		-	-	-	2,192
Year 3	2007	1,897		-	-	-	1,897
Year 4	2008	2,058		-	-	-	2,058
Year 5	2009	2,020		-	-	-	2,020
5 year baseline average gross water use							2,029
2015 Compliance Year - Gross Water Use							
2015	1,539	-		-	-	-	1,539
* NOTE that the units of measure must remain consistent throughout the UWMP, as reported in Table 2-3							
NOTES:							

SB X7-7 Table 4-A: Volume Entering the Distribution System(s)

Complete one table for each source.

Name of Source		Forebay Aquifer Subbasin		
This water source is:				
<input checked="" type="checkbox"/>		The supplier's own water source		
<input type="checkbox"/>		A purchased or imported source		
Baseline Year <i>Frm SB X7-7 Table 3</i>	Volume Entering Distribution System	Meter Error Adjustment* Optional (+/-)	Corrected Volume Entering Distribution System	
10 to 15 Year Baseline - Water into Distribution System				
Year 1	2000			-
Year 2	2001	555		555
Year 3	2002	594		594
Year 4	2003	1,811		1,811
Year 5	2004	1,978		1,978
Year 6	2005	1,977		1,977
Year 7	2006	2,192		2,192
Year 8	2007	1,897		1,897
Year 9	2008	2,058	-	2,058
Year 10	2009	2,020		2,020
Year 11	0			-
Year 12	0			-
Year 13	0			-
Year 14	0			-
Year 15	0			-
5 Year Baseline - Water into Distribution System				
Year 1	2005	1,977		1,977
Year 2	2006	2,192		2,192
Year 3	2007	1,897		1,897
Year 4	2008	2,058		2,058
Year 5	2009	2,020		2,020
2015 Compliance Year - Water into Distribution System				
2015		1,539		1,539
<i>* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document</i>				

SB X7-7 Table 5: Gallons Per Capita Per Day (GPCD)

Baseline Year <i>Fm SB X7-7 Table 3</i>		Service Area Population <i>Fm SB X7-7 Table 3</i>	Annual Gross Water Use <i>Fm SB X7-7 Table 4</i>	Daily Per Capita Water Use (GPCD)
10 to 15 Year Baseline GPCD				
Year 1	2000	-	-	
Year 2	2001	11,005	555	45
Year 3	2002	11,063	594	48
Year 4	2003	11,158	1,811	145
Year 5	2004	11,446	1,978	154
Year 6	2005	12,359	1,977	143
Year 7	2006	14,400	2,192	136
Year 8	2007	15,282	1,897	111
Year 9	2008	15,282	2,058	120
Year 10	2009	14,985	2,020	120
Year 11	0	-	-	
Year 12	0	-	-	
Year 13	0	-	-	
Year 14	0	-	-	
Year 15	0	-	-	
10-15 Year Average Baseline GPCD				114
5 Year Baseline GPCD				
Baseline Year <i>Fm SB X7-7 Table 3</i>		Service Area Population <i>Fm SB X7-7 Table 3</i>	Gross Water Use <i>Fm SB X7-7 Table 4</i>	Daily Per Capita Water Use
Year 1	2005	12,359	1,977	143
Year 2	2006	14,400	2,192	136
Year 3	2007	15,282	1,897	111
Year 4	2008	15,282	2,058	120
Year 5	2009	14,985	2,020	120
5 Year Average Baseline GPCD				126
2015 Compliance Year GPCD				
2015		16,564	1,539	83
NOTES:				

SB X7-7 Table 6: Gallons per Capita per Day
Summary From Table SB X7-7 Table 5

10-15 Year Baseline GPCD	114
5 Year Baseline GPCD	126
2015 Compliance Year GPCD	83
NOTES:	

SB X7-7 Table 7: 2020 Target Method

Select Only One

Target Method		Supporting Documentation
<input checked="" type="checkbox"/>	Method 1	SB X7-7 Table 7A
<input type="checkbox"/>	Method 2	SB X7-7 Tables 7B, 7C, and 7D <i>Contact DWR for these tables</i>
<input type="checkbox"/>	Method 3	SB X7-7 Table 7-E
<input type="checkbox"/>	Method 4	Method 4 Calculator

NOTES:

SB X7-7 Table 7-A: Target Method 1	
20% Reduction	
10-15 Year Baseline GPCD	2020 Target GPCD
114	91
NOTES:	

SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target

5 Year Baseline GPCD From SB X7-7 Table 5	Maximum 2020 Target ¹	Calculated 2020 Target ²	Confirmed 2020 Target
126	120	91	91

¹ Maximum 2020 Target is 95% of the 5 Year Baseline GPCD except for suppliers at or below 100 GPCD.

² 2020 Target is calculated based on the selected Target Method, see SB X7-7 Table 7 and corresponding tables for agency's calculated target.

NOTES:

SB X7-7 Table 8: 2015 Interim Target GPCD		
Confirmed 2020 Target <i>Fm SB X7-7 Table 7-F</i>	10-15 year Baseline GPCD <i>Fm SB X7-7 Table 5</i>	2015 Interim Target GPCD
91	114	102
NOTES:		

SB X7-7 Table 9: 2015 Compliance

Actual 2015 GPCD	2015 Interim Target GPCD	Optional Adjustments <i>(in GPCD)</i>					2015 GPCD <i>(Adjusted if applicable)</i>	Did Supplier Achieve Targeted Reduction for 2015?
		Enter "0" if Adjustment Not Used			TOTAL Adjustments	Adjusted 2015 GPCD		
		Extraordinary Events	Weather Normalization	Economic Adjustment				
83	102	<i>From Methodology 8 (Optional)</i>	<i>From Methodology 8 (Optional)</i>	<i>From Methodology 8 (Optional)</i>	-	83	83	YES

NOTES:



APPENDIX B

Excerpt from
Monterey Bay Area Governments
2014 Regional Growth Forecast
Table 10: Population Forecast

2014 Regional Growth Forecast

Technical Documentation

Association of Monterey Bay Area Governments
Adopted June 11, 2014

Table 10: Population Forecast

Geography	2010	2020	2025	2030	2035	Compound Annual Growth Rate	Change Over Forecast Period
AMBAG Region	732,708	800,000	827,000	856,000	885,000	0.76%	20.78%
Monterey County	415,057	447,516	463,884	479,487	495,086	0.71%	19.28%
Carmel-By-The-Sea	3,722	3,541	3,661	3,789	3,917	0.20%	5.24%
Del Rey Oaks	1,624	1,889	2,345	2,806	3,468	3.08%	113.55%
Gonzales	8,187	13,340	13,955	16,194	19,333	3.50%	136.14%
Greenfield	16,330	21,341	22,061	22,835	23,609	1.49%	44.57%
King City	12,874	14,568	16,398	17,759	18,620	1.49%	44.63%
Marina	19,718	21,315	22,651	23,388	24,225	0.83%	22.86%
Monterey	27,810	28,004	28,839	29,743	30,647	0.39%	10.20%
Pacific Grove	15,041	15,394	15,914	16,472	17,030	0.50%	13.22%
Salinas	150,441	156,793	161,405	166,912	172,499	0.55%	14.66%
Sand City	334	1,048	1,198	1,414	1,550	6.33%	364.07%
Seaside	33,025	36,120	40,260	41,308	42,256	0.99%	27.95%
Soledad	25,738	31,316	32,050	32,839	33,628	1.08%	30.66%
Balance Of County	100,213	102,847	103,147	104,028	104,304	0.16%	4.08%
San Benito County	55,269	73,103	75,604	78,418	81,332	1.56%	47.16%
Hollister	34,928	39,975	41,704	43,551	45,397	1.05%	29.97%
San Juan Bautista	1,862	1,993	2,015	2,053	2,092	0.47%	12.35%
Balance Of County	18,479	31,135	31,885	32,814	33,843	2.45%	83.14%
Santa Cruz County	262,382	279,381	287,512	298,095	308,582	0.65%	17.61%
Capitola	9,918	9,119	9,427	9,758	10,088	0.07%	1.71%
Santa Cruz	59,946	66,860	70,058	73,375	76,692	0.99%	27.94%
Scotts Valley	11,580	11,638	11,696	11,754	11,813	0.08%	2.01%
Watsonville	51,199	59,446	61,452	63,607	65,762	1.01%	28.44%
Balance Of County	129,739	132,318	134,879	139,601	144,227	0.42%	11.17%



APPENDIX C

DWR's Groundwater Bulletin 118

Salinas Valley Groundwater Basin, Forebay Aquifer Subbasin

- Groundwater Basin Number: 3-4.04
- County: Monterey
- Surface Area: 94,000 acres (147 square miles)

Basin Boundaries and Hydrology

The Salinas Valley Groundwater Basin – Forebay Aquifer Subbasin occupies the central portion of the Salinas Valley and extends from the town of Gonzales in the north to approximately three miles south of Greenfield.

The subbasin is bounded to the west by the contact of Quaternary terrace deposits of the subbasin with Mesozoic metamorphic rocks (Sur Series) or middle Miocene marine sedimentary rocks (Monterey Shale) of the Sierra de Salinas. To the east, the boundary is the contact of Quaternary terrace deposits or alluvium with granitic rocks of the Gabilan Range. The northern subbasin boundary is shared with the Salinas Valley –180/400-Foot Aquifer and –Eastside Aquifer and represents the southern limit of confining conditions in the 180/400-Foot Aquifer Subbasin. The southern boundary is shared with the Salinas Valley – Upper Valley Aquifer Subbasin and generally represents the southern limit of confining conditions above the 400-Foot Aquifer (MW 1994). This boundary also represents a constriction of the Valley floor caused by encroachment from the west by the composite alluvial fan of Arroyo Seco and Monroe Creek.

Intermittent streams such as Stonewall and Chalone Creeks drain the western slopes of the Gabilan Range and flow westward across the subbasin toward the Salinas River. The major tributary drainage to the Salinas River in the Salinas Valley is Arroyo Seco, which drains a large portion of the Sierra de Salinas west of Greenfield. The Subbasin boundaries are generally correlative with those of the Forebay Subarea of the Monterey County Water Resources Agency (MCWRA). Average annual precipitation is approximately 11 inches at the Valley floor to 17 inches at the western margin of the subbasin.

Hydrogeologic Information

The Salinas Valley is surrounded by the Gabilan Range on the east, by the Sierra de Salinas and Santa Lucia Range on the west, and is drained by the Salinas River, which empties into Monterey Bay on the north. The King City (Rinconada-Reliz) Fault (Durbin 1978) generally follows the western margin of the Valley from King City in the south to Monterey Bay in the north. Valley-side down, normal movement along the fault allowed the deposition of an asymmetric, westward thickening alluvial wedge. The Salinas Valley has been filled with 10,000 to 15,000 feet of Tertiary and Quaternary marine and terrestrial sediments that include up to 2,000 feet of saturated alluvium (Showalter 1984). Above the generally non-water bearing and consolidated granitic basement, Miocene age Monterey and Pliocene age Purisima Formations are water bearing strata within the Plio-Pleistocene age Paso Robles Formation and within Pleistocene to Holocene alluvium. Along the southern margins of the Forebay Aquifer Subbasin, the Pancho Rico

Formation is the equivalent of the Purisima Formation. The depth to the base of fresh water in the subbasin ranges from about 200 feet at the eastern Valley margin to 2,200 feet at the western margin (Durbin 1978) with a sharp rise from about 2,000 to 1,000 feet at the southern Subbasin margin.

Water Bearing Formations

The primary water-bearing units of this subbasin are the same units that produce water in the adjacent 180/400-Foot Aquifer Subbasin – namely, the 180-Foot Aquifer and the 400-Foot Aquifer. However, the near-surface confining unit (Salinas Aquitard) of the 180/400-Foot Aquifer Subbasin does not extend into the Forebay or other subbasins. Groundwater in the Forebay Aquifer Subbasin is unconfined and occurs in lenses of sand and gravel that are interbedded with massive units of finer grained material (Durbin 1970).

The thickness of the 180-foot aquifer varies from 50 to 150 feet in the Salinas Valley, with an average 100 feet (MW 1994; DWR 1970). The 180-Foot Aquifer may be in part correlative to older portions of Quaternary terrace deposits or the upper Aromas Red Sands. More recent studies suggest the 400-Foot Aquifer exist not only in the 180/400-Foot Aquifer Subbasin, but also in lower Forebay Aquifer Subbasin (MW 1994). The 400-Foot aquifer has an average thickness of 200 feet and consists of sands, gravels, and clay lenses (LHI 1985). The upper portion of this aquifer may be correlative with the Aromas Red Sands and the lower portion with the upper part of the Paso Robles Formation (MW 1994). The 180-Foot Aquifer is separated from the 400-Foot Aquifer by a zone of discontinuous sands and blue clays called the 180/400-foot Aquiclude (MW 1998) which ranges in thickness from 10 to 70 feet.

Recent reports apply the titles “shallow zone” and “deep zone” to the 180-Foot Aquifer and the 400-Foot Aquifer, respectively, in the Forebay Subbasin (MW 1998).

An additional deeper aquifer (also referred to as the 900-Foot Aquifer or the Deep Aquifer) is present in the lower and central Salinas Valley, including beneath the Forebay Aquifer Subbasin. This deeper aquifer consists of alternating layers of sand-gravel mixtures and clays (up to 900 feet thick), rather than a distinct aquifer and aquitard (MW 1994). The Deep Aquifer has experienced little development except near the coast where it is used to replace groundwater from the 180- and 400-Foot Aquifers rendered unusable by seawater intrusion. Well yield and water quality data for this aquifer are scarce but available data suggests a high sodium content limits the water's agricultural use.

MW (1994) estimated specific yields for the three main aquifers in the Salinas Valley for their Integrated Ground and Surface Water Model (IGSM). The estimated values for the 180-Foot, 400-Foot, and Deep Aquifers were 8-16 percent, 6 percent, and 6 percent, respectively. An average weighted specific yield of 12.1 percent was derived by the DWR (1955) for three depth zones in the Subbasin within the interval 20 to 200 feet below grade. Yates (1988) estimated a storage coefficient of 0.180 for the Arroyo Seco Cone and 0.306 for the northern Subbasin.

Groundwater quality issues primarily stem from long-term agricultural production in the Salinas Valley that has contributed to an extensive non-point source nitrate problem. Nitrate concentrations in many wells in the Valley exceed drinking water standards (DWR 1970), including in wells throughout the Forebay Aquifer Subbasin (MCWRA 1997).

Recharge Areas

Subbasin recharge is primarily from percolation in stream channel deposits in the Arroyo Seco and Salinas River drainages (DWR 1946a). About half again as much recharge results from applied irrigation water (MW 1998). Recharge from direct precipitation is minor and probably occurs only in wet years. Subsurface flow from the Upper Valley Subbasin and subsurface flow from the east and west subbasin boundaries account for the remainder of recharge.

Groundwater flow is generally in a down-valley direction. Recharge from McCoy Creek east of Gonzales appeared to create a slight groundwater mound at the northeast corner of the subbasin during Fall 1995 (MCWRA 1997).

Groundwater Level Trends

From 1964 to 1974, the amount of groundwater in storage increased 23,300 af. This increasing trend continued through 1974 to 1984, with an increase of 60,100 af. Between 1984 and 1994, the amount of groundwater in storage declined 99,700 af (MW 1998).

Groundwater Storage

Calculations made by DWR (2000) for this report indicate that the total storage capacity of the subbasin is approximately 5,720,000 af. As of 1994, there was an estimate of 4,530,000 af of stored groundwater in the subbasin (MW 1998).

Groundwater Budget (Type A)

A detailed budget was available for 1994 (MW 1998). Natural recharge is estimated to be 154,000 af. Applied water recharge is included in this figure. Subsurface inflow is approximately 31,000 af. Annual urban and agricultural extractions total approximately 160,000 af. Subsurface outflow is estimated to be 20,000 af.

Groundwater Quality

Characterization. The eastern subbasin contains a lower quality sodium sulfate water. The western subbasin contains good quality calcium bicarbonate waters that are generally derived from recharge along the Arroyo Seco and Salinas Rivers (JSA 1990). TDS levels range from 300 to 1,100 mg/L, with an average value of 624 mg/L (based on 68 analyses; DHS 2000). The Department of Health Services, which monitors Title 22 water quality standards, reports TDS values in the Upper Forebay area (formerly basin number 3-4.04) ranging from 380 to 600 mg/L, with an average value of 490 mg/L (based on analyses of 2 public supply wells). The DHS also reports TDS values for the Lower Forebay Aquifer (formerly basin number 3-4.03) ranging from 410 to 1,100 mg/L, with an average value of 654 mg/L (based

on analyses of 13 public supply wells). EC values range from 721 to 3110 $\mu\text{mhos/cm}$, with an average value of 1,590 $\mu\text{mhos/cm}$ (based on 7 wells; DWR 1969b). DHS (2000) reports EC values in the subbasin ranging from 389 to 1,600 $\mu\text{mhos/cm}$, with an average value of 936 $\mu\text{mhos/cm}$ (based on 73 analyses).

Impairments. Of 81 wells sampled by the MCWRA in 1995, 30 exceeded the drinking water standard for nitrate (45 mg/L). The average concentration was 45 mg/L (MCWRA 1997).

Water Quality in Public Supply Wells

Constituent Group ¹	Number of wells sampled ²	Number of wells with a concentration above an MCL ³
Inorganics – Primary	15	2
Radiological	17	0
Nitrates	14	3
Pesticides	14	0
VOCs and SOCs	15	0
Inorganics – Secondary	15	6

¹ A description of each member in the constituent groups and a generalized discussion of the relevance of these groups are included in *California's Groundwater – Bulletin 118* by DWR (2003).

² Represents distinct number of wells sampled as required under DHS Title 22 program from 1994 through 2000.

³ Each well reported with a concentration above an MCL was confirmed with a second detection above an MCL. This information is intended as an indicator of the types of activities that cause contamination in a given basin. It represents the water quality at the sample location. It does not indicate the water quality delivered to the consumer. More detailed drinking water quality information can be obtained from the local water purveyor and its annual Consumer Confidence Report.

Well Production characteristics

Well yields (gal/min)		
Municipal/Irrigation		
Total depths (ft)		
Domestic		
Municipal/Irrigation	Range: 120 - 807	Average: 349 (30 Well Completion Reports)

Active Monitoring Data

Agency	Parameter	Number of wells / measurement frequency
MCWRA	Groundwater Levels	89 Varies (Geomatrix 2001)
MCWRA	Groundwater Quality	91 Annually (Geomatrix 2001)
Department of Health Services (incl. Cooperators)	Title 22 water quality	35 Varies

Basin Management

Groundwater management: MCWRA requires annual extraction reports from all agricultural and municipal well operators, and has researched, developed and/or constructed projects to reduce seawater intrusion, manage nitrate contamination in the groundwater, provide adequate water supplies to meet current and future needs, and to hydrologically balance the groundwater basin in the Salinas Valley.

Water agencies

Public	Monterey County Water Resources Agency; City of Soledad; City of Greenfield; State Correctional Facility at Soledad
Private	Over 15 private small water systems

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Errata

Changes made to the basin description will be noted here.



APPENDIX D

MCWRA 2015 Ground Water Extraction Report

2015

Groundwater Extraction Summary Report



Monterey County Water Resources Agency
April 2017



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Overview of the Groundwater Reporting Program

History of the Groundwater Reporting Program

In 1993, the Monterey County Board of Supervisors adopted Ordinances No. 3663 and 3717 that required water suppliers within Zones 2, 2A, and 2B to report water-use information for groundwater extraction facilities (wells) and service connections, with a discharge pipe inside diameter of at three inches or greater, to the Monterey County Water Resources Agency (Agency).

The purpose of the Groundwater Reporting Program is to provide the Agency with the most accurate water use information available to effectively manage groundwater resources. In order to obtain accurate water pumping information, methods of directly measuring water extractions have been implemented.

The Agency collects groundwater extraction data from well operators, beginning November 1 and ending October 31, each year. Data collection began with the 1992-1993 reporting year. Information received from more than three hundred well operators in the below-referenced zones of the Salinas Valley is stored in an Agency database.

Since 1991, the Agency has required the annual submittal of Agricultural Water Conservation Plans (Ordinance 3851), which outline the best management practices (BMPs) that are adopted each year by growers in the Salinas Valley. In 1996, an ordinance was passed that requires the filing of Urban Water Conservation Plans (Ordinance 3886). Developed as the urban counterpart of the agricultural water conservation plans, this

program provides an overview of the BMPs being implemented by urban water purveyors as conservation measures.

The Salinas Valley Groundwater Basin, within the Agency's Zones, is divided into four major hydrologic subareas; Pressure, East Side, Forebay, and Upper Valley. These subareas are hydrologically and hydraulically connected and their boundaries are derived from differences in local hydrogeology and recharge.

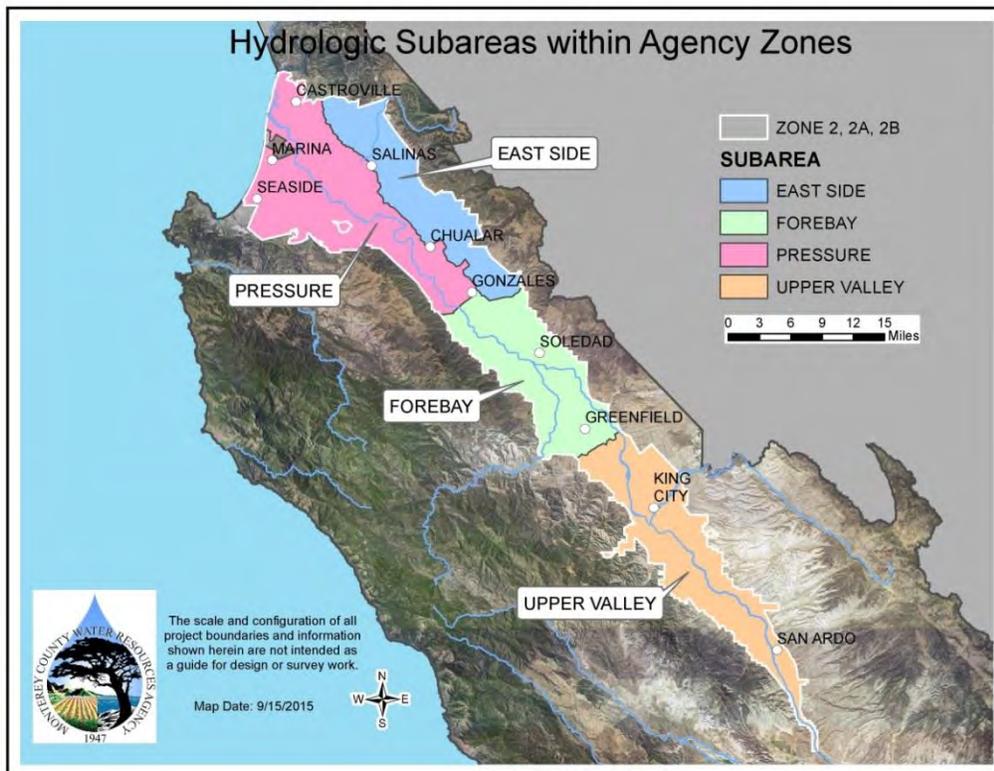


Figure 1. Salinas Valley Groundwater Basin Subareas and Agency Zones

Groundwater Summary Report

The purpose of this report is to summarize the data submitted to the Agency by well operators in February 2016 from the following annual forms:

- Groundwater Extraction Forms (agricultural and urban)
- Water Conservation Plans (agricultural and urban)
- Water and Land Use Forms (agricultural)

The image shows three overlapping forms from the Monterey County Water Resources Agency. The top form is the 'WATER FLOWMETER METHOD' reporting form, which includes fields for company name, address, city, state, and well information. The middle form is the '2015 Agricultural Water Conservation Plan' (submit one plan per company), which includes instructions and a table for reporting water conservation measures. The bottom form is the '2014 WATER AND LAND USE FORM' (submit one form per ranch), which includes a table for reporting water use by crop type and irrigation method.

Reporting Methods

The Groundwater Reporting Program provides well operators with a choice of three different reporting methods: Water Flowmeter, Electrical Meter, or Hour Meter (timer). The summary of groundwater extractions presented in this report is compiled from data generated by all three reporting methods. Ordinance 3717 requires annual pump efficiency tests and/or meter calibration of each well to ensure the accuracy of the data reported. The distribution of methods used for the 2015 reporting year was: 71% Flowmeter, 28% Electrical Meter, and 1% Hour Meter.



Disclaimer

While the Agency has made every effort to ensure the accuracy of the data presented in this report, it should be noted that the data are submitted by individual reporting parties. In addition, since so many factors can affect the extraction calibration, it is understood that no reporting method is 100 percent accurate. The Agency maintains strict quality assurance in the compilation, standardization, and entry of the data received. Changes to historical data may occur due to additional submittals after the due date or database upgrades. The Agency received Groundwater Extraction Reports from ninety-eight percent (98%) of the 1,901 wells in the Salinas Valley for the 2015 reporting year. Agricultural and Urban Water Conservation Plan submittals for 2016 were ninety percent (90%) and one hundred percent (100%), respectively.

The agricultural data from the groundwater extraction program covers the reporting year of November 1, 2014, through October 31, 2015; the urban data covers calendar year 2015. The agricultural and urban water conservation plans for 2016 are also summarized. This report is intended to present a synopsis of current water extraction within the Salinas Valley, including agricultural and urban water conservation improvements that are being implemented to reduce the total amount of water pumped. It is not the purpose of this report to thoroughly analyze the factors that contribute to increases or decreases in pumping.

Reporting Format

Groundwater extraction data are presented in this report by measurement in acre-feet. One acre-foot is equal to 325,851 gallons.

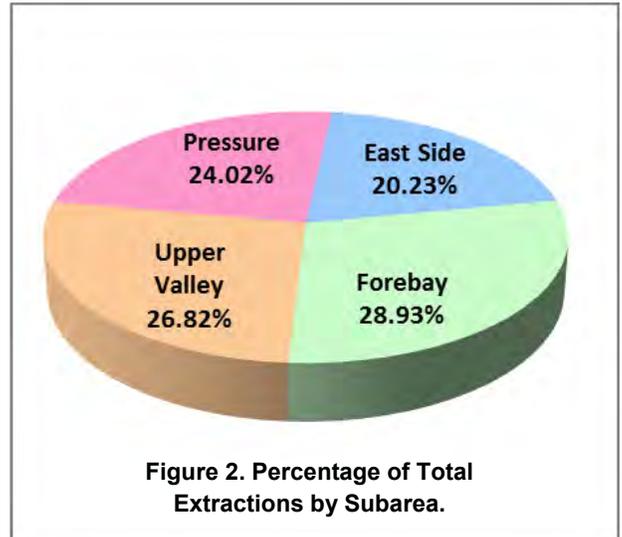
Groundwater Extraction Form – Data Summary

Total Extractions by Subarea and Type of Use

All data presented in this section are derived from the agricultural and urban Groundwater Extraction Forms.

Table 1. Extraction Data by Subarea and Type of Use.

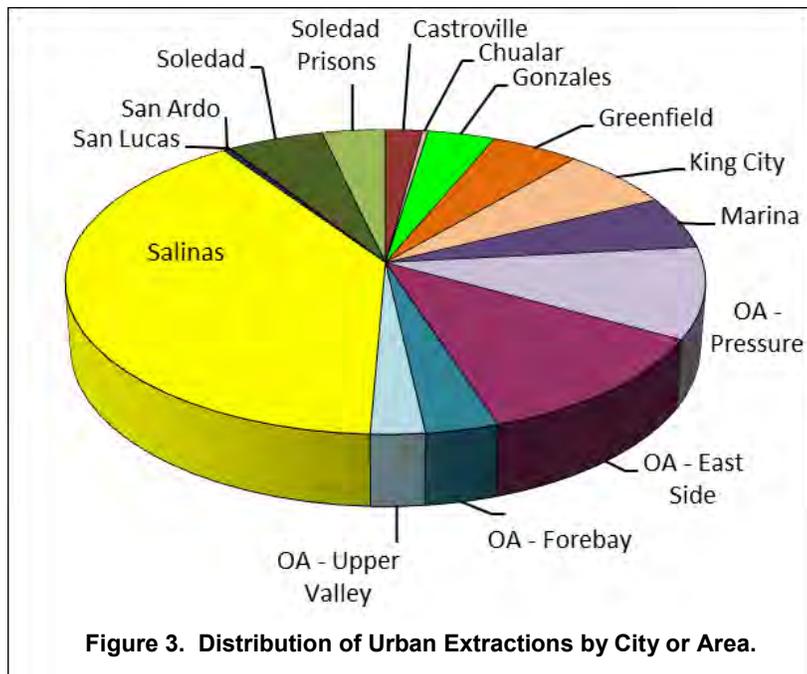
Subarea	Agricultural Pumping (AF)	Urban Pumping (AF)	Total Pumping (AF)
Pressure	109,214	14,443	123,657
East Side	91,491	12,631	104,122
Forebay	142,668	6,221	148,889
Upper Valley	134,740	3,306	138,046
Total (AF)	478,113	36,601	514,714
Percent of Total	92.89%	7.11%	100.00%



Urban Extraction Data by City or Area

The total groundwater extractions attributed to urban use include residential, commercial, institutional, industrial and governmental pumping, and are summarized below.

Table 2. Urban Extractions by City or Area



City or Area	Urban Pumping (AF)	Percentage
Castroville	771	2.12%
Chualar	115	0.31%
Gonzales	1,407	3.84%
Greenfield	1,842	5.03%
King City	2,354	6.43%
Marina	2,056	5.62%
OA - Pressure	3,548	9.69%
OA - East Side	4,360	11.91%
OA - Forebay	1,202	3.28%
OA - Upper Valley	891	2.43%
Salinas	14,568	39.80%
San Ardo	141	0.39%
San Lucas	26	0.07%
Soledad	1,991	5.45%
Soledad Prisons	1,330	3.63%
Total	36,602	100.00%

*OA=Other Area

Total Groundwater Extractions in Zones 2, 2A, 2B

This figure provides a spatial representation of total groundwater extractions within Zones 2, 2A, and 2B for the 2015 report year. The figures and tables on the next four pages provide extraction information by subarea.

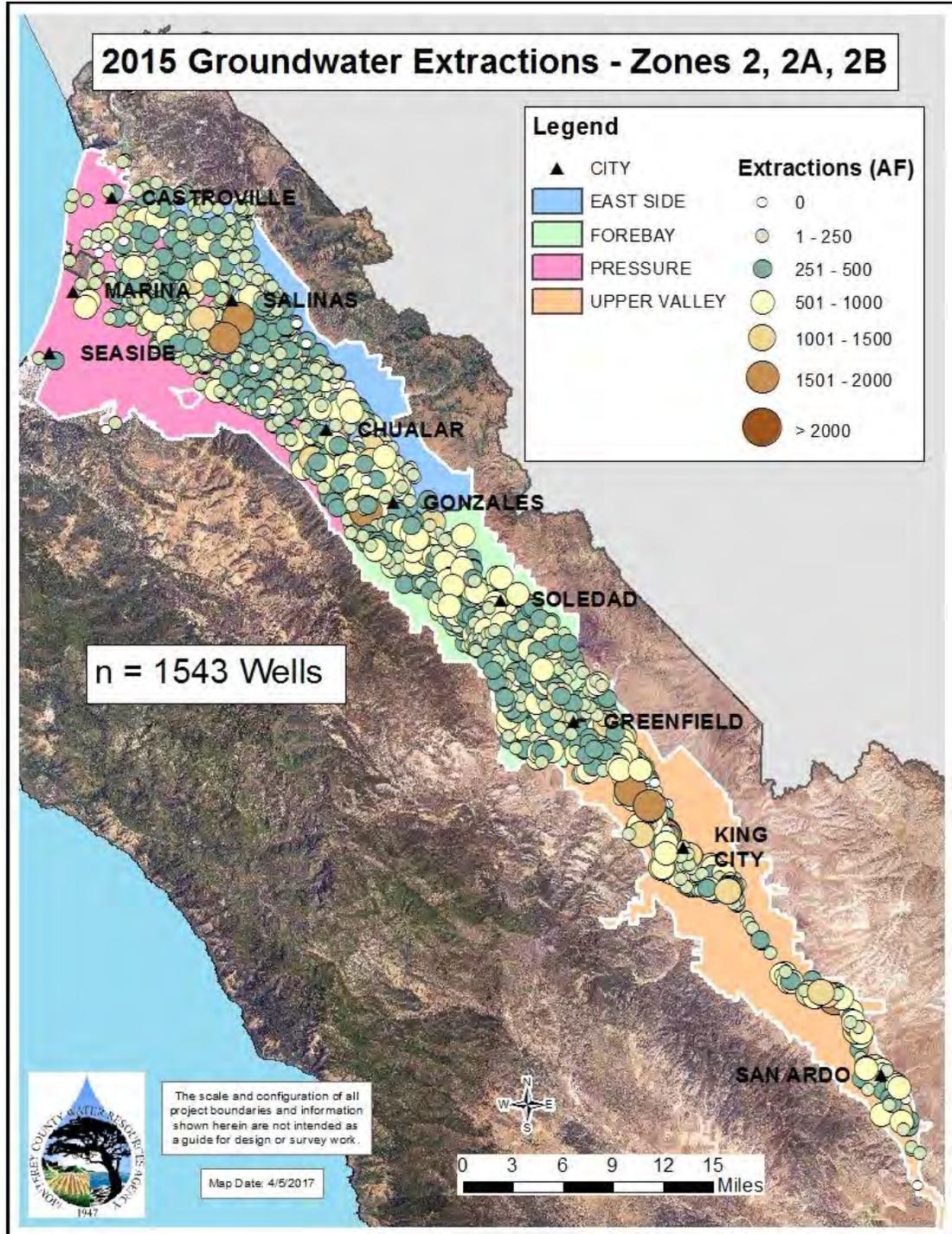


Figure 4. 2015 Groundwater Extractions.

Pressure Subarea – Extraction Data

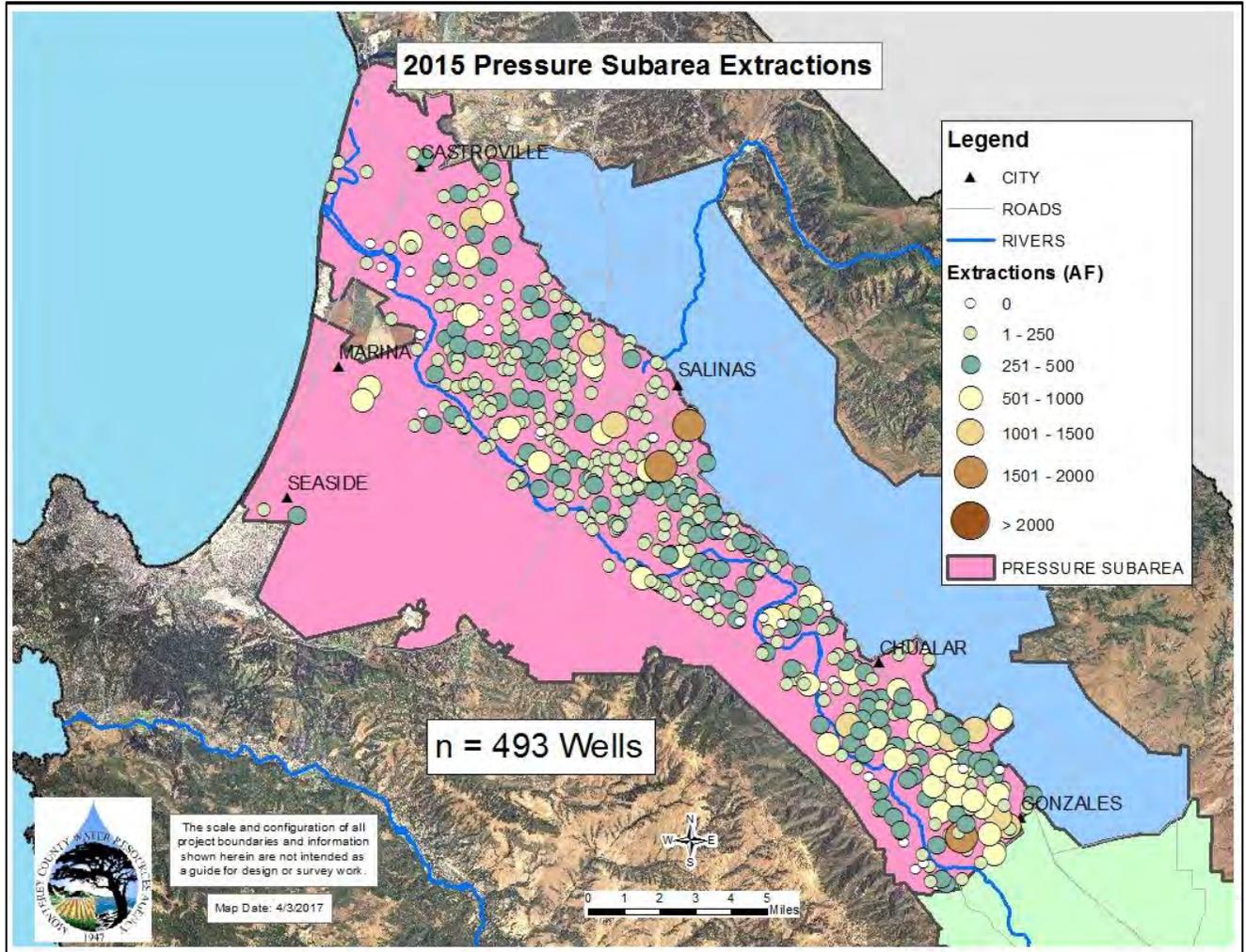


Figure 5. 2015 Groundwater Extraction in the Pressure Subarea.

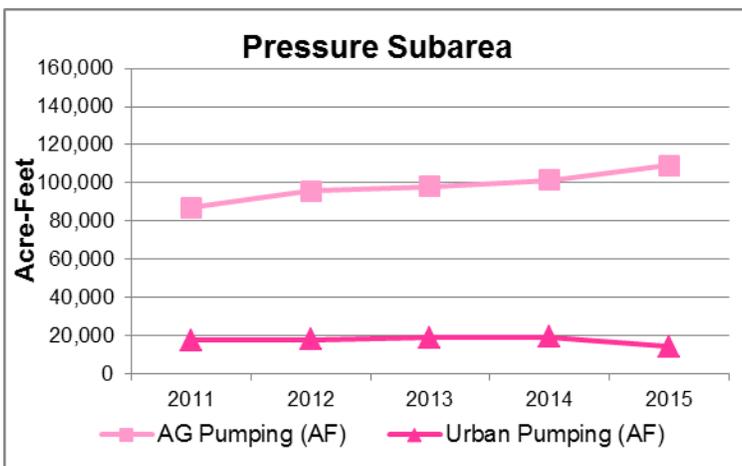


Table 3. Total, Agricultural, and Urban Extractions (AF) in the Pressure Subarea 2011-2015.

Year	Total Pumping (AF)	AG Pumping (AF)	Urban Pumping (AF)
2011	105,172	87,290	17,882
2012	113,898	95,814	18,084
2013	117,242	98,141	19,101
2014	120,890	101,465	19,425
2015	123,657	109,214	14,443

Figure 6. Agricultural and Urban Extractions (AF) in the Pressure Subarea 2011-2015.

East Side Subarea – Extraction Data

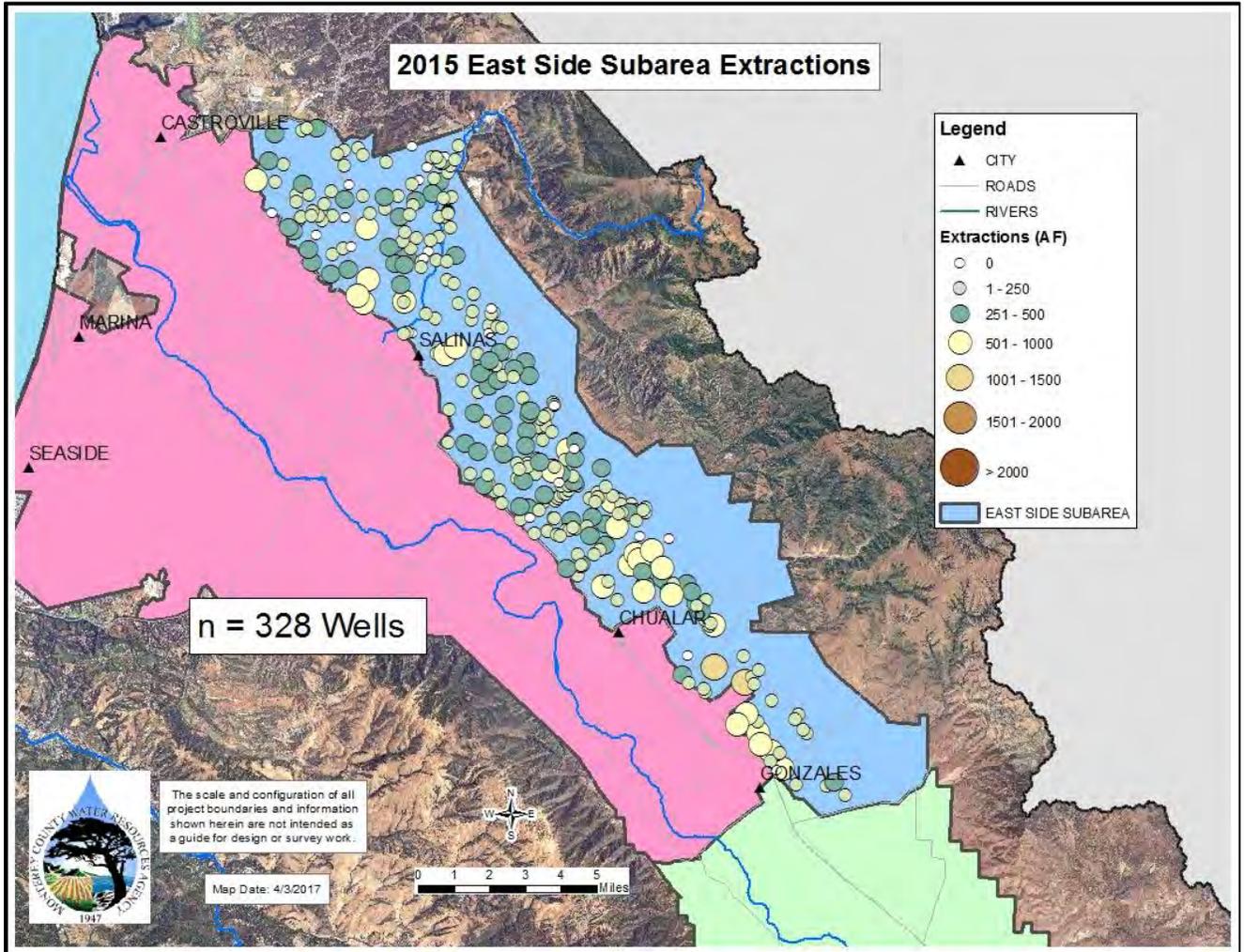


Figure 7. 2015 Groundwater Extraction in the East Side Subarea.

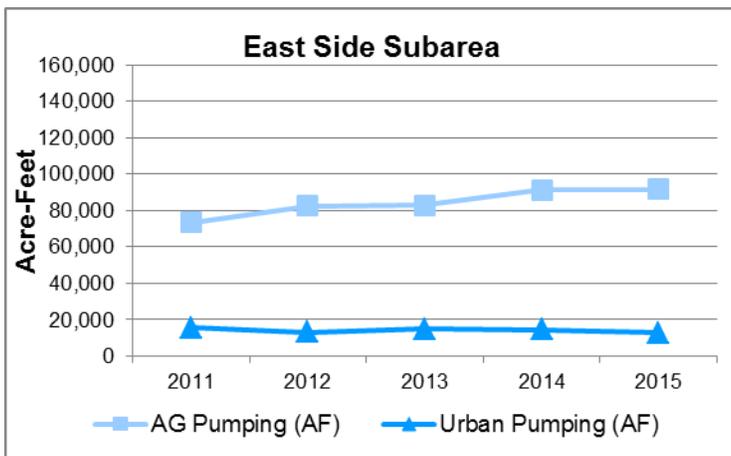


Figure 8. Agricultural and Urban Extractions (AF) in the East Side Subarea 2011-2015.

Table 4. Total, Agricultural, and Urban Extractions (AF) in the East Side Subarea 2011-2015.

Year	Total Pumping (AF)	AG Pumping (AF)	Urban Pumping (AF)
2011	89,052	73,495	15,557
2012	95,543	82,451	13,092
2013	97,622	82,895	14,727
2014	105,644	91,160	14,484
2015	104,122	91,491	12,631

Forebay Subarea – Extraction Data

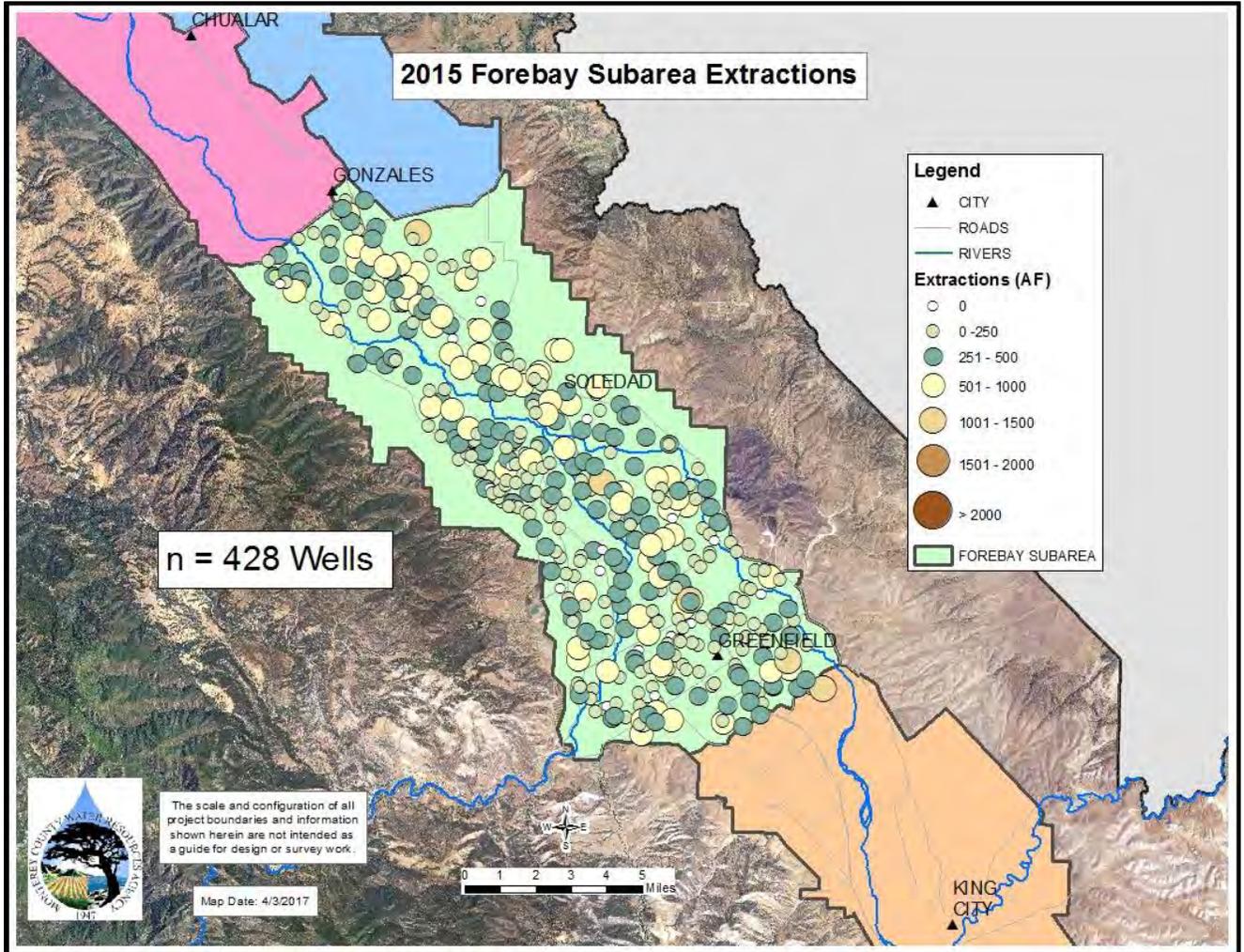


Figure 9. 2015 Groundwater Extraction in the Forebay Subarea.

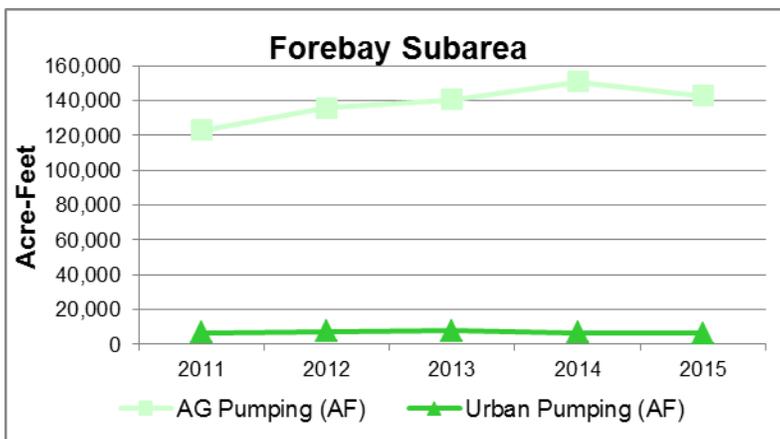


Figure 10. Agricultural and Urban Extractions (AF) in the Forebay Subarea 2011-2015.

Table 5. Total, Agricultural, and Urban Extractions (AF) in the Forebay Subarea 2011-2015.

Year	Total Pumping (AF)	AG Pumping (AF)	Urban Pumping (AF)
2011	129,737	122,903	6,834
2012	143,459	135,971	7,488
2013	148,467	140,574	7,893
2014	157,635	150,890	6,745
2015	148,889	142,668	6,221

Upper Valley Subarea – Extraction Data

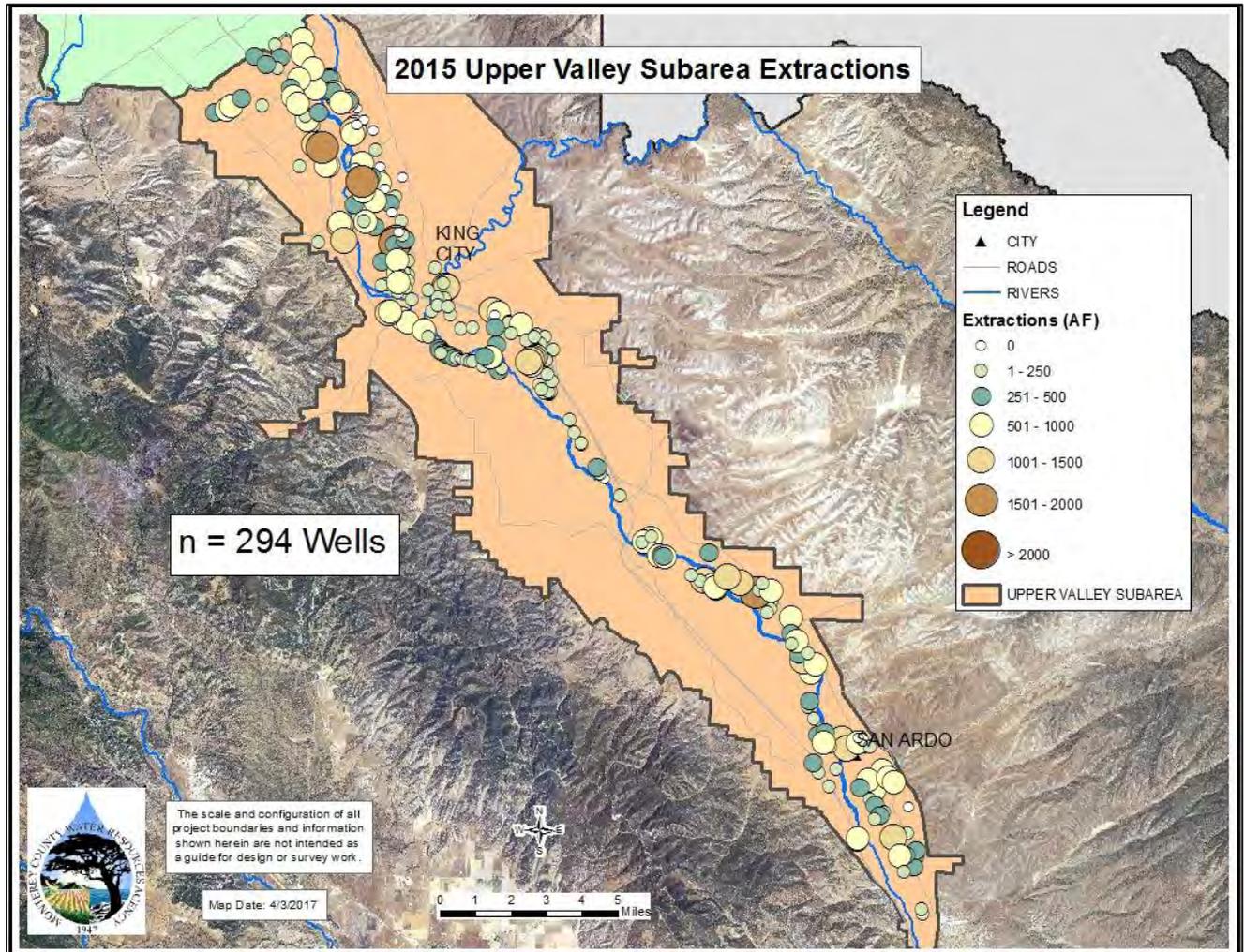


Figure 11. 2015 Groundwater Extraction in the Upper Valley Subarea

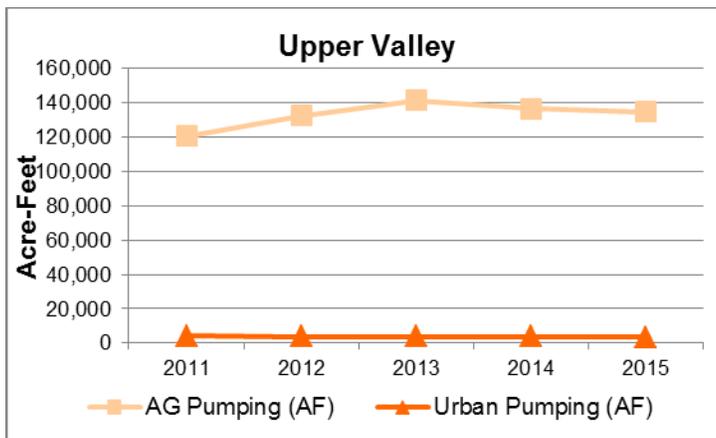


Figure 12. Agricultural and Urban Extractions (AF) in the Upper Valley Subarea 2011-2015.

Table 6. Total, Agricultural, and Urban Extractions (AF) in the Upper Valley Subarea 2011-2015.

Year	Total Pumping (AF)	AG Pumping (AF)	Urban Pumping (AF)
2011	124,623	120,422	4,201
2012	136,340	132,383	3,957
2013	144,874	141,263	3,611
2014	140,318	136,645	3,673
2015	138,046	134,740	3,306

Agricultural Water Conservation – Data Summary

The Agricultural Water Conservation Plans include information on net irrigated acreage, irrigation methods, and crop type. This information is forecasted and indicates what the grower plans to do in the upcoming year. The first figure (13) and table (7) presents a breakdown of irrigation methods by crop type. The next figure (14) shows the change in irrigation methods over the length of the program and the final figure (15) shows the top ten Best Management Practices (BMPs) to be implemented in 2016.

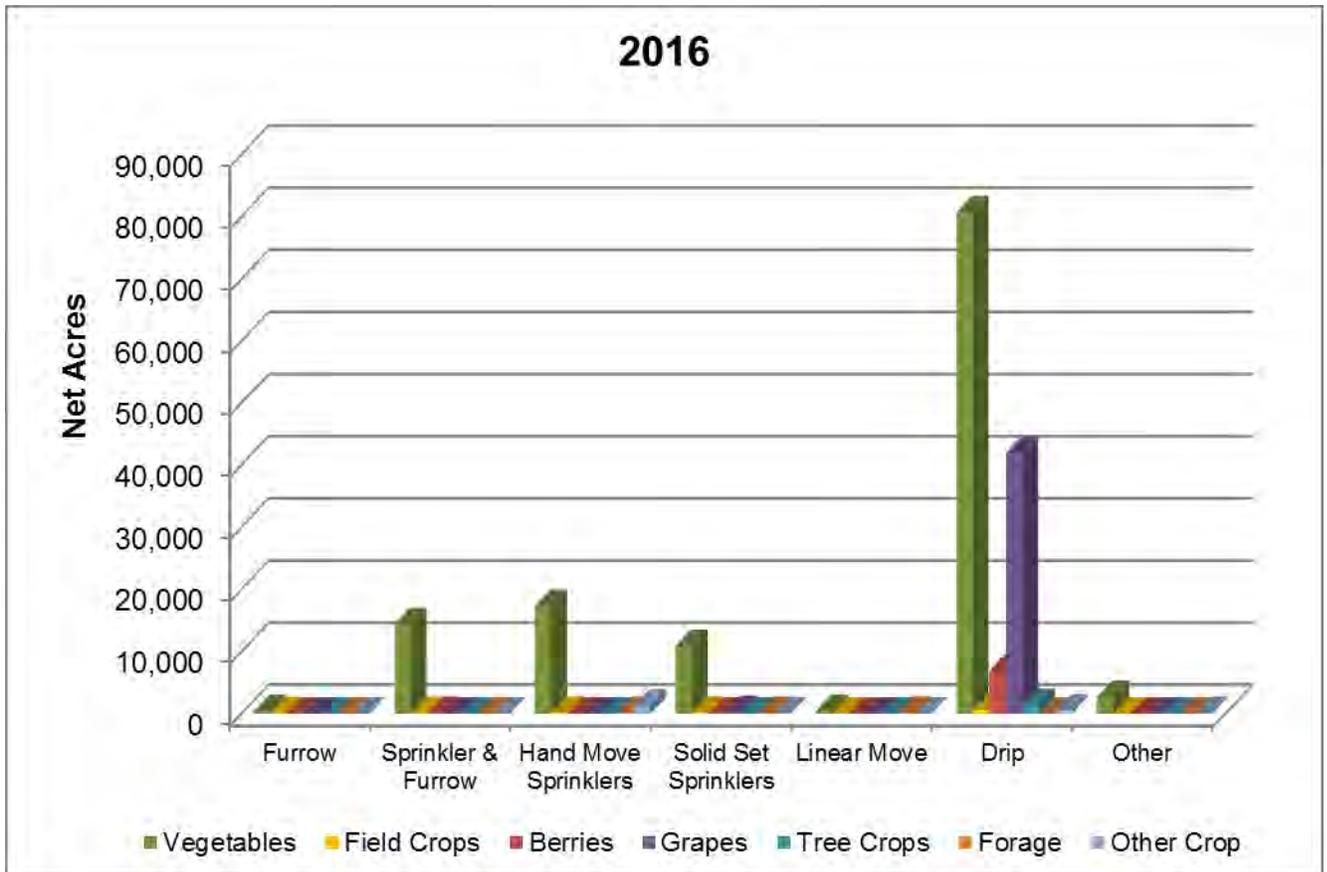


Figure 13. 2016 Net Acre Distribution of Irrigation Methods by Crop Type.

Table 7. Net Acres by Irrigation Method and Crop Type.

2016	Furrow	Sprinkler & Furrow	Hand Move Sprinklers	Solid Set Sprinklers	Linear Move	Drip	Other	Total
Vegetables	424	14,391	17,298	10,876	431	80,686	2,703	126,809
Field Crops	40	72	118	112	0	576	0	918
Berries	0	84	0	0	0	7,014	0	7,098
Grapes	0	0	0	242	0	41,939	0	42,181
Tree Crops	0	0	0	0	0	1,389	0	1,389
Forage	7	0	143	80	126	0	0	356
Other Crop	0	0	1,292	20	0	482	83	1,877
Unirrigated								982
Total	471	14,547	18,851	11,330	557	132,086	2,786	181,610

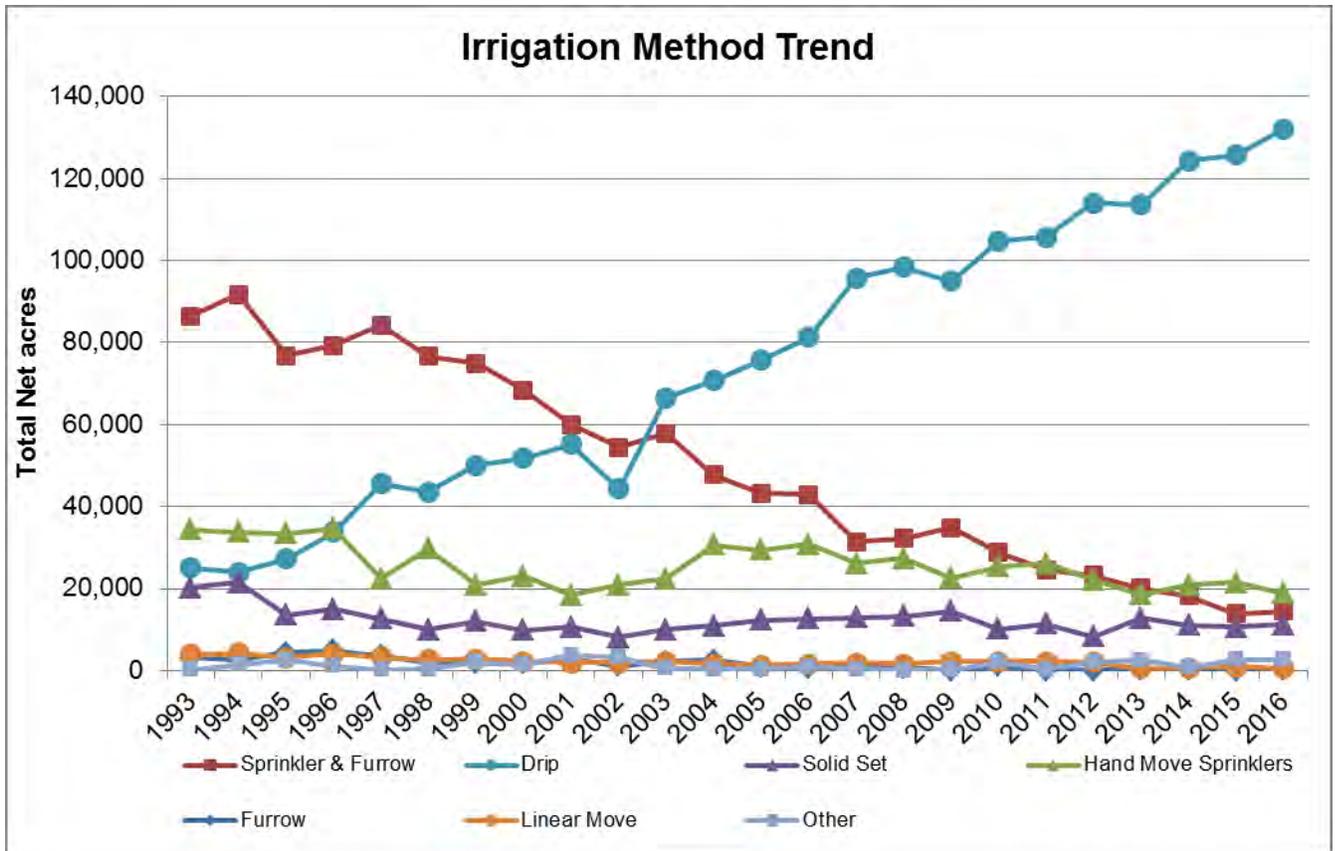


Figure 14. Changes in Irrigation Methods Used Over Time (1993 – 2016) in Zones 2, 2A, and 2B.

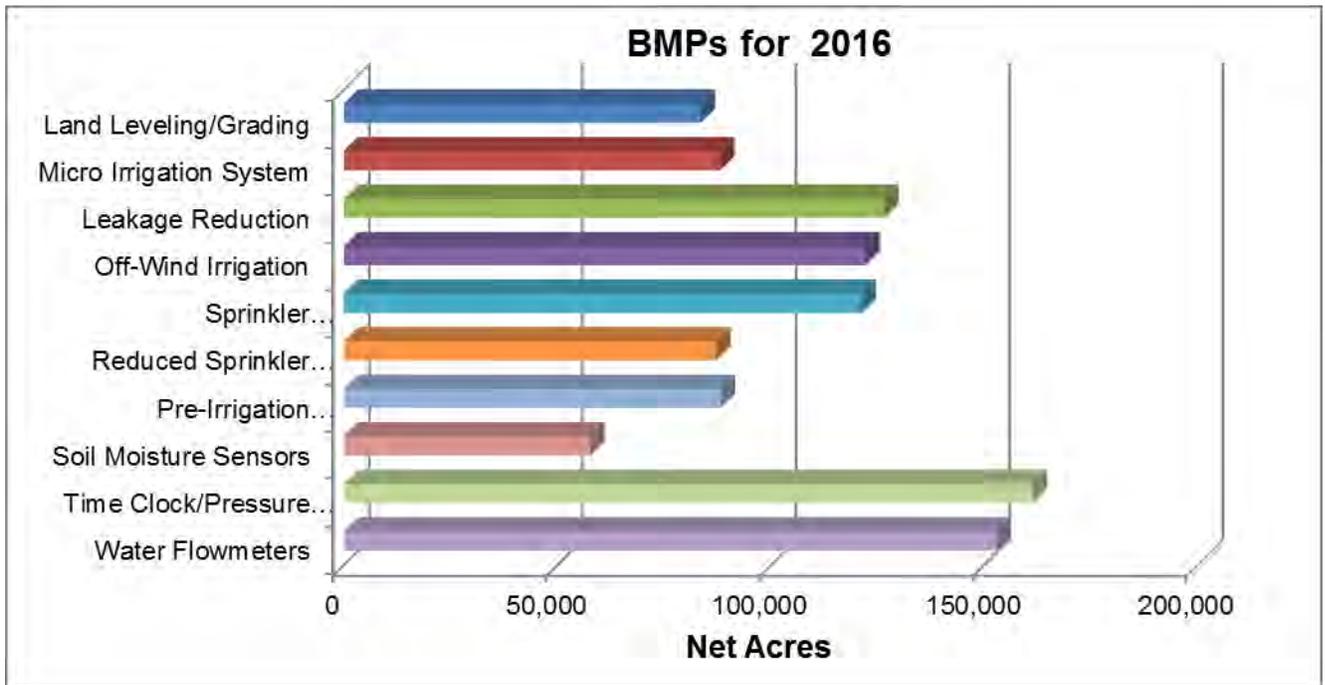


Figure 15. Top Ten BMPs Forecasted for 2016 Based on Reported Net Acres.

Water and Land Use Form – Data Summary

The following three figures are generated from the data submitted on the Water and Land Use forms and show the agricultural water extracted (Fig. 16), irrigated net acres (Fig. 17), and amount of water used per acre (Fig. 18) by hydrologic subarea and crop type. The data account for all crop types reported and all reporting methods: Water Flowmeter, Electrical Meter, and Hour Meter.

Changing weather patterns, variable soils, and crop types affect the amount of water needed for efficient irrigation. Even during a normal rain year, pumping rates will vary from one subarea to another and crop types will vary depending on economic demand.

Examples of products categorized as the following Crop Types include: strawberries and raspberries under Berries; beans and grains under Field Crops; alfalfa and pasture under Forage Crops; avocados and lemons under Tree Crops; and sod, flower bulbs, ornamentals, and cactus pears under Other Crops.

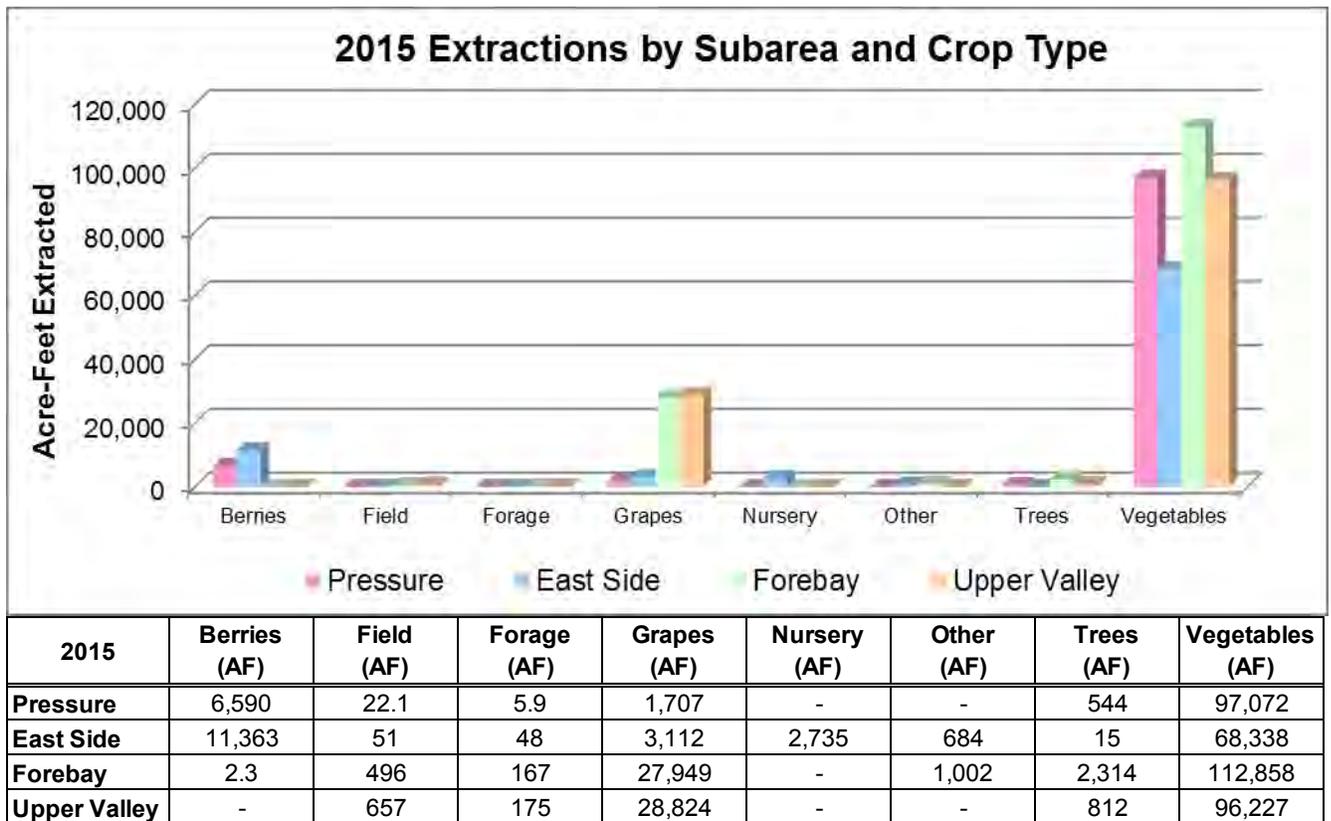
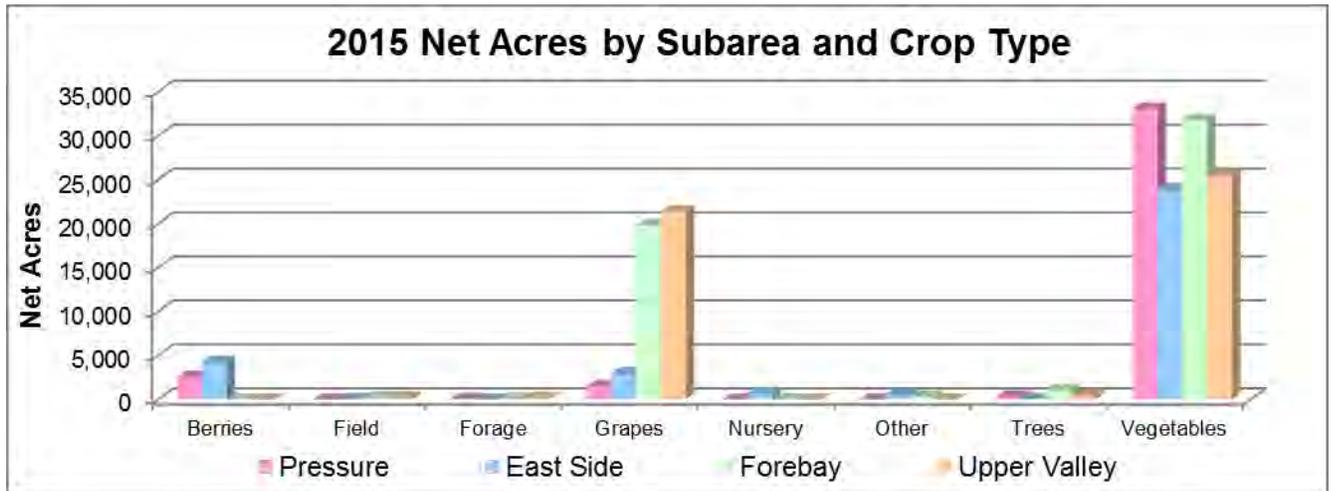
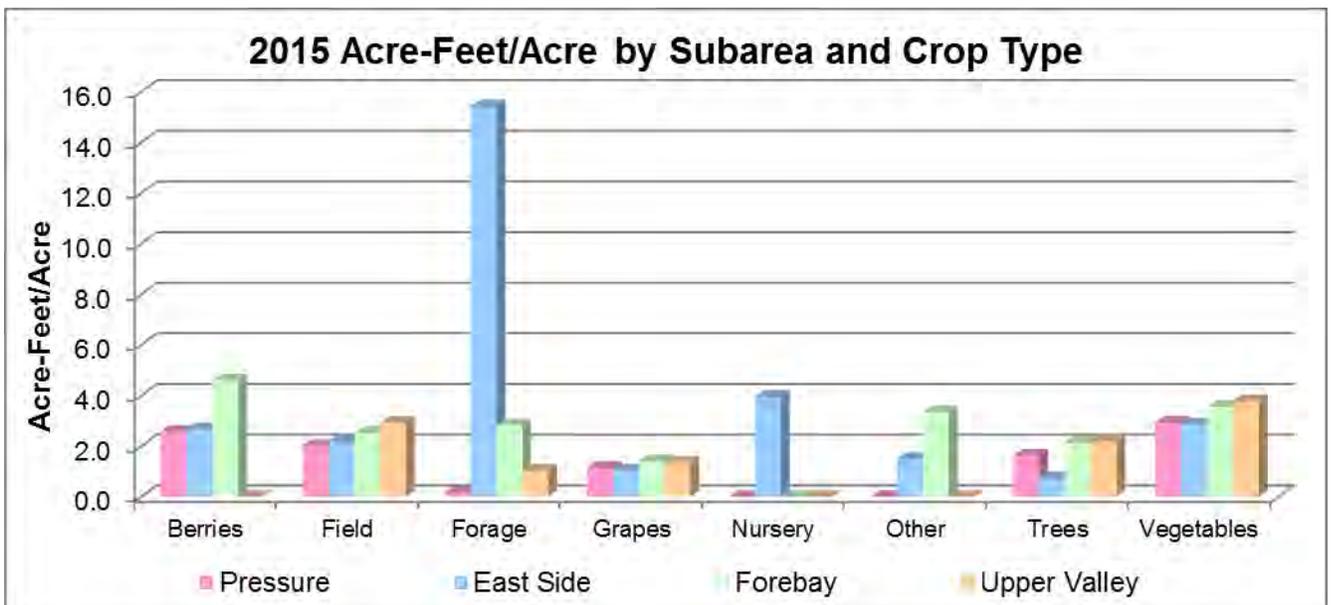


Figure 16. 2015 Extractions Reported by Crop Type and Subarea.



2015	Berries (Net Acres)	Field (Net Acres)	Forage (Net Acres)	Grapes (Net Acres)	Nursery (Net Acres)	Other (Net Acres)	Trees (Net Acres)	Vegetables (Net Acres)
Pressure	2,558	11.0	37.0	1,491	-	-	335	33,080
East Side	4,224	23.4	3	2,957	691	456	20.5	23,895
Forebay	0.5	197	59.0	19,818	-	299	1,083	31,771
Upper Valley	-	225	168	21,365	-	-	372	25,447

Figure 17. 2015 Net Acres Reported by Crop Type and Subarea.



2015	Berries (AF/Acre)	Field (AF/Acre)	Forage (AF/Acre)	Grapes (AF/Acre)	Nursery (AF/Acre)	Other (AF/Acre)	Trees (AF/Acre)	Vegetables (AF/Acre)
Pressure	2.6	2.0	0.2	1.1	-	-	1.6	2.9
East Side	2.7	2.2	15.4	1.1	4.0	1.5	0.7	2.9
Forebay	4.6	2.5	2.8	1.4	-	3.4	2.1	3.6
Upper Valley	-	2.9	1.0	1.3	-	-	2.2	3.8

Figure 18. 2015 Acre-Feet/Acre by Crop Type and Subarea.

Urban Water Conservation – Data Summary

Since 1996, the Agency has collected data on the Urban Water Conservation Plan program. Tables 8 and 9 show the top ten Best Management Practices (BMPs) for 2016, as a percentage of total acreage reported for “large” water systems (200 or more customer connections), and “small” water systems (between 15 and 199 customer connections). Tables 10 and 11, and figures 19 and 20 give the reported Water Use per Connection for different Connection Classes for both “large” and “small” water systems.

Table 8. Top Ten BMPs – Large Water Systems.

Top Ten BMPs Implemented for Large Water Systems	2016
Advise customers when it appears possible that leaks exist on customer’s side of water meter	100%
Enforcement and support of water conserving plumbing fixture standards, including requirement for ultra low flush toilets in all new construction	100%
Implement requirements that all new connections be metered and billed by volume of use	100%
Provide conservation training, information, and incentives necessary to encourage use of conservation practices	100%
Offer free interior and exterior water audits to identify water conservation opportunities	99%
Perform distribution system leak detection and repair whenever the audit reveals that it would be cost effective	98%
Provide speakers to community groups and media	99%
Use paid and public service advertising	99%
Identify irrigators of large landscapes (3 acres or more) and offer landscape audits to determine conservation opportunities	96%
Provide individual historical water use information on water bills	96%

Table 9. Top Ten BMPs – Small Water Systems.

Top Ten BMPs Implemented for Small Water Systems	2016
Advise customers when it appears possible that leaks exist on customer’s side of water meter	100%
Implement requirements that all new connections be metered and billed by volume of use	100%
Perform distribution system leak detection and repair whenever the audit reveals that it would be cost effective	98%
Provide individual historical water use information on water bills	96%
Provide guidelines, information, and/or incentives for installation of more efficient landscapes and water-saving practices	95%
Support of State/Federal legislation prohibiting sale of toilets using more than 1.6 gallons per flush	94%
Provide conservation information in bill inserts	92%
Encourage and promote the elimination of non-conserving pricing and adoption of conservation pricing policies	91%
Implementation of conservation pricing policies	91%
Complete an audit of water distribution system at least every three years as prescribed by American Water Works Association	90%

Table 10. Water Use per Connection – Small Water Systems (2015-2016).

Connection Class For Small Water Systems	2015 - Water Use per Connection (AF)	2016 - Water Use per Connection (AF)
Single-Family Residential	0.504	0.416
Multi-Family Residential	0.573	0.603
Commercial/Institutional	1.429	0.963
Industrial	4.795	5.001
Landscape Irrigation	1.927	1.945
Other	1.077	1.130

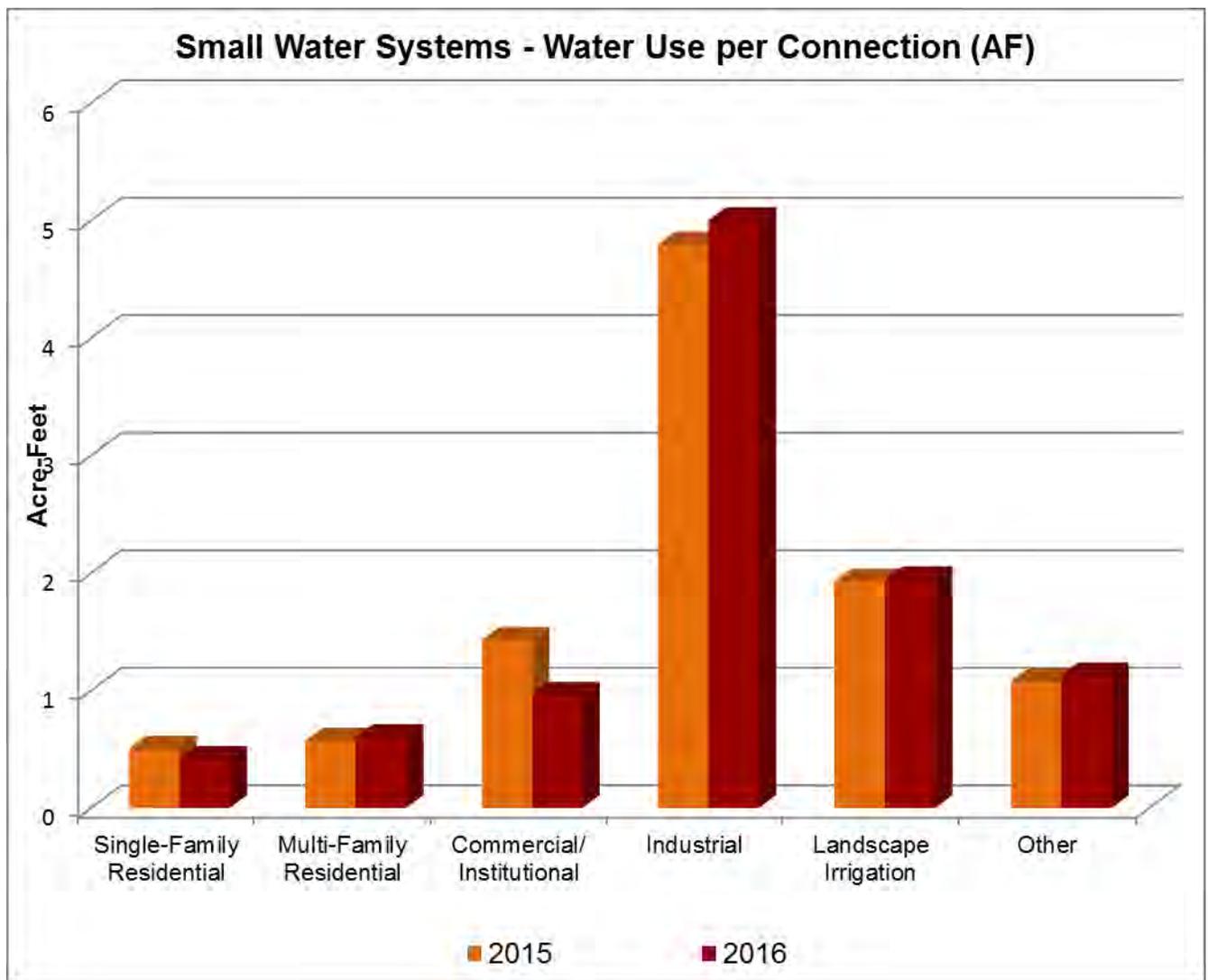


Figure 19. Urban Water Use per Connection – For Small Water Systems

Table 11. Water Use per Connection – Large Water Systems (2015-2016).

Connection Class For Large Water Systems	2015 - Water Use per Connection (AF)	2016 - Water Use per Connection (AF)
Single-Family Residential	0.372	0.314
Multi-Family Residential	1.025	1.296
Commercial/Institutional	2.997	0.965
Industrial	10.928	3.910
Landscape Irrigation	1.956	4.828
Other	12.574	15.591

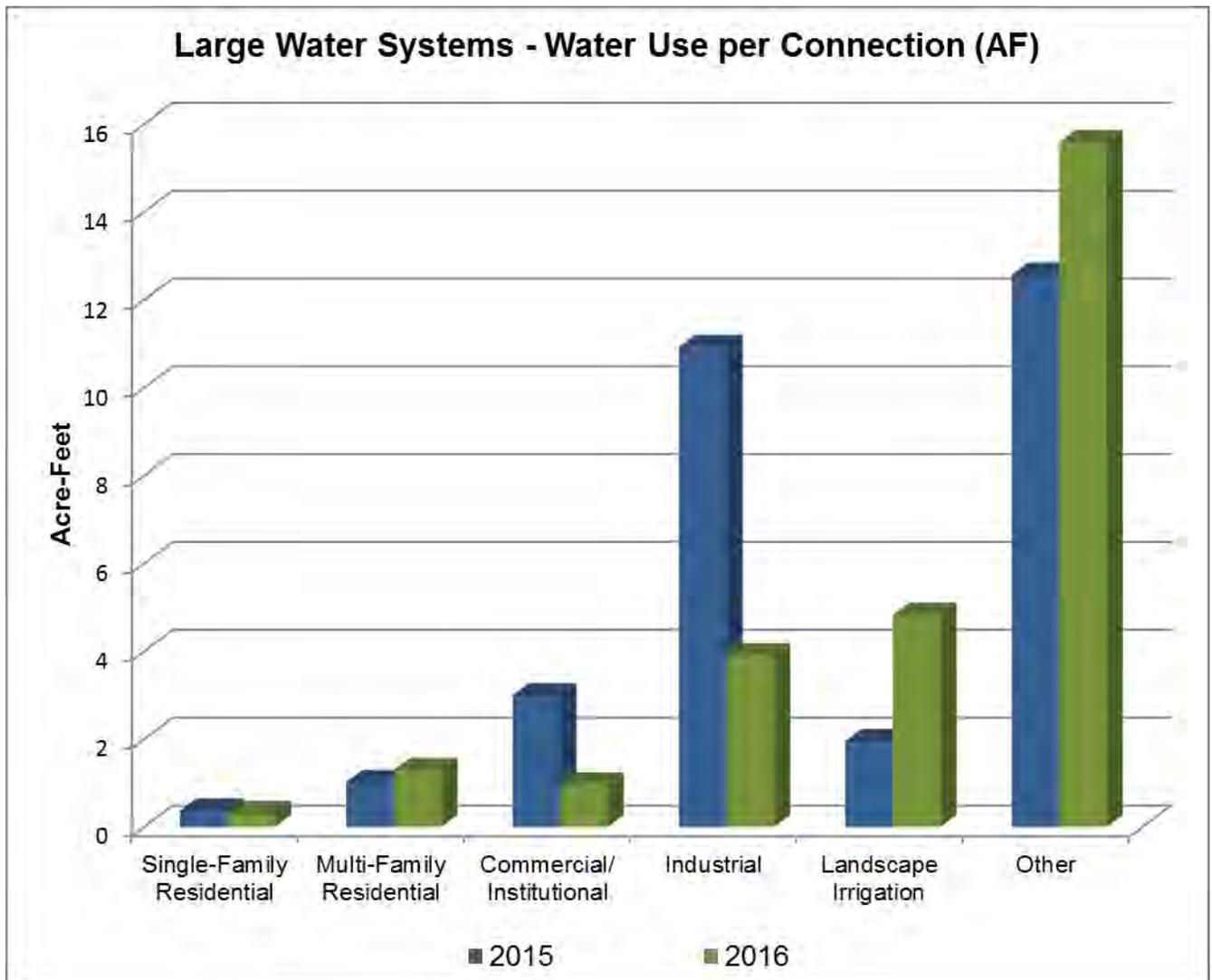


Figure 20. Urban Water Use per Connection – For Large Water Systems

**Monterey County
Board of Supervisors**

Luis Alejo	District #1
John M. Phillips	District #2
Simón Salinas	District #3
Jane Parker	District #4
Mary Adams, Chair	District #5

**Monterey County Water Resources Agency
Board of Directors**

Mark Gonzalez	District #1
Mike Scattini	District #2
Richard Ortiz, Vice-Chair	District #3
Deidre Sullivan	District #4
Ken Ekelund	District #5
Glen Dupree	Grower-Shipper Association
Claude Hoover	Monterey County Farm Bureau
David Hart, Chair	Agricultural Advisory Committee
John Huerta	City Select Committee

**Monterey County Water Resources Agency
Executive Management**

David Chardavoyne, General Manager
Robert Johnson, Deputy General Manager, Chief of Water Resources Planning and Management
Brent Buche, Deputy General Manager, Chief of Operations and Maintenance
Howard Franklin, Senior Hydrologist
Cathy Paladini, Finance Manager

Groundwater Extraction Summary Report Team

Tamara Voss, Associate Hydrologist
Teresa Campa, Engineering Aide II

For more information, contact:

Monterey County Water Resources Agency

893 Blanco Circle, Salinas

Mailing address:

P.O. Box 930, Salinas, CA 93902-0930

831.755.4860

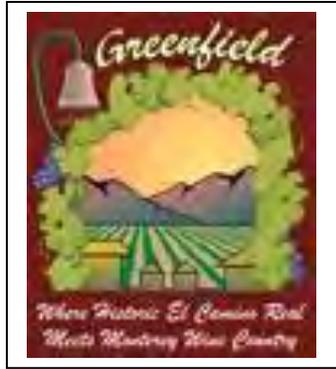
831.424.7935 (fax)

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APPENDIX E

City of Greenfield Water Shortage Contingency Plan



City of Greenfield

Water Shortage Contingency Plan



Prepared by
Arturo Felix
Utility Manager

**CITY OF GREENFIELD
RESOLUTION NO. 2014-50**

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF GREENFIELD
APPROVING THE CITY OF GREENFIELD URBAN WATER SHORTAGE CONTINGENCY
PLAN AS REQUIRED BY THE STATE WATER CODE**

WHEREAS, the California Legislature enacted Assembly Bill 11X in 1991 mandating that every urban water supplier providing municipal water directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre feet of water annually develop an Urban Water Shortage Contingency Plan (Contingency Plan); and

WHEREAS, the Water Shortage Contingency Plan, as outlined in Exhibit "A" was developed in compliance with California Water Code Section 10632. The plan includes five water conservation stages - from voluntary water conservation actions for water shortages of less than 10% to mandatory restrictions for critical water shortage emergencies of more than 50%.

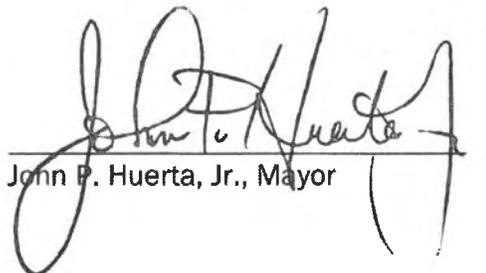
NOW, THEREFORE, BE IT RESOLVED that with the adoption of the Water Shortage Contingency Plan; the City of Greenfield is in compliance with California Water Code section 10632.

PASSED AND ADOPTED by the City Council of the City of Greenfield at a regular meeting duly held on the 22nd day of July 2014, by the following vote:

AYES, and in favor thereof, Councilmembers: Mayor Huerta, Mayor Pro-tem Hurley, Councilmembers Rodriguez and Walker

NOES, Councilmembers: None

ABSENT, Councilmembers: Councilmember Moreno


John P. Huerta, Jr., Mayor

Attest:


Ann F. Rathbun, City Clerk

This Water shortage Contingency Plan is developed in compliance with California Water Code Section 10632. Requirements of subsections (A)-(I) are identified below and required elements and information.

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 that are applicable to each stage.

(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.

(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.

(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.

(5) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.

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

(7) An analysis of the impacts of each of the actions and conditions described in paragraphs 1 through 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.

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

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

(b) Commencing with the urban water management plan update due December 31, 2015, 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.

1. General Description of System:

The City currently operates from three (3) wells varying in depth and two (2) water tanks. In 2012 these wells supplied 622,809,000 gallons of water (1905.2 Acre Feet) & in 2013 these wells produced 641,062,000 gallons of water (1967.3 ac-ft.) for Greenfield's residents. This was a 3% increase in water for 2013 from 2012; these wells supplied our residents with water for personal and commercial use.

The Oak Avenue Booster Station consists of (2) wells, # 1 and wells # 6 are located on 14th Street and Cherry Ave. on the northwest of town, The water is treated with (12.5%) sodium hypochlorite, upstream of the well meter; They supply about 2500 gpm. of water to a one million gallon storage tank and booster pump station located on Oak Avenue and 13th Street. Water is then pumped into the distribution system by four (4) booster pumps @ 47 psi.

The Corporation Booster Station is located behind the Corporation Yard located at Walnut Avenue and Tenth Street consisting of Well #7 pumps about 1800 gpm to a 1 ½ million gallon tank treated with (12.5%) sodium hypochlorite, upstream of the well meter. The water is then pumped into the distribution system by four (4) pumps @ 55 psi (It joins the distribution system on tenth and walnut Avenue).

The water system supplies water to about 3300 connections and 17300 residences through a maze of water lines ranging from 4" to 16" lines

2. Introduction and Background

This Water shortage Contingency Plan is developed in compliance with California Water Code Section 10632. Requirements of subsections (A)-(I) are identified below and required elements and information.

The City of Greenfield obtains its municipal potable water supply from the Central Salinas Valley Groundwater Basin (SVGB) – Fore bay Aquifer Sub basin occupies the central portion of the Salinas Valley and extends from the town of Gonzales in the north to approximately three miles south of Greenfield (see Fig. 1)



Fig. 1 Salinas Valley groundwater basin and hydrologic sub-areas

Infiltration in the Salinas River channel is the principal source of groundwater recharge for the SVGB. The recharge area is generally believed to end at a point between Chualar and the City of Salinas. Both natural runoff and conservation releases from Nacimiento and San Antonio Reservoirs contribute to the flow in the Salinas River. Infiltration from smaller tributaries that drain the highland areas also provides recharge to the groundwater basin. The down –valley movement of this subsurface water is essential to the containment of saltwater intrusion into the Pressure sub-area. Higher elevations tend to have little potential for groundwater recharge due to both shallow or non-existent soils and steep slopes.

Groundwater consumption in the Salinas Valley has increased over time as the amount of croplands under irrigation has continued to increase annually. Continued residential, commercial and industrial development has also increased groundwater consumption. Agriculture continues to dominate, representing at least 90% of the area's water consumption. In some parts of the basin (although not the sub-area that the City is located in), agricultural and urban consumers are now using more water than is recharged annually, resulting in a groundwater overdraft

To help combat this overdraft the SVGB the City is joining the Water Awareness Committee of Monterey County (WAC). Through the WAC, representatives from several agencies throughout Monterey County work together coordinating conservation and other water awareness efforts include educational programs, information booths for special events and public understanding of Monterey County water challenges and opportunities.

California Water Code Section 10632© 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.

The City of Greenfield will updating its Emergency Response Plan for emergency and disaster occurrences with guidelines and agreements for cooperative efforts with other State and local agencies, as required by the California Department of Public Health. This Plan contains actions the City would initiate in the event of a catastrophic reduction in its water supply.

3. Stage action

California Water Code Section 10632(a) 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.

The City of Greenfield developed a five-stage Water Conservation Plan that includes two voluntary and three mandatory stages. Table 1 generally describes the various stages. Specific water supply conditions applicable to each stage, referred to as “triggering mechanisms” herein, are discussed in the next section.

Table 1 five, Stages to Address Water Supply Shortages

<u>Stage</u>	<u>Demand Reduction Goal</u>	<u>Type Program</u>
Stage 1	0%-10% reduction voluntary	Water shortage alert
Stage 2	10%-15% reduction voluntary	Water shortage warning
Stage 3	25%-35% reduction mandatory	Emergency Water shortage
Stage 4	35%-50% reduction mandatory	Sever water shortage emergency
Stage 5	50%+ reduction mandatory	Critical water shortage emergency

Priorities for use of available water, based on California Water Code Chapter 3 are:

1. Health and Safety – interior residential and fire fighting
2. Commercial, Industrial, and Governmental – maintain jobs & economic base
3. Existing landscaping – especially trees and shrubs
4. New demand – projects without permits when shortage declared

California Water Code Section 10632(b) 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.

This requirement is oriented toward water supply systems that are primarily supplied via surface waters and therefore can be directly affected by short-term fluctuations in hydrology i.e., drought conditions. The City of Greenfield’s total current water supply is produced through groundwater pumping from the large SVGB. City of Greenfield water supply availability from this basin has not historically varied due to short-term hydrological conditions. The minimum water supply available within the driest three-year

sequence is expected to match demands as discussed in the **Urban Water Management Plan**.

The SVGB is currently the most important source of water for the City of Greenfield. In 2013, the City groundwater withdrawals of 641,062,000 gallons of water (1967.3 ac-ft.) accounted for less than one percent (1%) of the estimated basin-wide annual extractions of roughly 550,000 + acre-feet. Given this relatively small percentage, the City of Greenfield's conservation and contingency management activities can play only a small part within the SVGB. The foremost concern in developing appropriate triggers is achieving the maximum practical protection of an adequate long-term water supply of acceptable quality for City of Greenfield customers. To that end, triggering mechanisms should be tied to factors that, directly or indirectly, have the greatest potential effect on the quality and quantity of available ground water.

The four general types of threats could cause the City of Greenfield to experience water shortages:

1. Unanticipated catastrophic system failure due to earthquake, terrorist attack or sudden contamination of the water supply, or
2. Chronic system shortage due to lack of maintenance on the water supply wells such that those wells would have to be removed from service.
3. Water table dropping below the pumping level due to a severe drought condition, production dropping below a certain percentage of normal use.
4. The nitrate Maximum Contaminate Level being exceeded.

In case of a catastrophic failure, the City of Greenfield would assess the nature and extent of the failure, and the City Manager would identify the appropriate Conservation Stage in accordance with the City's Emergency Response Plan, including enacting emergency ordinances as may be required by the City Council of Greenfield.

The chronic system threat to the City's present water supplies is Nitrate Contamination, which has occurred along the Salinas Valley in response to historic agriculture activities of fertilization of fields. Contamination in the upper aquifer from volatile organic compounds (VOCs) has also affected the City of Greenfield wells and could pose additional problems.

Although nitrate contamination has not yet affected City of Greenfield deep zones of the SVGB (which is the source of supply for Greenfield's Wells #1, #6, #7), it is possible that continued extractions in the deeper aquifers could ultimately lead to contamination of these water supplies by nitrates. Greenfield monitors the level of nitrate levels and plans to construct and develop alternative or treatment of water sources that would need to be protected from high nitrate levels.

Consequently, the City of Greenfield has structured this Water Shortage Contingency Plan along with the city’s Mandatory Water Conservation Regulations, Chapter 13.09 with the primary goal of reducing water supply demands to allow time for alternative water supply measures, including treatment or drilling of alternate wells in areas unaffected by contamination or falling water level. A specific triggering mechanism for various levels of conservation is tied to concentrations of nitrates or water levels in the City of Greenfield wells.

TRIGGERING MECHANISMS FOR CONSERVATION STAGES

These Triggering mechanisms shall be interpreted as guidelines and are summarized in Table 2. The City manager and/or City Council may impose any of the following conservation stages based upon facts and circumstances which may not have been otherwise anticipated in this plan.

Table 2 Conservation Level Triggering Mechanisms

Conservation Stage And Shortage Level	Triggering Mechanism
<p>Stage One 0 – 10% Voluntary</p>	<p>1. System malfunction or water production resulting in up to 5% shortage</p> <p>2. Increase in Nitrates and/or VOC which do not threaten to exceed drinking water quality standard</p>
<p>Stage Two 10% – 25% Voluntary</p>	<p>1. System malfunction or water production resulting in 5%-15% shortage</p> <p>2. 2) Increase in Nitrates and/ or VOC which may threaten to exceed drinking water quality standard</p>
<p>Stage Three 25% – 35% Mandatory</p>	<p>1. System malfunction and/or water production resulting in 15%-25% shortage</p> <p>2. Increase in Nitrates and / VOC which are expected to exceed drinking water quality standard</p>
<p>Stage Four 35% – 50% Mandatory</p>	<p>1. System malfunction and /or production resulting in 25%- 35% shortage</p> <p>2. Increase in Nitrates and/or VOC which are expected to exceed drinking water quality standard</p>
<p>Stage Five Greater than 50% Mandatory</p>	<p>1. System malfunction resulting in greater than 35%-50% shortage</p> <p>2. Increase in Nitrates and/or VOC which are expected to exceed drinking water quality standard</p>

4. Conservation Requirements and Appeal Procedures

The following are the City's conservation requirements by stage and the variance procedures. These requirements and procedures are adopted as part of the City's Water Shortage Contingency Plan.

Stage 1: Up to 10% - Voluntary – Water Shortage Alert Conservation

The City shall:

- Voluntary water conservation requested of all customers Adhere to Chapter 13.09 Mandatory Water Conservation Regulations Appendix A
- Landscape irrigation restricted to early morning and evening
- Non-essential water uses banned
- Shutoff nozzles on all hoses used for any purpose
- Encourage conversion to drip, low volume irrigation
- Notify all customers of the water shortage
- Provide technical information to customers on ways to improve water use efficiency
- Campaign to remind consumers of the need to save water are to restrict all landscape irrigation to certain hours of the day and to prohibit various uses deemed to be non-essential.

Stage 2: 10% to 25% - Voluntary – Water Shortage Warning Conservation

In addition to the actions listed in stage 1, The City of Greenfield shall call for voluntary reductions of up to 25% for each connection based on the average use a base period proposed by the Utilities Division and adopted by the City Council.

- Involves expanding mandatory water restrictions and limiting landscape irrigation to specified days and times.
- Large landscape users would be required to adhere to water budgets.
- Intensify public information campaign
- Send direct notices to all customers
- Optimize existing water sources;
- intensify system leak detection and repair;
- Increase water waste patrol
- Continue all Stage 1 measures
- Landscape irrigation restricted to designated watering days and times
- Require large landscapes to adhere to water budgets
- Prohibit exterior washing of structures
- Require large users to audit premises and repair leaks

Stage 3: 25% to 35% - Mandatory- Emergency Water shortage Conservation

Stage 3 water shortage constitutes an emergency situation. Conservation measures may be called for as a result of malfunction of all or portions of the water system that reduces supplies by greater than 25% on a daily, peak seasonal or annual basis. *It also may be called due to prolonged drought conditions and a need to focus public attention on water conservation methods.*

In addition to the actions listed in Stage 1 and 2, the City of Greenfield shall establish mandatory annual allotments for each connection based on the average use during a base period proposed by the Utilities Division and adopted by the City Council. When stage 3 use reductions become necessary, administration and enforcement of water conservation rules becomes the major focus of the Utilities Division. If necessary, additional temporary personnel may be hired and special meetings of the Utilities Division and/or City Council may be scheduled

Stage	Type of Use	Restriction
3	Landscaping Irrigation for Existing Landscapes, including Public Parks	Landscape watering with recycled water may continue without restriction. Landscape watering with potable water shall be subject to the following limits: <ol style="list-style-type: none">1) Landscape watering using sprinkler or irrigation systems is permitted only two days per week. Address ending in even numbers (0, 2, 4, 6, 8,) may water on Mondays and Thursdays. Addresses ending in odd numbers (1, 3, 5, 7, and 9) may water on Tuesdays and Fridays. If there is no street address, or if more than one street address is associated with a contiguous property, the irrigation days are Wednesday and Saturday.2) Manual landscape watering with a soaker hose, handheld hose or watering can/bucket is allowed on any day.
3	Landscape Irrigation for New Landscapes, including Public Parks	Landscape watering with recycled water may continue without restriction. Landscape watering with potable water shall be subject to the following limits: <ol style="list-style-type: none">1) Landscape watering is permitted to maintain adequate growth on newly installed landscapes, for a period generally up to five (5) weeks. Property owners must notify the Utilities Division of the address where new landscape is installed and the date of installation.

		<p>2) Following the initial establishment period, landscape watering using a sprinkler or irrigation system is permitted only on days associated with the current conservation stage in effect.</p>
3	Golf Courses, Athletic Fields	<p>Landscape watering with recycled water may continue without restriction.</p> <p>Landscape watering with potable water shall be subject to the following limits:</p> <ol style="list-style-type: none"> 1) All landscape out-of-play areas such as may be found around a clubhouse or entryway shall follow the general landscape irrigation restrictions. 2) All in-play areas may be irrigated during the standard watering hours (before 10:00 a.m. or after 5:00 p.m.). 3) Course operators shall implement a ten (10) percent reduction in irrigation water use.
3	Hotels, motels and bed and breakfasts	Hotels, motels and B&B's must offer and clearly notify guests of a "limited linen/towel exchange" program.
3	Swimming pools, hot tubs	Initially filling new and existing swimming pools prohibited. Draining and refilling existing swimming pools permitted only if repairing a pool leak or repairing, maintaining or replacing a pool component that has become hazardous. All pools and tubs shall be covered when not in use to reduce evaporation.
3	Industrial and Commercial	<p>Reduction of water use by any means is encouraged. Compliance with mandatory demand reduction measures is required for outdoor water uses including landscape irrigation, swimming pools, and vehicle washing.</p> <p>Use of water from fire Hydrants is prohibited, except by city and/or fire personnel.</p>
3	Vehicle and Equipment Washing	<p>Non-commercial washing of vehicles and mobile equipment (e.g., washing a vehicle at a residence) is permitted only on assigned landscape watering days during landscape watering hours (before 10:00 a.m. or after 5:00 p.m.).</p> <p>Fleet managers are encouraged to only wash those vehicles as is necessary for health and safety.</p>
3	Heavy Construction	The use of potable water for dust control shall be reduced to the greatest extent possible.

Stage 4: 35% to 50% - Mandatory- Severe Water Shortage Emergency

Stage 4 conservation measures may be called for as a result of malfunction of all or portions of the water system that reduces supplies by greater than 35% on a daily, peak seasonal or annual basis. It also may be called due to prolonged drought conditions and a need to focus public attention on water conservation.

Stage	Type Use	Restriction
4	Landscape Irrigation for Existing Landscapes including Public Parks	<p>Landscape watering with recycled water may continue without restriction.</p> <p>Landscape watering with potable water shall be subject to the following limits:</p> <ol style="list-style-type: none"> 1) Landscape watering using sprinkler or irrigation systems is permitted only one day per week. Addresses ending in numbers 0 or 1 may water on Mondays. Addresses ending in numbers 2 or 3 may water on Tuesdays. Addresses ending in numbers 4 or 5 may water on Wednesdays. Addresses ending in numbers 6 or 7 may water on Thursdays. Addresses ending in numbers 8 or 9 may water on Fridays. If there is no street address, or if more than one street address is associated with a contiguous property, the irrigation day is Wednesday. <p>Manual landscape watering with a soaker hose, handheld hose or watering can/bucket is allowed on any day.</p>
4	Landscape Irrigation for New Landscapes, including Public Parks	<p>Landscape watering with recycled water may continue without restriction.</p> <p>Landscape watering with potable water shall be subject to the following limits:</p> <ol style="list-style-type: none"> 1) Landscape watering is permitted three (3) days a week to maintain adequate growth on newly installed landscapes, for a period generally up to five (5) weeks. Watering days for new landscapes are Tuesday, Thursday and Saturday. Property owners must notify the Utilities Division of the address where new landscape is installed and the date of installation. 2) Following the initial establishment period, landscape watering using a sprinkler or irrigation system is permitted only on days associated with the current conservation stage in effect.

4	Golf Courses, Athletic Fields	Landscape watering with recycled water may continue without restriction. Landscape watering with potable water shall be subject to the following limits:
4	Golf Courses, Athletic Fields	<ol style="list-style-type: none"> 1) All landscape out-of-play areas such as may be found around a clubhouse or entryway shall follow the general landscape irrigation restrictions. 2) All in-play areas may be irrigated during the standard watering hours (before 10:00 a.m. or after 5:00 p.m.). Course operators shall implement a twenty (20) percent reduction in irrigation water use.
4	Hotels, motels and bed and breakfasts	Hotels, motels and B&B's must limit linen/towel exchange to once every two (2) nights or for the entire stay, whichever is shorter, except for health and safety program.
4	Swimming pools, hot tubs	Initially filling new and existing swimming pools prohibited. Draining and refilling existing swimming pools permitted only if repairing a pool leak or repairing, maintaining or replacing a pool component that has become hazardous. All pools and tubs shall be covered when not in use to reduce evaporation.
4	Vehicle and Equipment Washing	<p>Non-commercial washing of vehicles and mobile equipment (e.g., washing a vehicle at a residence) is permitted only on assigned landscape watering days during landscape watering hours (before 10:00 a.m. or after 5:00 p.m.).</p> <p>Fleet managers are encouraged to only wash those vehicles as is necessary for health and safety.</p>
4	Industrial and Commercial	<p>Reduction of water use by any means is encouraged. The City Council may establish mandatory use reduction targets, if needed.</p> <p>Compliance with mandatory demand reduction measures is required for outdoor water uses including landscape irrigation, swimming pools, and vehicle washing.</p> <p>Use of water from fire Hydrants is prohibited, except by city and/or fire personnel.</p>
4	Heavy Construction	The use of potable water for dust control shall be reduced to the greatest extent possible.

Stage 5: >50% - Mandatory- Critical Water Shortage Emergency

Appropriate 50% water shortage allotments shall be calculated and notice to customers. Appropriate administration and enforcement of this stringent program shall be the highest priority of the Utilities Division activity. All resources of the City of Greenfield Utilities Division will be directed toward improvement and increase of water supply to the system. Water rates may be further increased by the City Council.

The following water use restrictions shall be imposed:

Stage	Type Use	Restriction
5	Landscape Irrigation for Existing Landscapes including Public Parks	Landscape watering with recycled water may continue without restriction. Landscape watering with potable water is prohibited
5	Landscape Irrigation for New Landscapes, including Public Parks	Landscape watering with recycled water may continue without restriction. The installation of new landscapes irrigated with potable water is prohibited during Conservation stage 5. New landscapes installed prior to declaration of Conservation Stage 5 may water two (2) days a week to maintain adequate growth on newly installed landscapes, for the remainder of the initial five (5) week establishment period. Watering days for new landscapes are Tuesday and Friday. Property owners must notify the City of the address where new landscape is installed and the date of installation.
5	Golf Courses, Athletic Fields	Landscape watering with recycled water may continue without restriction. Landscape watering with potable water shall be subject to the following limits: <ol style="list-style-type: none"> 1) All landscape out-of-play areas such as may be found around a clubhouse or entryway shall follow the general landscape irrigation restrictions. 2) All in-play areas may be irrigated during the standard watering hours (before 10:00 a.m. or after 5:00 p.m.). Course operators shall implement a thirty (30) percent reduction in irrigation water use.
5	Hotels, motels and bed and breakfasts	Hotels, motels and B&B's must limit linen/towel exchange to once every three (3) nights or for the entire stay, whichever is

		shorter, except for health and safety program.
5	Swimming pools, hot tubs	Filling new and existing swimming pools and/or draining and refilling existing swimming pools is prohibited. All pools and tubs shall be covered when not in use to reduce evaporation. Contact Utilities Division staff if an existing swimming pool must be repaired and refilled during Conservation Stage 5.
5	Vehicle and Equipment Washing	Non-commercial washing of vehicles and mobile equipment is prohibited. Only commercial facilities with water recycling systems may be used.
5	Industrial and Commercial	Reduction of water use by any means is encouraged. The City Council may establish mandatory use reduction targets, if needed. Compliance with mandatory demand reduction measures is required for outdoor water uses including landscape irrigation, swimming pools, and vehicle washing. Use of water from fire Hydrants is prohibited, except by city and/or fire personnel.
5	Heavy Construction	The use of potable water for dust control shall be reduced to the greatest extent possible. The City may establish mandatory construction water budgets, if needed.

Variations Procedure

1. Any person who wishes to request a variance a customer classification or allotment shall do so in writing by using the forms provided by the City of Greenfield.
2. Variations will be reviewed by the Planning Director and staff. Sites visits may be scheduled if required.
3. A condition of granting a variance shall be that all plumbing fixtures or irrigation systems be replaced or modified for maximum water conservation.
4. Examples of variations that may be considered are as follows:
 - a. Substantial medical requirements.
 - b. Commercial/Industrial/Institutional accounts where any additional water supply reductions will result in unemployment or inappropriate hardship, after confirmation by the City Manager that the account has instituted all applicable water efficiency improvements.
 - c. The City Manager may grant a temporary variance of up to one year to come into compliance with the terms in Chapter 13.08.030 of the City Code.
5. The Planning Director shall refer all variations to the City Manager. The City Manager may refer variations to the City of Greenfield City Council.

6. If the City Manager and the applicant are unable to reach accord, then the variance shall be heard by the City Council, who will make the final determination.
7. All variances shall be reported monthly to the City Council as a part of the Water Supply Report.
- 8.

5. Mandatory Prohibitions on Water Use

California Water Code Section 10632(d). 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. Section 10632(e) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.

The City of Greenfield adopted a “Mandatory Water Conservation Regulations” Municipal Code, Chapter 13.09 in 1995, which prohibits water waste and promotes water conservation. Section 13.09.040, Mandatory Restrictions on Water Waste, details the applicable prohibitions of use. These prohibitions are in force at all times. Additional water use reduction methods available to water users or City of Greenfield to adopt in order to comply with use reductions during the more restrictive stages of water shortages (Stages 4 and 5) include, but are not limited to, the following:

- a) Elimination of turf irrigation with potable supplies;
- b) Restriction of landscape watering to shrubs and trees by hand or drip irrigation only;
- c) Elimination of vehicle washing except in car washes that have recirculation systems;
- d) Prohibition on filling or topping off of swimming pools where damage to pumping equipment will not result;
- e) Elimination of water served in food service establishments unless requested;
- f) Elimination of the issuance of construction meters;
- g) Shut-off of dedicated landscape irrigation meters; and
- h) Moratorium on provision of new supply meters.

If water use reductions called for in Stages 3-5 are not achieved, the City of Greenfield may amend this Water Shortage Contingency Plan to make any of the above available conservation tactics mandatory.

6. Penalties or Charges for Excessive Use

California Water Code Section 10632(f) Penalties or charges for excessive use.

Chapter 13.09.050 of the Municipal Code provides for a system violations and warnings. Violation of provisions of this Water Shortage Contingency Plan shall be enforced under Chapter 13.09.060 of the Greenfield Municipal Code:

- A. Each violation of this chapter is an infraction.
- B. Any violation that occurs or continues from one day to the next shall be deemed a separate violation, for each day during which such violation occurs or continues to occur.
- C. The fine for a first violation of this chapter shall be fifty dollars (\$50.00). The fine for a second violation and each subsequent violation of this chapter within a period of twelve (12) months, regardless of the specific section or subsection violated, shall be one hundred dollars (\$100.00).
- D.

7. Revenue and Expenditure Impacts

California Water Code Section 10632(g) – An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), 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

Enforcement of the Water Shortage Contingency Plan is assumed to be covered by enhanced revenues from application of excess use charges and penalties. City of Greenfield’s water reserves may be used temporarily should revenues remain below expectations. Greenfield’s rate structure is based upon adopted rate ranges and allows for modification of rates by due process. Revenue impacts from water sales losses are estimated as follows, based upon Tier rates.

Table 3: Potential Revenue Impacts of Implementation of WSCP

	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
Assumed Reduction	10 Percent	20 Percent	30 Percent	40 Percent	50 Percent
Water Sales Loss					
Revenue Source: Pumping savings at \$135.00/af					
Net Revenue Reduction					
Percent of Total Annual Water System Revenue					

8. Water Shortage Contingency Plan Implementation

California Water Code Section 10632(h) a draft water shortage contingency resolution or ordinance.

The City of Greenfield City Council adopted the Water Shortage Contingency Plan in Resolution No. 2014-? which enables implementation of the Plan upon advice of staff based in part on the triggering mechanisms discussed herein. The resolution is attached as Appendix A to this Plan.

9. Water Use Monitoring Procedures

California Water Code Section 10632(I) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency plan.

Normal Monitoring Procedure:

In normal water supply conditions, production, production figures are recorded daily by UD personnel. Totals are reported monthly to the Utility Manager. Production figures are reported in the Annual Report to the Drinking Water Program, which is submitted to California Department of Public Health each year.

Stage 1 and 2 Water Shortages:

During a Stage 1 or 2 water shortage, daily production figures will be reported to the Utility Manager. The Utility Manager compares the weekly production to the target weekly production to verify that the reduction goal is being met. Monthly reports are forwarded to the Community Service Director, The City Manager and the City Council. If reductions goals are not met, the City Manager may notify the City Council so that corrective action can be taken.

Stage 3 and 4 Water Shortages:

During a Stage 3 or 4 water shortages, the procedure listed above will be followed, with the addition of a daily production report to the Community Service Director and weekly reports to the City Manager and City Council. Special meetings may be called for administration of the Water Shortage Contingency Plan.

Stage 5 Water Shortages:

During a Stage 5 shortage, production figures will be reported to the Utility Manager hourly, and to the Community Service Director and the City Manager daily. Reports will also be provided to the City Manager, City Council, the Monterey County Office of Emergency Services,



APPENDIX F

Chapter 13.09

Mandatory Water Conservation Regulations

Chapter 13.09 MANDATORY WATER CONSERVATION REGULATIONS

Sections:

- [13.09.010](#) Purpose.
- [13.09.020](#) Definitions.
- [13.09.030](#) Enforcement.
- [13.09.040](#) Mandatory restrictions on water waste.
- [13.09.050](#) Warnings.
- [13.09.060](#) Penalties.
- [13.09.070](#) Nuisances; abatement; injunctive relief.
- [13.09.080](#) Variances.
- [13.09.090](#) Appeals.
- [13.09.100](#) Revenue received from enforcement.
- [13.09.110](#) Severability.

13.09.010 Purpose.

The purpose of this Chapter is to increase public awareness of the need for water conservation; and to provide regulations and restrictions on the delivery of water and the consumption within the City limits of water supplied for public use as will: 1) conserve the water supply for the greatest public benefit with particular regard to domestic use, sanitation, and fire protection, and 2) ensure compliance with water regulations of other governmental agencies of appropriate jurisdiction. (Ord. 389 §1, 1995).

13.09.020 Definitions.

- A. "Agency" means the Monterey County water resources agency.
- B. "Automatic shutoff nozzle" is a water release mechanism securely affixed to the end of a water hose that requires the person using the hose to apply and maintain the flow of water, and that shuts off immediately when the pressure is released.
- C. "Change of ownership" means a transfer of the right to beneficial use thereof, regardless of whether such transfer is voluntary, involuntary, or by operation of law, court order, grant, gift, devise, inheritance, trust, contract of sale, addition or deletion of an owner, property settlement, or by any other means.
- D. "Change of use" means a change from one use of a structure to another use that is identified as a different use under the zoning ordinance, title [17](#).
- E. "Water recirculating system" means a system approved by the city that recirculates water between hot water and cold water lines, so that substantially all the cold water standing in the pipes will be returned to the water heater and reheated before the faucet is turned on. The system may be turned on and off by a manually operated switch, by a timer-operated switch, or otherwise, or may be left permanently on.
- F. "New construction" means a completely new structure, a new addition to a previously existing structure, or the portion of a previously existing structure that is newly remodeled or renovated.
- G. "Noncompliant plumbing fixture" means any of the following:
 - 1. Any toilet manufactured to use more than 1.6 gallons of water per flush (gpf).
 - 2. Any urinal manufactured to use more than one gallon of water per flush (gpf).
 - 3. Any showerhead manufactured to have a flow capacity of more than two and one-half (2 1/2) gallons of water per minute (gpm).

4. Any interior faucet that emits more than 2.2 gallons of water per minute (gpm).

H. "Overdraft" means the condition of a ground water basin where the amount of water withdrawn by pumping exceeds the amount of water replenishing the basin over an extended period of time, or where the amount of water withdrawn by pumping results in an unacceptable degradation of ground water quality within the basin.

I. "Person" means any individual person and any firm, partnership, corporation, business entity, association, district, agency, city, county, and any other entity or organization.

J. A "shutoff nozzle" is a water release mechanism ("nozzle") securely affixed to the end of a water hose which enables the user of the hose to control the flow of water in the hose, including stopping the flow of water completely and securely, by a lever or mechanical device in the nozzle.

K. "Public works director" means the public works director of the city of Greenfield. (Ord. 507 §1(part), 2014: Ord. 389 §1, 1995).

13.09.030 Enforcement.

The Public Works Director and all officers and employees of the City, including all ex officio officers and employees, shall enforce all the provisions of this Chapter, by the issuance of citations, including warning citations, and taking all other necessary action, including bringing civil action to abate a nuisance as set forth herein, through the City Attorney's office. (Ord. 389 §1, 1995).

13.09.040 Mandatory restrictions on water waste.

A. Repair of Plumbing, Sprinkler and Irrigation Systems: Any person who is the owner, manager, or person responsible for the day-to-day operation of any premises shall initiate steps to repair any leaking, broken or defective water pipes, faucets, plumbing fixtures, other water service appliances, sprinklers, water or irrigation systems, or distribution systems within a reasonable time after such person learns of such leaks, breaks, or defects, and shall thereafter diligently and promptly pursue such repair work to completion. In any event, such action initiating steps for repair shall take place within seventy-two (72) hours after such person first learns of the problem, unless a variance is obtained from the city.

B. Washing of Vehicles: No person shall use a water hose to wash any car, truck, boat, trailer, bus, recreational vehicle, camper, aircraft, tractor, or any other vehicle, or any portion thereof, with potable water, unless the hose is equipped with an automatic shutoff nozzle.

C. Cleaning of Structures: No person shall use potable water through a hose to clean the exterior of any building or structure unless such hose is equipped with a shutoff nozzle.

D. Cleaning of Surfaces: No person shall use potable water through a hose to clean any sidewalk, driveway, roadway, parking lot, or any other outdoor paved or hard surfaced area, except where necessary to protect public health and safety. The use of a bucket is not prohibited at any time for cleaning food, grease, oil, or other stains or spillage from surfaces.

E. Water Spillage: No person shall cause, suffer, or permit water to spill into streets, curbs, or gutters. No person shall use any water in any manner which results in runoff beyond the immediate area of use, unless the contour of the premises is such that avoidance of some minimum spillage is impossible.

F. Swimming Pools and Spas: No person shall empty and refill a swimming pool or spa except to prevent or repair structural damage or to comply with public health regulations.

G. Fountains: No person shall use water to operate or maintain levels in decorative fountains, unless such water is recycled in the fountain.

H. Visitor-Serving Facilities: The owner and manager of each hotel, motel, restaurant, convention and other visitor-serving facility shall ensure that such facility displays, in places visible to all customers, placards or

decals approved by the agency, promoting public awareness of the need for water conservation and/or advising the public that waste of water is prohibited. "Quasi-public entities" include educational institutions, churches, recreational facilities open to the public, and other such entities designated by the superintendent of utilities. Placement of placards or decals by a quasi-public entity of a type not specifically mentioned in this chapter shall not be required unless the superintendent of utilities gives written notice to the entity that this chapter is applicable to the entity so notified and that placement of placards or decals is required.

I. Commercial Car Washes: No person in charge of the operation of any commercial car wash facility shall suffer or permit the washing of any boat, trailer, recreational vehicle, or other vehicle in such facility or on its premises, other than by the following methods:

1. Use of mechanical automatic car wash facilities utilizing water recycling equipment;
2. Use of a hose that operates on a timer for limited time periods and shuts off automatically at the expiration of the time period;
3. Use of a hose equipped with an automatic shutoff nozzle;
4. Use of bucket and hand washing.

J. Construction:

1. No potable water may be used for compaction or dust control purposes in construction activities where there is a reasonably available source of reclaimed or other subpotable water approved by Monterey County health department and appropriate for such use.
2. All hoses used in connection with any construction activity shall be equipped with a shutoff nozzle. When an automatic shutoff nozzle can be purchased or otherwise obtained for the size or type of hose in use, the nozzle shall be an automatic shutoff nozzle.

K. Use of Hydrants: No person, other than a member of the Greenfield fire department, the fire department of any other jurisdiction giving assistance to the Greenfield fire department in emergencies, or the city department of public works, may use water from a fire hydrant, without first obtaining a permit from the public works director of the city.

L. Leakage Detection and Repair Program: The public works director shall maintain in effect a distribution system leakage detection and repair program. This program shall be reviewed on an annual basis and a report analyzing the results of the program shall be prepared by the director and submitted to the city council.

M. New Construction:

1. In all new construction, all toilets shall be ultra low flow toilets with a maximum tank size or flush capacity of 1.28 gallons per flush (gpf).
2. All shower heads shall have a maximum flow capacity of two (2) gallons per minute (gpm).
3. All lavatory faucets shall have a maximum flow capacity of one and one-half (1 1/2) gpm.
4. All kitchen faucets shall have a maximum flow capacity of 1.8 gpm.
5. All hot water faucets that have more than ten feet (10') of pipe between the faucet and the hot water heater serving such faucet shall be equipped with a water recirculating system.
6. All new construction requiring a discretionary permit from the city shall apply xeriscape principles throughout the exterior landscape development associated with such new construction, including such techniques and materials as native or low water use plants and low precipitation sprinkler heads, bubblers, drip irrigation systems and timing devices.

N. Retrofitting Existing Hotels and Motels: All existing hotels and motels shall, within six (6) months following the effective date of the ordinance codified in this section, be retrofitted with shower heads with a maximum flow capacity of two (2) gpm.

O. Retrofitting upon Change of Ownership or Use:

1. All existing residential structures shall, at the time of change of ownership, be retrofitted, if not already so modified, with ultra low flow toilets with a maximum flush capacity of 1.28 gpf, shower heads with a maximum flow capacity of two (2) gpm, interior faucets, except kitchen faucets, with a maximum flow capacity of one and one-half (1 1/2) gpm, and kitchen faucets with a maximum flow capacity of 1.8 gpm.

2. All existing commercial and industrial structures, and hotels and motels, shall, at the time of change of ownership or change of use, be retrofitted, if not already so modified, with ultra low flow toilets with a maximum flush capacity of 1.28 gpf, shower heads with a maximum flow capacity of two (2) gpm, interior faucets, except kitchen faucets, with a maximum flow capacity of one and one-half (1 1/2) gpm, and kitchen faucets with a maximum flow capacity of 1.8 gpm.

P. Existing Single-Family Residential Real Property: On or before January 1, 2017, noncompliant plumbing fixtures in any single-family residential real property shall be replaced by the property owner with water-conserving plumbing fixtures.

Q. Existing Multifamily Residential Real Property: On or before January 1, 2019, noncompliant plumbing fixtures in any multifamily residential real property shall be replaced by the property owner with water-conserving plumbing fixtures.

R. Existing Commercial and Industrial Structures, and Hotels and Motels: On or before January 1, 2019, noncompliant plumbing fixtures in any commercial or industrial structure, or any hotel or motel, shall be replaced by the property owner with water-conserving plumbing fixtures.

S. Indiscriminate Use: No person shall cause, suffer, or permit the indiscriminate running of water not otherwise prohibited by the provisions set forth above which is wasteful and without reasonable purpose.

T. Use of Water to Irrigate: No person shall use water to irrigate lawns, landscape, or other turf areas which are not in accordance with local city and county ordinances.

U. Regulatory Compliance:

1. All persons shall comply with any other, additional, or supplementary regulations, restrictions, or prohibitions adopted by any federal, state, or county agency or regulatory authority under which compliance by the city is required.

2. The public works director shall develop and implement any programs, plans, directives, and regulations necessary for such compliance, including, but not limited to, any water shortage contingency plan or other plan or program adopted by the city pursuant to any federal, state, or county agency or regulatory authority requirement. (Ord. 507 §1(part), 2014: Ord. 389 §1, 1995).

13.09.050 Warnings.

In order to encourage cooperative efforts to achieve water conservation, it shall be the policy of the city to issue a written warning citation, when an alleged violation is first noted. Such warning shall include an explanation of the violation. The suspected violator will then be given an opportunity to correct the problem. However, if an infraction citation is issued and a prosecution commenced for the alleged violation, in no case shall proof of a violation depend upon the showing that a warning was previously given, nor shall failure to give a warning be a defense. (Ord. 507 §1(part), 2014: Ord. 389 §1, 1995).

13.09.060 Penalties.

A. Each violation of this chapter is an infraction.

B. Any violation that occurs or continues from one day to the next shall be deemed a separate violation, for each day during which such violation occurs or continues to occur.

C. The fine for a first violation of this chapter shall be fifty dollars (\$50.00). The fine for a second violation and each subsequent violation of this chapter within a period of twelve (12) months, regardless of the specific section or subsection violated, shall be one hundred dollars (\$100.00). (Ord. 507 §1(part), 2014: Ord. 389 §1, 1995).

13.09.070 Nuisances; abatement; injunctive relief.

A. Any violation of this Chapter is hereby declared to be a public nuisance.

B. The City or the Agency may summarily abate the public nuisance and the City Attorney may, upon order of the City Council, bring civil suit or other action to enjoin or abate the nuisance.

C. Any person who creates or maintains a public nuisance in violation of this Chapter shall, in any civil proceeding brought to abate a nuisance or to obtain injunctive relief, under this Chapter, be liable for the costs of abatement, including but not limited to the following:

1. Cost of investigation;
2. Costs of labor and parts to repair any affected water system or premises, to bring such water system or premises into compliance with this Chapter, or to install facilities necessary to assure compliance with this Chapter;
3. Court costs;
4. Attorneys fees;
5. Costs of monitoring compliance.

D. If any person causes, suffers, or permits a public nuisance to continue after written notice is given to such person by the City, directing such person to cease the nuisance, and such continuation goes beyond the time set for abatement in the notice, then such person shall be liable to the City for the following:

1. The costs of abatement set forth above;
2. Any other costs of enforcement imposed by the Court;
3. A civil penalty of fifty percent (50%) of those costs (C1 + C3) payable to the city. (Ord. 389 §1, 1995).

13.09.080 Variances.

A. Any person adversely affected by the restrictions of this Chapter may, at any time, apply in writing for a variance from the strict application of this Chapter. The application for the variance shall be filed with the City. The Public Works Director may, in his discretion, temporarily dispense with the requirement to file a written application, if he finds that an emergency condition exists requiring immediate action on the variance request.

B. The Public Works Director may grant a variance to the terms of this Chapter if he makes both of the following findings:

1. The strict application of the Chapter would create an undue hardship, or an emergency condition exists which requires that the variance be granted; and
2. Granting the variance will not cause a significant adverse effect on the water supply or on service to other water consumers.

C. In granting a variance, the Public Works Director may impose any conditions in order to ensure that the variance is consistent with the overall goal of water conservation. The granting of a variance and any conditions imposed upon such variance shall be set forth in writing.

D. The decision of the Public Works Director on an application for a variance may be appealed as provided in the section of this Chapter pertaining to appeals. (Ord. 389 §1, 1995).

13.09.090 Appeals.

A. There is hereby established a procedure pertaining to appeals of this Chapter to the City Council.

B. The City Council shall hear any and all matters referred to it under this Chapter at its regular meeting.

C. Any person who has been cited for water waste, and any person aggrieved by any action taken by the Public Works Director pursuant to this Chapter, may appeal such citation, action, or decision to the City Council, by filing a written appeal with the City Clerk within ten (10) days after the date of the citation, action or decision. A filing fee of twenty dollars (\$20.00) or ten percent (10%) of any fine to be assessed in connection with a citation, whichever is greater, shall be paid to the City Clerk at the time of filing any appeal.

D. In rendering its decision, the City Council shall determine which party is the prevailing party. If the appellant is the prevailing party, then the filing fee paid by the appellant shall be refunded to the appellant.

E. Decision of the City Council shall be final.

F. If the issuance of any citation is appealed as provided under this Section, any criminal prosecution for such citation shall be suspended until the appeal is completed, unless a time waiver is required in the criminal proceeding and the defendant in the criminal proceeding refuses to waive time. If the decision on such an appeal determines that the cited person committed a violation, such decision shall state the amount of the fine payable by such person, and such decision shall be final and the fine so imposed shall be enforceable as an ordinary civil obligation of the cited person, owed to the City. If the decision on such appeal is that the cited person did not commit a violation, then the criminal prosecution, if initiated, shall be dismissed, and no further criminal action shall be taken with respect to said alleged violation. If the appeal is not pursued to completion, the criminal prosecution may be reinstated or dismissed, as may be appropriate under the circumstances.

G. The filing of an appeal hereunder will not stay any civil proceedings relating to the underlying violation or alleged violation, and the decision of the court in such civil proceeding shall prevail over any contrary result in the administrative appeal. (Ord. 389 §1, 1995).

13.09.100 Revenue received from enforcement:

All revenues received by the City from enforcement of this Chapter shall be used exclusively for City water conservation programs, including but not limited to administrative, monitoring, appeals, and enforcement costs of mandatory water conservation. (Ord. 389 §1, 1995).

13.09.110 Severability.

If any section, subsection, sentence, clause, or phrase of this Chapter is for any reason held to be unconstitutional or invalid, such decision shall not affect the validity of the remaining portions of this Chapter. The City Council hereby declares that it would have passed this Chapter and each section, subsection, sentence, clause, or phrase thereof irrespective of the fact that any other part thereof be unconstitutional or invalid. (Ord. 389 §1, 1995).



APPENDIX G

2016 Adopted Water Rates

RESOLUTION NO 2016-65

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF GREENFIELD
APPROVING ADJUSTMENTS TO WATER USER FEES**

WHEREAS, in 1996, California voters approved Proposition 218, the “Right to Vote on Taxes Act,” which added Articles XIIC and XIID to the California Constitution; and

WHEREAS, various court cases in 2005 and 2006, most notably Bighorn-Desert View Water Agency v. Verjil, Richmond v. Shasta Community Services District, and The Howard Jarvis Taxpayers Association v. City of Fresno, extended the application of Proposition 218 from general taxes and assessments to utility user fees (i.e, sewer, water, and waste collection, etc.); and

WHEREAS, accordingly, the City of Greenfield may not increase its water user fees without complying with the provision of Proposition 218; and

WHEREAS, Proposition 218 requires that the City give written notice to its utility customers of an impending user fee increase, which must identify the amount of the increase, the reason(s) for the increase, and the date and time of the public hearing when the City Council will discuss and adopt the proposed new user fee; and

WHEREAS, under the direction of the City Manager, Hawksley Consulting prepared a study entitled Water & Sewer Cost of Service Rate Study (“the Study”), which describes in detail the infrastructure improvements necessary to increase capacity to serve the level of anticipated future development, as well as the justification for increasing the City’s water user fees; and

WHEREAS, the Study describes in detail the need to increase the City’s water user fee to cover the full cost of providing for the collection and treatment of water discharges for residents and businesses located within and adjacent to the City; and

WHEREAS, in accordance with Proposition 218, the City gave written notice to all its utility customers no less than forty-five (45) days prior to the scheduled public hearing; and

WHEREAS, the City scheduled and held a public hearing on July 26, 2016 at 6:00 p.m. to give the public an additional opportunity to protest this matter, should they so desire; and

WHEREAS, as of the beginning of the public hearing, the City had received no written protests regarding the proposed water user fee adjustments, and the public had an additional opportunity to file written protests up to the time the public hearing was closed; and

WHEREAS, upon close of the public hearing, the City had not received a majority protest that would have prohibited adoption of the adjustments to the water user fees.

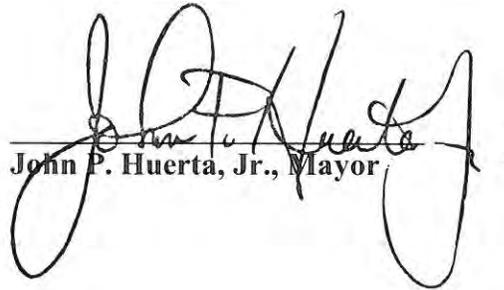
NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Greenfield does hereby approve the City water user fees identified in the attached Exhibit "A".

PASSED AND ADOPTED this 26th day of **July, 2016** by the following vote:

AYES, Councilmembers: Mayor Huerta, Mayor Pro-tem Rodriguez, Councilmember Walker, Torres and Santibanez

NOES, Councilmembers: None

ABSENT, Councilmembers: None


John P. Huerta, Jr., Mayor

Attest:


Ann F. Rathbun, City Clerk

EXHIBIT "A"

**CITY OF GREENFIELD
5-YEAR SCHEDULE OF PROPOSED WATER RATES
(rates are doubled for properties outside City limits)**

FY 2017 Water Rate Schedule (effective August 1, 2016)

Water Monthly Account Charge: \$10.67

Water Monthly Meter Charge		Private Fire Service	
Meter Size	Monthly Charge	Service Connection Size	Fixed Monthly Rate
5/8"	\$13.42	5/8"	\$0.25
3/4"	\$14.80	3/4"	\$0.40
1"	\$17.55	1"	\$0.86
1 1/2"	\$24.42	1.5"	\$2.50
2"	\$32.67	2"	\$5.34
3"	\$54.68	3"	\$15.50
4"	\$79.44	4"	\$33.03
6"	\$148.20	6"	\$95.94

Tiered Consumptive Rates (Single Family Residential)		
Tier	Threshold (gallons)	Rate (\$ per thousand gallons)
Tier 1	0 - 8000	\$1.17
Tier 2	8000 - 15000	\$1.75
Tier 3	> 15000	\$3.35

Uniform Consumptive Rates	
Customer Class	Rate (\$ per thousand gallons)
Multifamily Residential	\$1.73
Commercial / Institutional	\$1.68
Industrial	\$1.65
Irrigation/Landscape/Agriculture	\$2.38

FY 2018 Water Rate Schedule (effective July 1, 2017)

Water Monthly Account Charge: \$11.20

Water Monthly Meter Charge		Private Fire Service	
Meter Size	Monthly Charge	Service Connection Size	Fixed Monthly Rate
5/8"	\$14.09	5/8"	\$0.26
3/4"	\$15.54	3/4"	\$0.42
1"	\$18.43	1"	\$0.90
1 1/2"	\$25.64	1.5"	\$2.63
2"	\$34.30	2"	\$5.61
3"	\$57.41	3"	\$16.28
4"	\$83.41	4"	\$34.68
6"	\$155.61	6"	\$100.74

Tiered Consumptive Rates (Single Family Residential)		
Tier	Threshold (gallons)	Rate (\$ per thousand gallons)
Tier 1	0 - 8000	\$1.23
Tier 2	8000 - 15000	\$1.84
Tier 3	> 15000	\$3.52

Uniform Consumptive Rates	
Customer Class	Rate (\$ per thousand gallons)
Multifamily Residential	\$1.82
Commercial / Institutional	\$1.76
Industrial	\$1.73
Irrigation/Landscape/Agriculture	\$2.50

FY 2019 Water Rate Schedule (effective July 1, 2018)

Water Monthly Account Charge: \$11.76

Water Monthly Meter Charge		Private Fire Service	
Meter Size	Monthly Charge	Service Connection Size	Fixed Monthly Rate
5/8"	\$14.79	5/8"	\$0.27
3/4"	\$16.32	3/4"	\$0.44
1"	\$19.35	1"	\$0.95
1 1/2"	\$26.92	1.5"	\$2.76
2"	\$36.02	2"	\$5.89
3"	\$60.28	3"	\$17.09
4"	\$87.58	4"	\$36.41
6"	\$163.39	6"	\$105.78

Tiered Consumptive Rates (Single Family Residential)		
Tier	Threshold (gallons)	Rate (\$ per thousand gallons)
Tier 1	0 - 8000	\$1.29
Tier 2	8000 - 15000	\$1.93
Tier 3	> 15000	\$3.70

Uniform Consumptive Rates	
Customer Class	Rate (\$ per thousand gallons)
Multifamily Residential	\$1.91
Commercial / Institutional	\$1.85
Industrial	\$1.82
Irrigation/Landscape/Agriculture	\$2.62

FY 2020 Water Rate Schedule (effective July 1, 2019)

Water Monthly Account Charge: \$12.35

Water Monthly Meter Charge		Private Fire Service	
Meter Size	Monthly Charge	Service Connection Size	Fixed Monthly Rate
5/8"	\$15.53	5/8"	\$0.28
3/4"	\$17.14	3/4"	\$0.46
1"	\$20.32	1"	\$1.00
1 1/2"	\$28.27	1.5"	\$2.90
2"	\$37.82	2"	\$6.18
3"	\$63.29	3"	\$17.94
4"	\$91.96	4"	\$38.23
6"	\$171.56	6"	\$111.07

Tiered Consumptive Rates (Single Family Residential)		
Tier	Threshold (gallons)	Rate (\$ per thousand gallons)
Tier 1	0 - 8000	\$1.35
Tier 2	8000 - 15000	\$2.03
Tier 3	> 15000	\$3.89

Uniform Consumptive Rates	
Customer Class	Rate (\$ per thousand gallons)
Multifamily Residential	\$2.01
Commercial / Institutional	\$1.94
Industrial	\$1.91
Irrigation/Landscape/Agriculture	\$2.75

FY 2021 Water Rate Schedule (effective July 1, 2020)

Water Monthly Account Charge: \$12.97

Water Monthly Meter Charge		Private Fire Service	
Meter Size	Monthly Charge	Service Connection Size	Fixed Monthly Rate
5/8"	\$16.31	5/8"	\$0.29
3/4"	\$18.00	3/4"	\$0.48
1"	\$21.34	1"	\$1.05
1 1/2"	\$29.68	1.5"	\$3.05
2"	\$39.71	2"	\$6.49
3"	\$66.45	3"	\$18.84
4"	\$96.56	4"	\$40.14
6"	\$180.14	6"	\$116.62

Tiered Consumptive Rates (Single Family Residential)		
Tier	Threshold (gallons)	Rate (\$ per thousand gallons)
Tier 1	0 - 8000	\$1.42
Tier 2	8000 - 15000	\$2.13
Tier 3	> 15000	\$4.08

Uniform Consumptive Rates	
Customer Class	Rate (\$ per thousand gallons)
Multifamily Residential	\$2.11
Commercial / Institutional	\$2.04
Industrial	\$2.01
Irrigation/Landscape/Agriculture	\$2.89



APPENDIX H

Notice of Public Hearings and Notification Letters

NOTICE OF PUBLIC HEARING

Notice is hereby given that the Greenfield City Council will hold public hearing on Tuesday, March 27, 2018, at 6:00 P.M. at the Greenfield City Council Chambers located at 599 El Camino Real, Greenfield, California to hear the following item:

- (1) Consideration and adoption of the City of Greenfield 2015 Urban Water Management Plan (UWMP) as required by the Urban Water Management Planning Act, Water Code Division 6, Part 2.6, Sections 10610 through 10656.

You are invited to attend the meeting and provide oral comments at the public hearing. Written comments may also be submitted to the Community Services Director, Mic Steinmann, prior to the date and time of the hearings. Please send questions or comments to City Hall, 599 El Camino Real, P.O. Box 127, Greenfield, California, 93927. Mr. Steinmann may also be contacted at (831) 674-5591 or by email at msteinmann@ci.greenfield.ca.us.

If you challenge this matter in court, you may be limited to raising only those issues you or someone else raised at the public hearing or issues provided in written correspondence to the appropriate authority prior to the public hearing described in this public notice

En caso que usted necesite ayuda en leer o en entender este aviso de Audiencia Publica, usted puede ponerse en contacto con la oficina del Edificio Municipal 599 El Camino Real o llamar al número (831) 674-5591, y el aviso será traducido para usted.

Ann F. Rathbun, CMC
City Clerk

Publish: Greenfield News
March 7, 2018
March 13, 2018



City of Greenfield

PO Box 127 / 599 El Camino Real
Greenfield, CA 93927

☎ 831-674-5591 ☎ 831-674-3149

www.ci.greenfield.ca.us

November 2, 2017

Monterey County Water Resources Agency.
Robert Johnson
Deputy General Manager
893 Blanco Circle
Salinas, CA 93901

Re: City of Greenfield Urban Water Management Plan Update

Dear Robert Johnson,

On behalf of the City of Greenfield, we wish to inform you that we are currently updating the City's Urban Water Management Plan (UWMP) to meet the new State Guidelines. In accordance with the Urban Water Management Planning Act (California Water Code Sections 10610 to 10657), urban water suppliers are required to prepare an Urban Water Management Plan and update it every five years. The City of Greenfield (City) is preparing the 2015 UWMP for submission to the California Department of Water Resources (DWR).

The City of Greenfield seeks and welcomes your input on the Draft Plan Update. A Draft of the 2015 UWMP is available on line for your review and a copy will be made available for public review at Civic Center. A public hearing will be scheduled prior to the adoption of the 2015 UWMP by the City council.

The deadline for receiving comments on City's Draft Urban Water Management Plan (UWMP) is January 1, 2018.

Please send all comments to afelix@ci.greenfield.ca.us or via mail to 599 El Camino Real, Greenfield, CA 93927.

If you have any questions, please feel free to contact me at (831) 674-2635.

Arturo Felix
Public Works Operations Manager



City of Greenfield

PO Box 127 / 599 El Camino Real
Greenfield, CA 93927

☎ 831-674-5591 ☎ 831-674-3149

www.ci.greenfield.ca.us

November 2, 2017

Arroyo Seco Groundwater Sustainability Agency
City of Greenfield Board of Directors
599 El Camino Real
Greenfield, CA 93927

Re: City of Greenfield Urban Water Management Plan Update

Honorable Board,

On behalf of the City of Greenfield, we wish to inform you that we are currently updating the City's Urban Water Management Plan (UWMP) to meet the new State Guidelines. In accordance with the Urban Water Management Planning Act (California Water Code Sections 10610 to 10657), urban water suppliers are required to prepare an Urban Water Management Plan and update it every five years. The City of Greenfield (City) is preparing the 2015 UWMP for submission to the California Department of Water Resources (DWR).

The City of Greenfield seeks and welcomes your input on the Draft Plan Update. A Draft of the 2015 UWMP is available on line for your review and a copy will be made available for public review at Civic Center. A public hearing will be scheduled prior to the adoption of the 2015 UWMP by the City council.

The deadline for receiving comments on City's Draft Urban Water Management Plan (UWMP) is January 1, 2018.

Please send all comments to afelix@ci.greenfield.ca.us or via mail to 599 El Camino Real, Greenfield, CA 93927.

If you have any questions, please feel free to contact me at (831) 674-2635.

Arturo Felix
Public Works Operations Manager



City of Greenfield

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Greenfield, CA 93927

☎ 831-674-5591 ☎ 831-674-3149

www.ci.greenfield.ca.us

November 2, 2017

SWRCB Division of Drinking Water
Jan Sweigert
District Engineer
1 Lower Ragsdale, Building 1, Suite 120
Monterey, CA 93940-5741

Re: City of Greenfield Urban Water Management Plan Update

Dear Jan Sweigert,

On behalf of the City of Greenfield, we wish to inform you that we are currently updating the City's Urban Water Management Plan (UWMP) to meet the new State Guidelines. In accordance with the Urban Water Management Planning Act (California Water Code Sections 10610 to 10657), urban water suppliers are required to prepare an Urban Water Management Plan and update it every five years. The City of Greenfield (City) is preparing the 2015 UWMP for submission to the California Department of Water Resources (DWR).

The City of Greenfield seeks input on the Draft Plan Update and welcome your input. A Draft of the 2015 UWMP is available on line for your review at <https://ci.greenfield.ca.us> and a copy will be made available for public review at the Civic Center. Public hearings will be scheduled ahead of the adoption of the 2015 UWMP by the City council.

The deadline for receiving comments on the Draft Plan Update is January 1, 2018.

Please send all comments to afelix@ci.greenfield.ca.us or via mail to 599 El Camino Real, Greenfield, CA 93937.

If you have any questions, please feel free to contact me at (831) 674-2635.

Arturo Felix
Public Works Operations Manager



City of Greenfield

PO Box 127 / 599 El Camino Real
Greenfield, CA 93927

☎ 831-674-5591 📠 831-674-3149

www.ci.greenfield.ca.us

November 2, 2017

California Water Co, King City District.
Mark Bloom
Local Manager
1301 Broadway Circle Suite A-3
King City, CA 93930

Re: City of Greenfield Urban Water Management Plan Update

Dear Mark Bloom,

On behalf of the City of Greenfield, we wish to inform you that we are currently updating the City's Urban Water Management Plan (UWMP) to meet the new State Guidelines. In accordance with the Urban Water Management Planning Act (California Water Code Sections 10610 to 10657), urban water suppliers are required to prepare an Urban Water Management Plan and update it every five years. The City of Greenfield (City) is preparing the 2015 UWMP for submission to the California Department of Water Resources (DWR).

The City of Greenfield seeks and welcomes your input on the Draft Plan Update. A Draft of the 2015 UWMP is available on line for your review and a copy will be made available for public review at Civic Center. A public hearing will be scheduled prior to the adoption of the 2015 UWMP by the City council.

The deadline for receiving comments on City's Draft Urban Water Management Plan (UWMP) is January 1, 2018.

Please send all comments to afelix@ci.greenfield.ca.us or via mail to 599 El Camino Real, Greenfield, CA 93927.

If you have any questions, please feel free to contact me at (831) 674-2635.

Arturo Felix
Public Works Operations Manager



City of Greenfield

PO Box 127 / 599 El Camino Real
Greenfield, CA 93927

☎ 831-674-5591 📠 831-674-3149

www.ci.greenfield.ca.us

November 2, 2017

City of Soledad
Don Wilcox
Public Works Director
248 Main Street
Soledad, CA 93960

Re: City of Greenfield Urban Water Management Plan Update

Dear Don Wilcox,

On behalf of the City of Greenfield, we wish to inform you that we are currently updating the City's Urban Water Management Plan (UWMP) to meet the new State Guidelines. In accordance with the Urban Water Management Planning Act (California Water Code Sections 10610 to 10657), urban water suppliers are required to prepare an Urban Water Management Plan and update it every five years. The City of Greenfield (City) is preparing the 2015 UWMP for submission to the California Department of Water Resources (DWR).

The City of Greenfield seeks and welcomes your input on the Draft Plan Update. A Draft of the 2015 UWMP is available on line for your review and a copy will be made available for public review at Civic Center. A public hearing will be scheduled prior to the adoption of the 2015 UWMP by the City council.

The deadline for receiving comments on City's Draft Urban Water Management Plan (UWMP) is January 1, 2018.

Please send all comments to afelix@ci.greenfield.ca.us or via mail to 599 El Camino Real, Greenfield, CA 93927.

If you have any questions, please feel free to contact me at (831) 674-2635.

Arturo Felix
Public Works Operations Manager



APPENDIX I

Resolution and Adoption

**CITY OF GREENFIELD
RESOLUTION NO. 2018-26**

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF
GREENFIELD ADOPTING THE 2015 URBAN WATER
MANAGEMENT PLAN**

WHEREAS, the California Urban Water Management Planning Act, Water Code section 10610 *et seq.*, mandates that every urban water supplier providing water for municipal purposes to more than 3,000 customers annually, must prepare an Urban Water Management Plan (UWMP), the primary objective of which is to plan for the conservation and efficient use of water; and

WHEREAS, the UWMP must be adopted by the governing board of each system and submitted to the California Department of Water Resources; and

WHEREAS, the City of Greenfield is an urban supplier of water providing water for municipal purposes to more than 3,000 customers; and

WHEREAS, on March 17, 2008, the City Council adopted the 2008 Urban Water Management Plan (Resolution No. 2008-15), the first plan developed by the City; and

WHEREAS, on July 22, 2014, the City Council approved the City of Greenfield Urban Water Shortage Contingency Plan as required by the 2008 UWMP and the State Water Code; and

WHEREAS, the State Water Code requires the UWMP be periodically reviewed at least once every five years (beginning in 2010), and the City shall make any amendments or changes to its UWMP which are indicated by that review; and

WHEREAS, the City has prepared and circulated for public review a draft 2015 Urban Water Management Plan, and a properly noticed public hearing regarding said UWMP was held by the City Council on March 27, 2018; and

WHEREAS, the City did prepare and submit said 2015 UWMP to the California Department of Water Resources;

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Greenfield as follows:

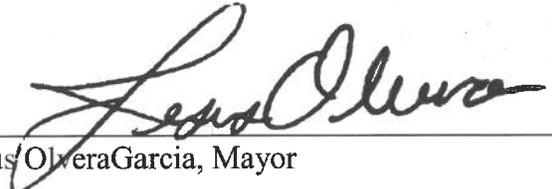
1. That the 2015 Urban Water Management Plan is hereby adopted; and
2. That the City Manager is hereby authorized and directed to submit the 2015 Urban Water Management Plan to the California Department of Water Resources within 30 days after this date.

PASSED AND ADOPTED by the City Council of the City of Greenfield at a public meeting of the City Council held on the 27th day of March 2018, by the following vote:

AYES, and all in favor, therefore, Councilmembers: Mayor OlveraGarcia, Mayor Pro-tem Torres, Councilmembers Santibanez and Martinez

NOES, Councilmembers: None

ABSENT, Councilmembers: None



Jesus OlveraGarcia, Mayor

Attest:



Ann F. Rathbun, City Clerk



APPENDIX J

Water System Emergency Response Plan

City of Greenfield Water System Emergency Response Plan

Prepared by:

Michael Ranker, P.E., City Engineer

TERRA ENGINEERING, INC.

820 Park Row, #592 831.455.2344
Salinas, CA 93901-2406 fax: 831.455.1921

And

John Alves, Deputy City Manager/Public Works Director
City of Greenfield

December 30, 2004

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- E California Statewide Emergency Notification Plan
- F Incident Reports and Forms
- G ERP Certification Form

Acronyms and Abbreviations

AP	Action Plan
ASDWA	Association of State Drinking Water Administrators
ATSDR	Agency for Toxic Substances and Disease Registry
AWWA	American Water Works Association
BSL	Biosafety Lab
BWO	Boil Water Order
CAMAL Net	California Mutual Aid Laboratory Network
CDC	Center for Disease Control
CDHS	California Department of Health Services
CST	Civilian Support Team
DHS	Department of Homeland Security
DWP	Drinking Water Program
EOC	Emergency Operations Center
EPA	Environmental Protection Agency
ERP	Emergency Response Plan
EWQSK	Emergency Water Quality Sampling Kit
FBI	Federal Bureau of Investigation
FEMA	Federal Emergency Management Agency
GM	General Manager
gpm	gallons per minute
HAZMAT	hazardous materials
HHS	Health and Human Services
ICS	Incident Command System
LD	Laboratory Director
LEPC	Local Emergency Planning Committees
LRN	Laboratory Response Network
MDL	Microbial Disease Laboratory

MSDS	Material Safety Data Sheet
MWDSC	Metropolitan Water District of Southern California
NRWA	National Rural Water Association
OES	Office of Emergency Services
OSHA	Occupational Safety and Health Administration
PIO	Public Information Officer
PWS	Public Water System
RMP	Risk Management Plan
SCADA	Supervisory Control and Data Acquisition
SD	Security Director
SEMS	Standardized Emergency Management System
SRLB	Sanitation and Radiation Laboratories Branch
UWA	Unsafe Water Alert
VA	Vulnerability Assessment
WMD	Weapons of Mass Destruction
WTP	Water Treatment Plant
WUERM	Water Utility Emergency Response Manager
WUOCM	Water Utility Emergency Operations Center Manager

1.0 Introduction

This section presents the purpose, goals, requirements, access control, and plan overview of the Emergency Response Plan (ERP) for the City of Greenfield. *Note that the ERP Activation process is described in Section 5.0.*

1.1 Purpose

The purpose of this ERP is to provide the City of Greenfield with a standardized response and recovery protocol to prevent, minimize, and mitigate injury and damage resulting from emergencies or disasters of man-made or natural origin.

The ERP also describes how the City of Greenfield will respond to potential threats or actual terrorist scenarios identified in the vulnerability assessment (VA), as well as additional emergency response situations. Included in this ERP are specific action plans (APs) that will be used to respond to events and incidents.

1.2 Goals

The goals of this ERP are to:

- Rapidly restore water service after an emergency.
- Ensure adequate water supply for fire suppression.
- Minimize water system damage.
- Minimize impact and loss to customers.
- Minimize negative impacts on public health and employee safety.
- Provide emergency public information concerning customer service.

1.3 Requirement

This ERP has been designed to comply with Section 1433(b) of the Safe Drinking Water Act (SDWA) as amended by the Public Health Security and Bioterrorism Preparedness and Response Act of 2002 (Public Law 107-188, Title IV - Drinking Water Security and Safety), California Government Code Section 8607.2 - Public Water System Plans, California Health and Safety Code, Sections 116460, 116555 and 116750, and California Waterworks Standards, Section 64560.

The City of Greenfield has provided the required certification to the United States Environmental Protection Agency (USEPA) that this emergency response plan incorporates the results of the VA completed for the system and includes plans, procedures, and identification of equipment that can be implemented or used in the event of a terrorist attack on the water system. The City of Greenfield has also provided a copy of the ERP to the local California Department of Health Services (CDHS) Drinking Water Field Operations Branch District Office.

Whenever the ERP is changed or updated, a revised copy, or the specific revised documents, will be sent to the CDHS District Office.

Guidance from the following documents is incorporated in this ERP:

- "California Emergency Response Plan Guidance" (CDHS, Version 1.0, December 2003).
- "Guidance for Water Utility Response, Recovery & Remediation Actions for Man-Made And / Or Technological Emergencies" (USEPA 810-R-02-001).
- "Large Water System Emergency Response Plan Outline: Guidance to Assist Community Water Systems in Complying with the Public Health Security and Bioterrorism Preparedness and Response Act of 2002" (USEPA 810-F-03-007, July 2003).
- "Response Protocol Toolbox: Planning for and Responding to Drinking Water Contamination Threats and Incidents" (USEPA-817-D-03-001 to 007, Interim Final - December 2003).
- "Small and Medium Water System Emergency Response Plan Guidance to Assist Community Water Systems in Complying with the Public Health Security and Bioterrorism Preparedness and Response Act of 2002."
- "Emergency Planning Guidance Public and Private Water Utilities." March 1999. California Office of Emergency Services (OES) and California Utilities Emergency Association.

1.4 Access Control

Because of the sensitive nature of the information contained in this ERP, an access control protocol has been established under the direction of the City of Greenfield Security Director (SD). Distribution of the ERP is limited to those individuals directly involved in the City of Greenfield's emergency planning and response activities. The ERP copies are numbered prior to distribution, and recipients are required to sign and date a statement that includes their ERP number and their agreement not to reproduce the ERP without permission from the City of Greenfield SD. A secure copy of the ERP is maintained in an off-premises location, known to the City of Greenfield's SD, in the event that the utility's copies cannot be accessed.

1.5 Plan Overview

This ERP is organized into eight sections and appendices, as described below:

- Section 1.0: Introduction: Describes the purpose, goals, regulatory requirements, access control protocol, and overall organization of the ERP.
- Section 2.0: Emergency Planning Process Information: Describes the City of Greenfield's emergency planning partnerships, mutual aid agreements, emergency response policies, procedures and documents, and summarizes the scenarios from the VA that are addressed in the ERP.

- Section 3.0: Water System Information: Provides specific information about the City of Greenfield's Water System, identifies emergency resources, and identifies alternate and backup water sources.
- Section 4.0: SEMS/ICS Integration and Organization: Presents emergency response chain-of-command and information and describes how the City of Greenfield will use the Standardized Emergency Management System/Incident Command System (SEMS/ICS) system to manage emergencies.
- Section 5.0: Concept of Operations: Describes the City of Greenfield's policies, procedures, and plans to mitigate emergency incidents, including how threats may be received into the utility, ERP activation, response capabilities, personnel safety provisions, and protective action protocols.
- Section 6.0: Communications Procedures: Describes the City of Greenfield's chain of command and provides notification procedures and contact lists for internal and external contacts, including public notice procedures.
- Section 7.0: Water Quality Sampling: Includes information and procedures regarding water quality sampling procedures and equipment. Also provides information on available laboratory resources in California.
- Section 8.0: Emergency Response, Recovery, and Termination: Describes the three phases of an emergency: response, recovery, and termination. General actions and guidance is provided for each phase, and these procedures should be used in conjunction with the specific action plans in Appendix A.
- Section 9.0: Emergency Response Plan Approval, Update, Training, and Exercises: Describes the emergency response training program and the ERP review, approval, and update processes.
- Section 10.0: References and Links
- Appendices:
- A. Action Plans
 - B. System and Facility Information
 - C. Emergency Phone Lists
 - D. Public Notices and Press Releases
 - E. CA Statewide Emergency Notification Plan
 - F. Incident Reports and Forms
 - G. ERP Certification Form

2.0 Emergency Planning Process Information

This section presents the City of Greenfield planning partnerships and discusses the relationship between this ERP and other City of Greenfield related plans.

2.1 General Information

2.1.1 Planning Partnerships

The City of Greenfield has established emergency planning partnerships with other parties who have agreed to help the utility in an emergency situation. A list of these agencies and a brief description of their emergency capabilities is provided below.

Agency	Capability
<i>Monterey County Office of Emergency Services</i>	<i>Direct County Wide Emergency Services</i>
<i>Greenfield Fire Protection System</i>	<i>Provide Fire Protection Services</i>
<i>Greenfield Police</i>	<i>Provide Public Safety & Protection</i>
<i>Monterey County Health Department</i>	<i>Responsible for Drinking Water Quality & Testing</i>
<i>Creek Environmental Lab</i>	<i>Drinking Water Testing Facilities</i>
<i>California Department of Health Services</i>	<i>Drinking Water Quality Regulation</i>
<i>Monterey County Department of Health Services Division of Environmental Health</i>	<i>Hazardous Materials Handling</i>
<i>Monterey County Sheriff</i>	<i>Bomb Squad</i>
<i>Salinas Fire</i>	<i>HAZMAT</i>
<i>Regional Water Quality Control Board San Luis Obispo, CA</i>	<i>Solid Waste Jurisdiction</i>
<i>American Medical Response</i>	<i>Paramedic/E.M.T.</i>
<i>Monterey County Chapter of the Red Cross</i>	<i>Disaster Relief Clothing, Shelter, and Food</i>

In the event of an attack on the water system, some or all of these agencies, as well as other state and federal agencies, may be called upon for assistance. A complete list of emergency response agencies with their telephone contact numbers is provided in Section 6.3.3.

2.1.2 Mutual Aid Agreements

In addition to the partnerships outlined above, City of Greenfield has established mutual aid agreements with the following organizations:

Organization	Nature of Agreement
Monterey Petroleum Salinas, CA	Agrees to provide fuel every 8 hours as needed for back up generator upon a loss of power
City of Soledad Water Utility	There is currently none available.
City of King Water Utility	There is currently none available.

2.1.3 Relationship between ERP and Other Plans

This ERP is intended to assist the City of Greenfield's managers and staff in responding to emergencies and malevolent acts (i.e., attacks) that affect the water system. The ERP is supplemented and referenced by the plans; procedures, policies and agreements shown in the table below

Document	Relationship to ERP
Risk Management Plan (RMP)	This document contains responses to hazardous chemical releases, such as chlorine.
Applicable Material Safety Data Sheets (MSDS)	These are standard data sheets that contain information regarding responses to specific chemical releases as well as a host of other useful information.
Water Sampling Plan	This document provides useful information to support the contamination event stages evaluation as well as to provide information for the baseline analysis or provide conditions that are considered normal for your utility.
Water Sample Chain of Custody Procedures	This document(s) ensures that water samples are protected and properly handled so as to preclude contamination from the sampling process.

2.2 Disaster Events or Scenarios

Specific APs have been developed to address each of the high-risk threat scenarios identified in the City of Greenfield's vulnerability assessment. APs are tailored ERP actions that address specific major events. For security reasons, the procedures outlined in these documents are intentionally general in nature, omitting confidential details and effected assets. The specific APs are attached in the appendices following this main ERP document.

2.2.1 Natural Disasters

The City of Greenfield has considered the threats posed by natural events and weather-related phenomena. Specific AP(s) have been developed to guide a timely and prudent response should such threats be realized. These detailed APs are found in the attached appendices. Considered natural disasters include:

Natural Disaster	Primary AP No.	Secondary AP No.
Earthquakes	5C	
Floods	5A	
Winter Storm	5B	
Power Outage	4	

2.2.2 Events Caused by Human Intervention (Man-made Threats)

The City of Greenfield has developed specific AP documents, found in the appendices, to respond to the following threats that were identified in the vulnerability analysis:

Event / Threat	Primary AP No.	Secondary AP No.
Threat of Contamination to Water System	1A	1B
Confirmed Contamination to Water System	1C	1B
Structural Damage from Explosive Device	2	1A
Employee Assaulted with Weapon (Armed Intruder)	3	
SCADA System Intrusion		
IT System Intrusion		
Chemical Release		
Water Supply Interruption	6	
Bomb Threat	7A	7B, 7C

3.0 Water System Information

This section presents the core elements of the City of Greenfield ERP, including the system-specific information, roles and responsibilities in an emergency, communication procedures, personnel safety, identification of alternate water sources, emergency and chemical supplies, and property protection.

3.1 System Specific Information

This section contains the City of Greenfield Public Water System (PWS) identification and emergency contacts, as well as basic information to describe the water system.

System Identification Number	2710008	
System Name and Address	City of Greenfield 45 El Camino Real Greenfield, CA 93927	
Directions to System Office	Located on the East Side of 10 th Street one block North of Walnut Avenue.	
Number of Service Connections/Population Served¹	2,496 service connections	13,167+/- population ¹
Type of Source	2 Groundwater Wells	(Well No. 3 off-line)
Interconnections and Purchased Water Agreements	0 Interconnections	Bay Area Water Trucks or Cities of Soledad & King City
Type of Treatment Provided	Disinfection treatment is provided using Chlorine Powder HTH.	
Number of Storage Tanks	0 Raw Water Tanks	1 Treated Water Tanks
Average Water Demand	1,123 gallons per minute (gpm)	
Maximum and Peak Water Demand	1,500 gpm maximum	3,400 gpm peak
Emergency Contact Person(s)	Anna Vega City Manager	(831) 674-5591 Office (831) 594-8432 Cell (831) 674-0480 Home Phone (831) 674-3149 Fax
	John P. Alves Deputy City Manager Public Works Director	(831) 674-2635 Office (831) 595-1205 Cell (831) 674-5566 Home Phone (831) 286-0053 Pager (831) 674-3259 Fax

3.2 General System Map/Service Area Map

The following maps and drawings of the City of Greenfield's system are provided in Appendix B for reference. Detailed Engineering Drawings are on file at the Public Works Corporation Yard at 920 Walnut Avenue.

3.2.1.1 Distribution System Map

3.2.1.2 Site Plans and Facility "As-Built" Engineering Drawings

Certain site plans and engineering drawings have been included in this document for reference, as follows:

- Well Site and Pumping Station
- Waste Water Treatment Facility

3.2.1.3 Operating Procedures and System Descriptions including Backup Systems

Certain operating procedures and system descriptions have been included in this document for reference, as follows:

- Operation and Maintenance Manuals for Pump Station and Treatment Plant.

3.3 Critical System Components

Included below is an outline of system components deemed critical to operation of City of Greenfield. Information on the location of the asset is included, as well as descriptive information such as entry restrictions or special equipment or tool needs.

Asset	Location	Description
Wells 1 and 6 Well 5	14 th Street between Pine & Walnut Avenues Oak Ave. & Thirteenth St.(offline)	Well Site perimeter Fence with barbed wire, locked entry gate and locked key-control panel.
Pump Station and Storage Tank	Oak Ave. & Thirteenth St	Pumping Station and Treated Water Storage Tank (1 million gallons). Perimeter Fence with barbed wire, locked entry gate and locked Control Room.

3.4 Identification of Alternate Water Sources

Alternate water sources are described in this section.

3.4.1 Alternate Raw Water Sources

City of Greenfield has no alternate or independent raw water sources:

3.4.2 Interconnects and Agreements with Other Utilities

There are no interconnections available to the City of Greenfield.

3.4.3 Water Sources for Short-term Outages

Possible alternate water supply options for short-term outages include:

Short-term water supply options

- Local Supermarkets
- Pure Water Bottling Co. 1-831-759-9333
- "Bay Area Water Trucks" 1-408-298-0500
- "Sala Bros, Inc. " 1-831-726-3903

Emergency water supply equipment sources

- City of Soledad or King City
- Local Supermarkets
- Pure Water Bottling Co. 1-831-759-9333
- "Bay Area Water Trucks" 1-408-298-0500
- "Sala Bros, Inc. " 1-831-726-3903

3.5 Emergency Water Supply calculations

3.5.1 Amount of Water Needed for Various Durations

Typical residential water usage in the United States is on the order of 300 to 500 gallons per residence per day, or 100 to 150 gallons per capita per day. Although these amounts can typically be significantly reduced during crisis situations, the City of Greenfield has found it useful to develop an estimate for the quantity of supplemental water required for a number of potential outage scenarios. These estimates are as follows:

Outage Period	Number of Customers (Service Connections) Affected	Quantity Needed
1 hour	2,496 Customers	65,800 Gallons
12 hours		790,000 Gallons
1 day		1,580,000 gallons
2 days		3.16 Million Gallons
1 week		11.1 Million Gallons

3.5.2 Estimated Emergency Supply of Water

City of Greenfield has estimated the amount of water storage available in the system under an emergency situation according to the following formula:

Emergency supply of water = (amount of storage + backup/emergency supply) / (system demand)

Calculations for City of Greenfield: Amount of storage = 1,000,000 gallons

Backup/Emergency Supply = None Available

??? System Demand = 1,100 gpm Average, 1,500 gpm Maximum

??? Emergency Supply = 4.17 days at Average Demand, 1.67 days at Max Demand

3.6 Emergency Equipment and Supplies

The equipment and chemical supplies that are arranged to respond to incidents are described in this section. In addition, the individual Action Plans have specific equipment requirements.

3.6.1 Facility Emergency Equipment List

City of Greenfield has identified additional sources of operational equipment and repair parts in excess of normal usage that can be used in the event of an emergency situation. The decision regarding what type and quantity of additional equipment to have available is based on the results of the specific scenarios and critical assets identified in City of Greenfield's vulnerability assessment.

A list of equipment sources, including vendors, chemical suppliers, service contractors, and the equipment, materials and services that they provide is provided below. City of Greenfield also has a mutual aid agreement with several neighboring utilities and local businesses (see Section 2.1.2).

The following pages contain a comprehensive list of equipment and supplies, their respective locations and whether they are equipped with communication devices such as two way radios.

CITY OF GREENFIELD
VEHICLE EQUIPMENT INVENTORY 2004 - 2005

ID #	YEAR	MAKE/MODEL	VIN/SERIAL #	LICENSE #	2-WAY RADIO	LOCATION
A-02	2004	DODGE STRATUS	1B3AL56R24N332014	1102927	N/A	CORPORATION YARD 920 WALNUT AVE.
B-01	1988	CHEVY 1/2 TON PICK UP	1GCEC14WAWZ232509	1007286	YES	CORPORATION YARD 920 WALNUT AVE.
E-02	1982	PETTIBONE	SER1503	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
E-03	1986	CASE LOADER	8988432	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
E-04	1986	PAY LOADER	27MC02234	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
E-05	1973	LOW BOY TRIALER	CA581176	V323943	N/A	CORPORATION YARD 920 WALNUT AVE.
E-06	1983	GRADER	D3822	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
E-07	2000	SULLIVAN AIR COMPRESSOR	D210Q6JD	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
E-08	1995	FMC TIRE MACHINE	L11GN214	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
E-09	1996	MILWAUKEE DRILL	847A495420348	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
E-10	1996	LINCOLN WIRE FEED WELDER	960610604	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
E-11	2002	POWER EASE PRESSURE WASHER	GX160/ MODEL 40	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
E-12	2000	LANDA PRESSURE WASHER 4YN80	4YN80	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
E-13	2001	CATERPILLAR 416 C BACKHOE LOADER	PIN #*4ZN24053*	N/A	YES	CORPORATION YARD 920 WALNUT AVE.
E-14	2001	BENWIL GLOBE HOIST	SERIAL #104	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
E-15	2001	HONDA GENERATOR	EAT-3170006	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
E-17	1985	HONDA GENERATOR	0-1079826	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
E-18	1985	WHACKER	501309803	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
E-20	1961	WEED SPRAYER	471-48113	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.

CITY OF GREENFIELD
VEHICLE EQUIPMENT INVENTORY 2004 - 2005

ID #	YEAR	MAKE/MODEL	VIN/SERIAL #	LICENSE #	2-WAY RADIO	LOCATION
E-21	1988	AIRLESS PAINT SPRAYER	1672	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
E-23	1987	PRESSURE WASHER	8524/0887	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
E-24		CHOP SAW			N/A	CORPORATION YARD 920 WALNUT AVE.
E-25	2002	SKIL SAW HD77	HG254502	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
E-26	2003	SYMTECH HEADLIGHT ALIGNMENT	SYM-ELA10	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
E-30	1980	WB240 WHEEL BALANCER	030-16299	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
E-31	1985	SHOP AIR COMPRESSOR	113580	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
E-32	1984	ALLIS-CHALMERS FORKLIFT	28058	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
E-33	2001	JACKHAMMER	Serial D11327M180	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
E-34	1983	JACKHAMMER (SMALL)	Serial 160487	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
P-01	1984	BUNTON LAWN MOWER	2127021	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
P-02	2002	HUSQVARNA HEDGE TRIMMER	995100750	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
P-03	1990	GAS HEDGE TRIMMER	237707	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
P-04	1990	MTD GAS EDGE TRIMMER	89121403	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
P-05	1991	955 JOHN DEERE MOWER	M00955D10	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
P-06	1992	MPW TRAILER	N/A	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
P-07	1985	KAWASAKI HEDGE TRIMER	002929	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
P-08	1985	HUSQVARNA WEED EATER 125L # 1	F302019	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
P-09	1986	POWER TRIM EDGER	E40334	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.

CITY OF GREENFIELD
VEHICLE EQUIPMENT INVENTORY 2004 - 2005

ID #	YEAR	MAKE/MODEL	VIN/SERIAL #	LICENSE #	2WAY RADIO	LOCATION
P-10	1997	HUSQVARNA WEED EATER 225L # 3	7430441	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
P-11	1999	STIHL BLOWER - BR400	42055285	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
P-12	1999	HUSQVARNA WEED EATER 225L # 4	8350524	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
P-13		UTILITY TRAILER (ARMY) #1	N/A	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
P-14		UTILITY TRAILER (ARMY) #2	N/A	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
P-15		UTILITY TRIALER (ARMY) #3	N/A	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
P-16	2001	STIHL WEEDEATER FS83 # 2	GZ25N7109844	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
P-17	2002	HUSQVARNA WEED EATER 326C/L	1HVXS 0254ED	N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
P-18	2004	JD 4120 TRACTOR		N/A	N/A	CORPORATION YARD 920 WALNUT AVE.
PW-01	2002	CHEVY 1/2 TON PICK UP	1GCEC14X4Z2241228	1098709	YES	CORPORATION YARD 920 WALNUT AVE.
PW-02	1992	GMC 1/2 TON PICK UP	16TDC14H3NZ529377	E366261	YES	CORPORATION YARD 920 WALNUT AVE.
PW-03	1974	CHEVY 1/2 TON PICK UP	CCY144Z144961	E268843	YES	CORPORATION YARD 920 WALNUT AVE.
PW-04	1995	GMC - SONOMA PICK UP #1	1GTCS14Z8S8537709	E029203	YES	CORPORATION YARD 920 WALNUT AVE.
PW-05	1995	GMC - SONOMA PICK UP #2	1GTCS1442S8F37919	E029204	YES	CORPORATION YARD 920 WALNUT AVE.
PW-06	1985	INTERNATIONAL FLATBED	1HTLAHEK2GHA17208	1007123	N/A	CORPORATION YARD 920 WALNUT AVE.
PW-07	2001	DODGE BR1500 PICKUP	1B7HC16X61S655824	1022189	YES	CORPORATION YARD 920 WALNUT AVE.
PW-08	1984	NISSAN PICK UP	JN6ND02S732007280	E469191	YES	CORPORATION YARD 920 WALNUT AVE.
PW-09	1987	FORD RANGER PICKUP	1FTCR10T4HUC83672	E084232	YES	CORPORATION YARD 920 WALNUT AVE.
PW-10	1986	GMC 6000 TRUCK	1GDG6H1J6TJ517286	E042954	YES	CORPORATION YARD 920 WALNUT AVE.

CITY OF GREENFIELD
VEHICLE EQUIPMENT INVENTORY 2004 - 2005

ID #	YEAR	MAKE/MODEL	VIN/SERIAL #	LICENSE #	2-WAY RADIO	LOCATION
PW-11	1974	INTERNATIONAL FLATBED	5DHA20819	E482092	N/A	CORPORATION YARD 920 WALNUT AVE.
PW-13	1977	GMC TRUCK	37V609340	E066238	YES	CORPORATION YARD 920 WALNUT AVE.
PW-15	1977	GMC 5YD DUMP #1	TCE617V607794	E285546	YES	CORPORATION YARD 920 WALNUT AVE.
PW-16	1977	GMC 5YD DUMP #2	TCE617V607823	E340589	YES	CORPORATION YARD 920 WALNUT AVE.
PW-17	1990	CHEVY S-10 PICK UP	1GCCS14ZXM8176437	E340590	YES	CORPORATION YARD 920 WALNUT AVE.
PW-18	2001	DODGE RAM 1500 PICKUP	1B7HC16X71S221976	1066627	YES	CORPORATION YARD 920 WALNUT AVE.
S-01	1982	SPEEDAIRE DAYTON COMPRESSOR	03208SL-166690	N/A		CORPORATION YARD 920 WALNUT AVE.
S-02	1986	INTL-TD20 BULLDOZER	20BP21373	N/A		SEWER PLANT - EAST END OF WALNUT
S-03	1982	SEWER MACHINE	A200601	E742747		CORPORATION YARD 920 WALNUT AVE.
S-06	1983	HUTCH MASTER STUBBLE DISC	10 004096	N/A		CORPORATION YARD 920 WALNUT AVE.
S-07	1995	ALLIS-CHAMBLERS GEN.	50/234/70	N/A		CORPORATION YARD 920 WALNUT AVE.
S-08	1997	SNIPER SEWER MACHINE	747-4000R	N/A		CORPORATION YARD 920 WALNUT AVE.
S-09	1994	CASE IH 7720 TRACTOR	JJA0056420	N/A		CORPORATION YARD 920 WALNUT AVE.
S-10	1988	5 SHANK RIPPER - BIG ED	SB520	N/A		CORPORATION YARD 920 WALNUT AVE.
S-11	1988	12' DRAG SCRAPER - BIG ED	12RS1198105HD	N/A		CORPORATION YARD 920 WALNUT AVE.
S-12	2002	TEEL MONITORING WELL PUMP	1P913A 1001	N/A		CORPORATION YARD 920 WALNUT AVE.
S-13	1984	HOMELITE TRASH PUMP	79102912	N/A		CORPORATION YARD 920 WALNUT AVE.

CITY OF GREENFIELD
VEHICLE EQUIPMENT INVENTORY 2004 - 2005

ID #	YEAR	MAKE/MODEL	VIN/SERIAL #	LICENSE #	2-WAY RADIO	LOCATION
ST-01	1986	STREET OILER	G100495	N/A		CORPORATION YARD 920 WALNUT AVE.
ST-02	1986	ASPHALT ROLLER	4-5-86127	N/A		CORPORATION YARD 920 WALNUT AVE.
ST-03	1985	WAYNE BUSH CHIPPER	501309803	N/A		CORPORATION YARD 920 WALNUT AVE.
ST-04	1999	ATHEY STREET SWEEPER	1A9M24DB9XR059010	1021834	YES	CORPORATION YARD 920 WALNUT AVE.
ST-05	1970	FORD AERIAL TRUCK	F81CCH99124	E778945		CORPORATION YARD 920 WALNUT AVE.
T-02	1999	CHEVY BUS	1GBJG31F3X1084501	1023724	YES	CORPORATION YARD 920 WALNUT AVE.
T-03	1992	FORD E-350 COLLINS BUS	1FDJE37M4NH32182	E372897	YES	CORPORATION YARD 920 WALNUT AVE.
PD-01	1998	FORD CROWN VIC - UNIT # 1	2FAFP71W1W1X150135	1014929	YES	CORPORATION YARD 920 WALNUT AVE.
PD-02	2000	FORD CROWN VIC - UNIT # 2	2FAFP71W5YX166812	1022197	YES	CORPORATION YARD 920 WALNUT AVE.
PD-03	2001	FORD CROWN VIC - UNIT # 3	2FAFP71W01X154184	1066639	YES	CORPORATION YARD 920 WALNUT AVE.
PD-04	2000	FORD CROWN VIC - UNIT # 4	2FAFP71W8YX111903	1022174	YES	CORPORATION YARD 920 WALNUT AVE.
PD-05	1999	FORD CROWN VIC - UNIT # 5	2FAFP71W6XX200867	1022172	YES	CORPORATION YARD 920 WALNUT AVE.
PD-06	1995	CHEVY CAPRICE - UNIT # 6	1G1BL52W1SR182550	E018236	YES	CORPORATION YARD 920 WALNUT AVE.
PD-07	2004	FORD CROWN VIC - UNIT # 7	2FAFP71W64X117757	1102922	YES	CORPORATION YARD 920 WALNUT AVE.
PD-08	2004	FORD CROWN VIC - UNIT # 8	2FAFP71W84X117758	1102923	YES	CORPORATION YARD 920 WALNUT AVE.
PD-09	2002	FORD CROWN VIC - UNIT #9	2FAFP71W42X115891	4Y8T089	YES	CORPORATION YARD 920 WALNUT AVE.
PD-10	1986	DODGE VAN - UNIT # 10	2B4HB11T6GK593686	E063724	YES	CORPORATION YARD 920 WALNUT AVE.
PD-11	2000	FORD CROWN VIC - UNIT # 11	2FAFP71W3YX170275	1066609	YES	CORPORATION YARD 920 WALNUT AVE.
PD-12	2000	FORD CROWN VIC - UNIT # 12	2FAFP71W1YX170274	1066610	YES	CORPORATION YARD 920 WALNUT AVE.

CITY OF GREENFIELD
VEHICLE EQUIPMENT INVENTORY 2004 - 2005

ID #	YEAR	MAKE/MODEL	VIN/SERIAL #	LICENSE #	2-WAY RADIO	LOCATION
PD-14	1996	FORD CROWN VIC. - UNIT #14	2FALP71W8TX180408	E049952	YES	CORPORATION YARD 920 WALNUT AVE.
PD-15	1999	DODGE VAN / EXPLORERS - UNIT # 15	2B5WB35Z3XK566099	1066649	YES	CORPORATION YARD 920 WALNUT AVE.
PD-16	2002	DODGE RAM VAN - UNIT # 16	2B4JB25Y42K114400	1066646	YES	CORPORATION YARD 920 WALNUT AVE.
PD-17	2004	FORD EXPEDITION - UNIT # 17	1FMFU16L94LA72888	1102924	YES	CORPORATION YARD 920 WALNUT AVE.
PD-18	1999	FORD CROWN VICTORIA	2FAFP71W8XX190326	4FBM598	YES	CORPORATION YARD 920 WALNUT AVE.
PD-33	1989	CHEVY CAPARICE - UNIT # 33	1G1BL5173KR209930	E270632	YES	CORPORATION YARD 920 WALNUT AVE.

3.6.2 Personnel Protective and Other Emergency Equipment

City of Greenfield has established written procedures for using and maintaining emergency response equipment. These procedures apply to any emergency equipment relevant to a response involving a toxic chemical, including all detection and monitoring equipment, alarms and communications systems, and personnel protective equipment not used as part of normal operations. Summary procedures are listed below:

- How and when to use the equipment properly.
- How and when the equipment should receive routine maintenance.
- How and when the equipment should be inspected and tested for readiness.
- Training requirements.

3.6.3 Telephone Equipment (none available)

Standard land-based telephones are potentially useful for communication during an emergency.

In general, during an emergency, use of telephones will be minimized. If employees see telephones off the hook they should hang them up. This will help the telephone company to restore service.

3.6.4 VHF Radio Communications

Specific instructions will be provided by City of Greenfield's Command Center on the operation and prioritization of City radio facilities. It is important to note that radio communications are NOT SECURE; therefore, radios must not be used to transmit sensitive messages or data that is not ready for public release or would give advantage to an attacker. For this reason, it is anticipated that radios will be of limited use during an attack on the water system, unless there is a loss of off-site power or other event affecting the land-based and cell phone service.

3.6.4.1 VHF Communications Channel

Channel	Use Group / Frequency
	155.895

The following Pages contain images of the instruction manuals located in the "Radios" Folder in the Office of the Secretary at the City of Greenfield's Corporation Yard at 920 Walnut Avenue, Greenfield, CA.



**CHALLENGER®
FM TWO-WAY RADIO**

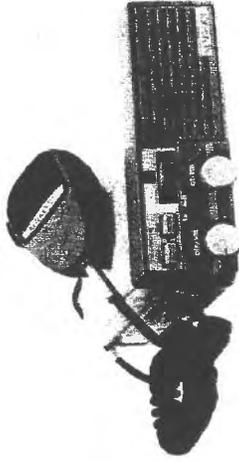


**OPERATING
MANUAL**

KENWOOD

TK-701S

INSTRUCTION MANUAL



INTRODUCTION

KENWOOD TWO-WAY radios are designed to provide dependable communications, and are simple and easy to operate.

The TK-701S incorporates the latest advances in TWO-WAY radio technology, providing communications that can be counted on to keep vehicles and personnel operating at peak efficiency.

WARNING!

Radio Frequency Energy Interference to Vehicular Electronics. Fuel injection, anti-skid braking, cruise-controls, and similar types of ELECTRONIC vehicular systems MAY malfunction due to their lack of protection from radio frequency energy which is present when transmitting.

If your vehicle contains such systems, have your radio installer determine if the vehicular equipment will perform normally when the radio is transmitting.

Should such problems arise, consult the VEHICLE manufacturer for radio frequency interference.

IMPORTANT!

U.S. LAW PROHIBITS THE OPERATION OF UNLICENSED RADIO TRANSMITTERS WITHIN THE TERRITORIES UNDER U.S. CONTROL. ILLEGAL OPERATION IS PUNISHABLE BY FINE OR IMPRISONMENT OR BOTH. REFER SERVICE TO A QUALIFIED FCC LICENSED TECHNICIAN ONLY.

1



3.7 Property Protection

In the event of a real or potential malevolent event, the Water Utility Emergency Response Manager (WUERM) will make the determination as to what water system facilities should be immediately "locked down," including the implementation of specific access control procedures and the establishment of a security perimeter. The possibility of secondary malevolent events will be considered, given that the initial act may be diversionary.

City of Greenfield personnel involved in an emergency response will take all necessary measures to protect potential evidence for law enforcement, should the event be declared a crime scene.

Specific lockdown procedures for each of City of Greenfield's major facilities are located in the Public Safety Building (Police Station) 215 El Camino Real.

4.0 SEMS/ICS Integration and Organization

The Standardized Emergency Management System is the system required by Government Code §8607(a) for managing response to multi-agency and multi-jurisdiction emergencies in California.

4.1 Five Levels of SEMS

There are five designated levels in the SEMS organization, as shown below. When resources become depleted or are not available at the field or local level, requests for resources are moved up through these levels until they are filled.

The type and severity of the incident determines the extent of activation for each level.

Field Response: The Field Response Level is where the Incident Command System is applied. At this level, emergency response personnel and resources are managed under ICS to carry out tactical decisions and activities in direct response to an incident or threat.

Local Government: Local Government includes City of Greenfield and Monterey County.

Operational Area: The Operational Area concept represents the intermediate level of the state's emergency organization, consisting of Monterey County, including *water districts* and *other special districts*, within the county area.

Regional: Because of its size and geography, the state of California has been divided into six mutual aid regions by the Governor's OES. In SEMS, the regional level manages and coordinates information and resources among operational areas within the mutual aid region and also between the operational areas and the state level.

State: The state level manages and coordinates state resources in response to the emergency needs of the other levels. This level manages and coordinates mutual aid among the mutual aid regions and between the regional and state levels. The state level also serves as the coordination and communication link between the state and federal disaster response system.

4.2 Five Principle Functions of SEMS

There are five principle functions within SEMS at each of the five organizational levels. They are Management ("Command" at the Field Level), Operations, Planning/Intelligence, Logistics, and Finance/Administration. These functions are modular in their design and can expand or contract depending on the needs of the incident.

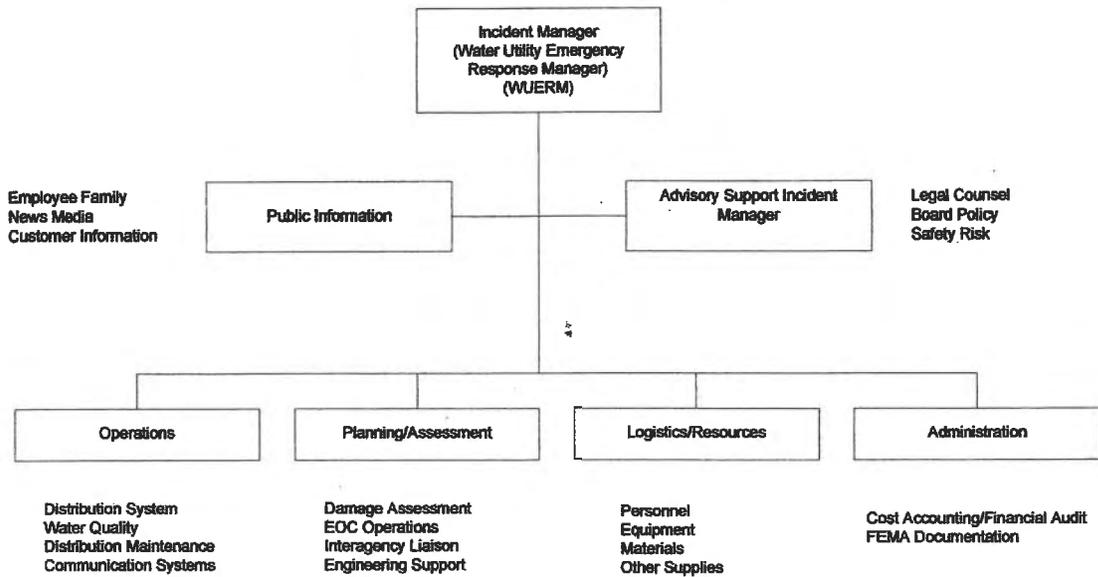
A summary of the functions and the responsibilities of each section, as they relate to the City of Greenfield's Operations during an emergency, is provided in the table below.

Function	Responsibilities
Management	<ul style="list-style-type: none"> • Serves as Command Staff and/or Incident Commander at the Field Level. • Directs Water System Emergency Operations Center (EOC). • May Serve as WUERM.
Operations	<ul style="list-style-type: none"> • Responsible for management of all operations directly applicable to the primary mission. • Operations Section Chief activates and supervises organizational elements in accordance with incident AP and directs execution of the AP. • Coordinates emergency response activities at the water utility EOC level. • Implements priorities established by management or Incident Command. • Field Coordinators <ul style="list-style-type: none"> - Operations staff who are linked to water utility personnel at other fixed facilities or who are assigned to incidents within the water utility. - Receive and pass information up the chain of command. - Receive and coordinate requests for services and support.
Planning/Intelligence	<ul style="list-style-type: none"> • Oversees the collection, evaluation, verification, and display of current information related to the emergency. <ul style="list-style-type: none"> - Understand current situation. - Predict probable course of the incident events. - Prepare alternative strategies and control operations for the incident. • Responsible for preparing action plans and maintaining documentation related to the emergency.
Logistics	<ul style="list-style-type: none"> • Provides facilities, services, and material in support of the Incident. • Oversees the acquisition, storing, and distribution of essential resources and support services needed to manage the emergency. • Tracks the status of resources. • Provides services to all field units in terms of obtaining and meeting their personnel, materials and equipment needs including communications.
Finance/Administration	<ul style="list-style-type: none"> • Responsible for all financial, administrative and cost analysis aspects of the incident. • Prepares vendor contracts, maintains records of expenditures for personnel and equipment, and maintains records and processes claims. • Provides preliminary estimates of damage costs and losses.

4.3 City of Greenfield Incident Command Structure

The following graphics illustrate the expanding nature of the ICS and show model ICS structures that can be used during an emergency. The intent is for the command structure to be expanded and contracted as necessary to provide the best fit for a particular situation. This template includes three different command structures for different-sized utilities, and for different levels of emergencies. Choose the template or templates that work best for your utility and edit them as necessary. Individual's names can be added to the graphics to designate specific roles and responsibilities.

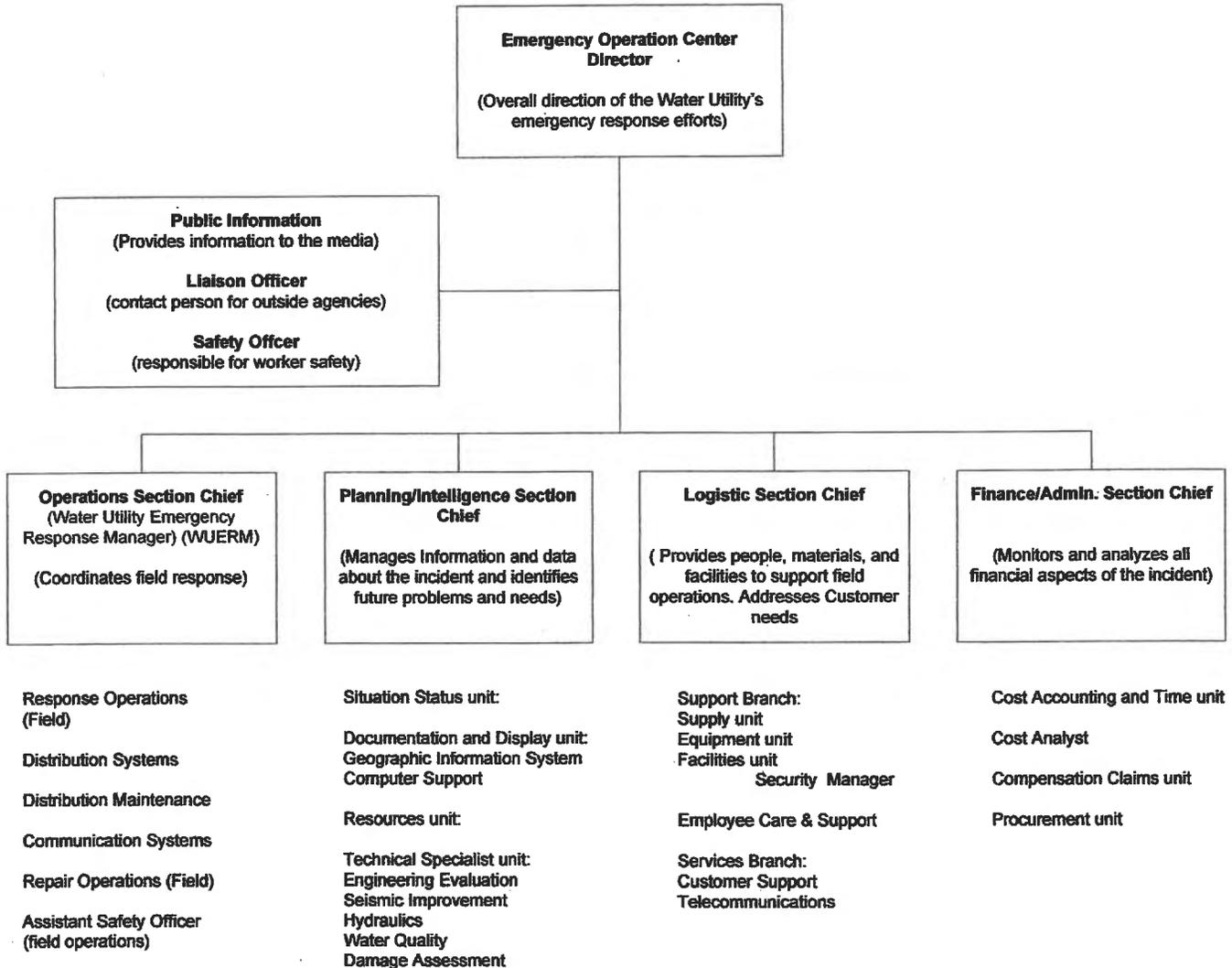
EXAMPLE OF SMALL WATER UTILITY UTILIZING A SEMS ORGANIZATION CHART



Section Leader Assignments

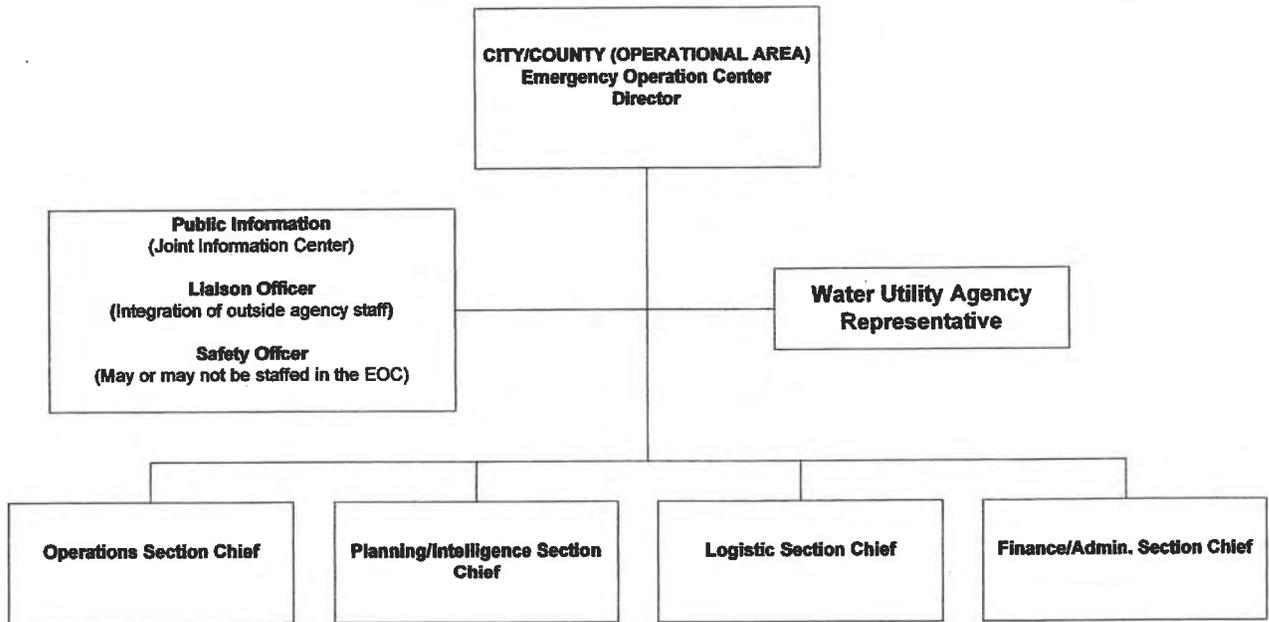
<u>SECTION</u>	<u>PRIMARY</u>	<u>ALTERNATE</u>
Incident Manager	General Manager or Water Utility Emergency Response Manager (WUERM)	Chief Engineer
Operations	Water Quality/District Superintendent or WUERM	Field Main. Superintendent
Planning/Assessment	Head of Engineering Services	Principal Engineer
Logistics/Resources	Asst. Field Maintenance Superintendent	Field Supervisor
Administration	Admin. Manager Accounting	Personnel Administrator Human Resources
<u>COMMAND STAFF</u>	<u>PRIMARY</u>	<u>ALTERNATE</u>
Public Information	Public Education Coordinator	Customer Service Admin.
Advisory Support	Safety Coordinator	Assistant Safety Coordinator

EXAMPLE OF A LARGE UTILITY UTILIZING A SEMS ORGANIZATIONAL CHART



Depending on the size and scope of the emergency, the Water Utility Emergency Response Manager (WUERM) may serve as the Emergency Operations Center Director until the position is delegated to a general manager or replacement for the duration of the incident.

EXAMPLE OF A CITY/COUNTY (OPERATIONAL AREA) EMERGENCY OPERATIONS CENTER WITH WATER UTILITY AGENCY REPRESENTATIVE



- | | | | |
|--|--------------------------------|---------------------------------|--|
| Fire & Rescue Branch
Coordinator | Situation Analysis Unit Leader | Communications Unit Leader | Time Keeping Unit Leader |
| Law Enforcement Branch
Coordinator | Documentation Unit Leader | Information Systems Unit Leader | Compensation and Claims
Unit Leader |
| Construction/Engineering Branch
Coordinator | Advance Planning Unit Leader | Transportation Unit Leader | Purchasing Unit Leader |
| Utilities Unit Leader | Demobilization Unit Leader | Personnel Unit Leader | Recovery Unit Leader |
| Damage/Safety Assessment
Unit Leader | Technical Services Unit Leader | Supply/Procurement Unit Leader | |
| Public Works Unit Leader | | Facilities Unit Leader Resource | |
| Medical & Health Branch
Coordinator | | | |
| Care & Shelter Branch
Coordinator | | | |

Water Utilities may be required to assign staff to the City or County (Operational Area) Emergency Operations Center (EOC) to coordinate with Public Health or any of the Sections that might need information or assistance. Typically, Water Utility Staff would report to the EOC as an Agency Representative and can move down, in the organization, to any of the sections as needed. Initially, the Water Utility Agency Representative would check in with the Liaison Officer, if one is not present, then he/she would report to the EOC Director.

4.4 Emergency Operations Center

4.4.1 EOC Description

City of Greenfield's EOC is a pre-designated facility to coordinate the overall response and support to an emergency. The primary EOC is located at the Public Works Department Corporation Yard.

City of Greenfield has also identified and stocked an alternate EOC in the event that the primary EOC is not available or rendered unusable by the emergency. The alternate EOC location is at City Hall.

During an emergency situation, the EOC will:

- Establish an EOC Director to manage the Operations, Planning/Intelligence, Logistics, Finance/Administration Sections, and related sub-functions.
- Set priorities and develop APs.
- Coordinate and support all field-level incident activities within the utility service area.
- Gather, process, and report information within the utility service area and to other levels of SEMS.
- Coordinate with local government, operational areas, or regional EOCs as appropriate.
- Request resources from higher SEMS levels.

The EOC has sufficient communication equipment (phones, computer, two-way, etc.), copies of all engineering and operational plans and procedures for the City of Greenfield, chalk or white boards, and tables and chairs sufficient to meet the needs of any on-site emergency.

4.4.2 EOC Activation

In the event a credible or confirmed threat has been established, the City of Greenfield staff will notify the SD and/or the General Manager (GM) or designated alternate. The SD/GM or alternate should then make the decision to activate the EOC. Once the decision to activate the EOC has been made, subsequent notification to the Local Government Agency should be made to notify the agency of the threat and the activation of the City of Greenfield EOC.

Based on the severity of the incident, the GM or designee may also recommend that the City of Greenfield's EOC be activated.

Once the City of Greenfield EOC has been notified of the threat and the City of Greenfield EOC activation, the City of Greenfield EOC designee should provide immediate, specific information to the relevant agencies by telephone (land line and/or cellular), facsimile, and e-mail and be prepared to describe the magnitude and potential impact of the event on public health and safety. Updates on the actions of the City of Greenfield, as well as damages and recovery actions, should be provided regularly and consistently during the event.

5.0 Concept of Operations

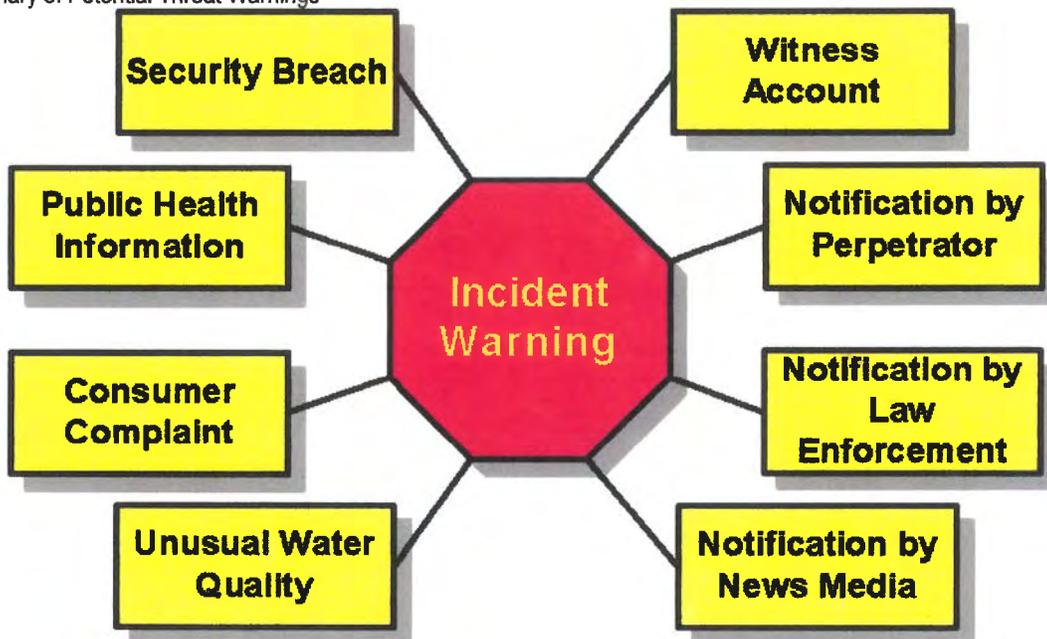
5.1 Decision Process

This section defines the decision process to be followed to determine if and when the ERP should be activated.

5.1.1 Threat Warning

The “threat warning” is the initial occurrence or discovery that triggers an evaluation of whether or not to activate the ERP. A description of the possible types of threat warnings that City of Greenfield may encounter is provided below. If any of these conditions are met, then a Threat Warning will be issued by the GM.

FIGURE 1
Summary of Potential Threat Warnings



5.1.1.1 Threat Warning Conditions

Security Breach. Physical security breaches caused by relaxed operations, such as unsecured doors or criminal acts such as trespassing, are probably the most common threat warnings.

Witness Account. Employees or neighbors may see suspicious activity, such as trespassing, breaking and entering, and other types of tampering, that they report to local law enforcement or water utility.

Notification by Perpetrator. A threat may be made directly to the water utility, either verbally or in writing. Historical incidents would indicate that verbal threats made over the phone are more likely than written threats.

Notification by Law Enforcement. City of Greenfield may receive notification about a threat directly from law enforcement. Such a threat could be a result of a report of suspicious activity or gathered by law enforcement intelligence.

Notification by News Media. A threat to contaminate the water supply might be delivered to the news media, or the media may discover a threat. A conscientious reporter should immediately report such a threat to the police, and either the reporter or the police would immediately contact the water utility.

Unusual Water Quality. All unusual changes in water quality should be investigated. Results should be ruled out that can be explained by the analytical detection method or on-line monitoring system (*i.e.*, false positives/false negative, known interferences, instrument reliability) or results from a known cause (*e.g.*, overdosing of coagulant).

Consumer Complaint. An unexplained or unusually high incidence of consumer complaints about the aesthetic qualities of drinking water may indicate potential contamination. Many chemicals can impart a strong odor or taste to water, and some may discolor the water.

Public Health Notification. The first indication that contamination has occurred may be victims showing up in local emergency rooms and health clinics. An incident triggered by a public health notification is unique in that at least a segment of the population has been exposed to a harmful substance.

5.1.2 ERP Activation

Once a threat warning is issued by the GM or his/her designee, the threat decision process begins. The WUERM or designated alternate should immediately be notified since this person will be involved in this decision process.

The threat decision process is considered in three successive stages: "possible," "credible," and "confirmed." As the threat escalates through these three stages, the actions that might be considered also change. The following table describes the stages, actions that will be taken, and activation of the ERP. The WUERM is responsible for working through the threat decision process and implementing the ERP as needed.

Decision Process Stage	Actions Taken	ERP Activation Level
Stage 1 Possible Threat	Evaluate available information. Review findings from VA. Determine if threat is possible. (Could something have actually happened?)	Implement precautionary response actions.
Stage 2 Credible Threat	Determine that threat is credible by establishing corroborating information.	Activate portions of ERP. • Initiate internal and external notifications.

Decision Process Stage	Actions Taken	ERP Activation Level
	<p>Highly credible source.</p> <p>Health department/customer reports.</p> <p>Unusual monitoring results.</p>	<ul style="list-style-type: none"> Issue public health advisories. Initiate water sampling and analysis. <p>Consider partial or full activation of City of Greenfield EOC.</p>
<p>Stage 3</p> <p>Confirmed Major Event</p>	<p>Confirm threat by verifying definitive evidence and information that establishes the major event.</p> <p>Perform water sampling and analysis.</p>	<p>Fully implement ERP.</p> <p>Immediately initiate appropriate APs.</p> <p>Fully activate City of Greenfield EOC.</p>

5.2 Response Capability Identified in the Water System VA

This section describes the response capabilities for City of Greenfield that were identified in the water system VA.

Response Type	Title	Description
Procedures	Emergency Operating Procedures	A set of procedures that define employee responses to specific types of emergency events.
Procedures	Coordination with Local Police Force	An agreement with local law enforcement units regarding the support the utility can expect from the agency and the type of training and support the utility will provide to responding police agencies.
Communication	Public Address or Other Warning System	Used to notify people within a facility of an incident. Should a building or entire facility need to be evacuated, it is important to have a means by which everyone can be notified.
Mitigation	Fire Brigade at the Plant	Training and equipping a group of first responders from the plant population.

5.3 Personnel Safety

The safety of City of Greenfield staff, emergency responders, and the public is paramount during an emergency. This section provides basic safety information and procedures to be followed in an emergency, including a toxic or potentially toxic release of chlorine or other chemical agents from a water treatment plant. Additional information regarding proper

procedures during and after a chemical release can be found in City of Greenfield's Risk Management Plan and in the associated AP. This section will cover Facility Protective Actions, Personnel Accountability, Public Notification for Protective Actions, and Emergency First Aid procedures.

5.3.1 Facility Protective Actions

Facility protective actions include sheltering-in-place, evacuation, and a combination of the two. When determining the appropriate protective action decision, the City of Greenfield GM/SD or designee will carefully consider:

- If a hazardous material is involved, its characteristics, amount, release rate, physical state, ambient temperature, and location
- The employees at risk and the capability and resources to recommend a protective action.
- The time factors involved in the emergency and their effect on the selected protective action.
- The effect of the present and predicted meteorological conditions (on the control of the hazardous material, storm warnings, flood stage level, etc.) and the feasibility of the protective actions.
- The capability to communicate with both the employees at risk and emergency response personnel before, during, and after the emergency.
- The capabilities and resources of the facility to implement, control, monitor, and terminate the protective action.

5.3.1.1 Evacuations

- Facility evacuation should follow the pre-designated evacuation routes from buildings and plant grounds as shown in Appendix B.
- These evacuation routes are posted at *the entrance to all buildings and within employee break areas*.
- If an evacuation is ordered by the GM/SD, all employees shall report to the pre-designated assembly areas shown on the evacuation plans to be accounted for by their *supervisor, assembly area coordinator, and other pre-designated individual*.
- Supervisors are responsible to assure their disabled employees are provided with adequate assistance during the evacuation.

5.3.1.2 Sheltering-in-place

- Sheltering in place should occur in the pre-designated facilities and locations as described in Section 5.5.1 and as shown in Appendix B.
- Locations should be equipped with emergency medical supplies and provisions.

5.3.2 Personnel Accountability

- All designated assembly areas are indicated on the facility evacuation plans.
- All personnel are responsible to report to their designated assembly area.
- *Supervisors* are responsible to assure all their personnel have reported after an ordered evacuation.
- Personnel who are not accounted for at the assembly area must be reported to the GM/SD to assure a proper response is coordinated. This response may include checking with other assembly areas, radio communication, or organization of a formal search.
- No search of a contaminated area should be performed unless all rescue personnel are fully equipped and trained for the expected hazards.

5.3.3 Off-site Protective Actions

Some hazardous materials hazards have the potential to affect off-site personnel and the local response agency may request support in making protective action decisions for the general public surrounding your facility.

City of Greenfield will respond to requests from the local agencies for recommendations, or protective actions for the general population surrounding the facility.

5.3.4 First Aid and Emergency Medical Treatment

- Call 911 for medical assistance.
- Assure emergency medical care is provided to injured persons, as necessary until off-site medical personnel arrive.
- If trained, provide emergency first aid for victims of heart attack, strokes, severe bleeding, and shock.
- *GM/SD should designate* a supervisor to coordinate off-site ambulance and medical assistance.
- Victims may need to be decontaminated if the emergency involves hazardous material.
- Control the scene to avoid further spread of contamination.
- Obtain accurate information on the health hazards of the material from Local Emergency Response Team, Safety Officer, MSDSs, or the Poison Control Center.
- Determine if there is a risk of secondary contamination to personnel or emergency transport vehicles/hospitals.
- If needed, follow your pre-determined decontamination protocol, which should include removing wet or exposed clothing, flushing affected skin and hair with water, and using soap or shampoo for oily substances.
- Provide post-emergency medical evaluation as required by Occupational Safety and Health Administration (OSHA).

5.4 Protective Action Protocols

The protocols that City of Greenfield uses for sheltering-in-place and for evacuation are described below.

5.4.1 Sheltering-in-Place Protocol

Evacuation during emergency incidents is sometimes, but by no means always, necessary. The emergency situation can escalate so rapidly that there would be no time to evacuate personnel. For hazardous weather conditions, a prudent course of action, for the protection of the potentially-affected employees/personnel, would be to remain inside with the doors and windows closed.

The SD or GM is responsible for determining whether sheltering-in-place is the most appropriate response to protect the vulnerable employees. If the decision is to shelter-in-place, then the affected employees will be advised to follow these guidelines to reduce the chance of being injured:

- Provide information on the procedure to employees and visitors on the facility public address system. If the information is provided to a local agency at their request, it should be coordinated through the Facility EOC.
- Close all doors to the outside and close and lock the windows.
- Inform staff to assemble at the *specify location* (preferred locations are windowless rooms).
- Close as many internal doors as possible.
- If an outdoor explosion is possible, close drapes, curtains, and shades over windows, stay away from windows to prevent potential injury from flying glass.

5.4.2 Evacuation Procedures

This evacuation procedure identifies the areas to be evacuated, as well as the warnings and instructions to personnel that must be provided. The assembly and shelter locations are identified in the posted facility evacuation plan.

5.4.2.1 Evacuation Areas

The evacuated areas may be expanded by the on-site or off-site Incident Commander. An incident resulting in off-site consequences (hazardous materials incident) shall determine evacuation requirements in conjunction with appropriate external agencies.

Decisions on evacuation are incident-specific and must be made at the time of incident. Estimated vulnerable zones that may be provided with the incident specific checklists should be used for planning purposes only and should not be used preemptorily in an emergency response situation.

5.4.2.2 Evacuation Warning and Instruction

Once the area to be evacuated has been identified, it is necessary to inform employees that they must evacuate:

- **Facility Personnel**
 - Public address system: Using either voice and/or tones that are pre-established and exercised evacuation routes and procedures.
 - Person-to-person: Not very rapid but can be very thorough.
 - Combination of both public address and person-to-person.

- **General Public (Responsibility of Local Public Responders)**

Although protective actions for the general public are the responsibility of the Local Government this information may be helpful if you are requested to provide recommendations to the local Incident Commander:

- Door-to-door: Requires significant personnel and is a slow process but is very thorough.
- Public address system (from a mobile unit or within a building): Requires fewer personnel than door-to-door and is quicker to accomplish but is not as thorough.
- Combination of Door-to Door and Public Address system: Dependent on the area to be evacuated a combination of methods of instruction may be warranted.

The method used to accomplish the evacuation will be determined by the Incident Commander and will be incident and site-specific. The evacuees should be told to report to their designated assembly areas and wait for further instructions.

5.4.3 Evacuee Assembly Areas

Evacuee assembly areas must be pre-designated for each area of the facility. Depending upon the conditions and requirements for the particular emergency, the Incident Commander may move or modify assembly area locations. The locations of the Evacuee Assembly Areas are:

Main Street School
Greenfield High School, 2025 El Camino Real
Oak Avenue Elementary School, Oak Avenue
Greenfield Vista Verge Middle School, 1199 Elm Avenue
Patriot Park, 13th Street
Greenfield Memorial Building, El Camino Real

Each manager/supervisor shall be responsible for head counts, assembly security and safety and will communicate with the Incident Commander to obtain support for various needs, such as food, water, medical aid, or transportation.

5.4.4 Shelter Locations

As necessary, the Incident Commander will select the most appropriate shelter from pre-identified shelter locations from the following list:

Main Street School

Greenfield High School, 2025 El Camino Real

Oak Avenue Elementary School, Oak Avenue

Greenfield Vista Verge Middle School, 1199 Elm Avenue

Greenfield Memorial Building, El Camino Real

Once the shelter location has been determined, the shelter information will be disseminated to:

- Incident site personnel.
- Assembly area personnel.
- EOC, if activated.
- Responders on-site: for example, the communications coordinator and *the Medical Unit*.

Once the facility employees are notified to evacuate they will proceed to their designated shelter.

The medical unit will be notified of the shelter locations and be provided with information on any injuries or the type of hazardous material and any known exposures.

Once an area is evacuated, the SD or designee must secure the area. Security personnel operating in or around an evacuated area must not be located in a hazardous or potentially hazardous area that would necessitate the use of personnel protective clothing or place them in an unsafe condition.

6.0 Communication Procedures

In general, communications during an emergency response will proceed along the chain of command of the SEMS/ICS. The number of people notified will increase as the incident expands and decrease as the incident contracts toward its conclusion.

The type and extent of the disaster will dictate the normal and/or alternative methods of communication that will be used. The possibility of a coordinated attack that targets the water, power, and communications systems must be considered. In this case, it would be reasonable to assume that some methods of communication will either be unavailable or limited to certain areas during an emergency. It is anticipated that employees will know upon arrival at their duty stations which communication systems are functional and which are not. This information should be relayed to the City of Greenfield Information Officer upon discovery.

City of Greenfield uses the ICS for its command structure during water emergencies. The table below describes the ICS command structure positions and shows which individuals will hold the various positions during different emergency situations (recognizing that at different stages of an event or for different severity of events that the person/position responsible in the ICS changes).

6.1 City of Greenfield Chain of Command

City of Greenfield Primary Position Descriptions and Assignments

Name and Title	Responsibilities during an Emergency	Contact Numbers
<p>(Foreman/Supervisor) Incident Commander</p> <p>(Actual person varies)</p>	<p>Sets incident objectives and priorities.</p> <p>Responsible for management of incident.</p> <p>Coordinates all emergency response activities between agencies.</p> <p>Communicates with all participants including those outside water utility.</p>	
<p>John Alves Water Utility Emergency Response Manager (WUERM)</p>	<p>Overall management and decision making for the water system.</p> <p>WUERM is lead for managing the emergency and contacting the regulatory agencies.</p> <p>All communications to external parties are approved by the WUERM.</p>	<p>Office: 1-831-674-2635 Cell: 1-831-595-1205 Pager: 1-831-674-0053 Home: 1-831-674-5566</p>

<p>(Foreman/Supervisor) Alternate WUERM (Actual person varies)</p>	<p>Takes over for primary WUERM if primary WUERM is unavailable.</p>	<p>Office: Cell: Pager: Home:</p>
<p>(Foreman/Supervisor) or Water Utility Emergency Operations Center Manager (WUOCM) (Actual person varies)</p>	<p>Heads water utility's EOC. Provides operational and resource management during an emergency.</p>	<p>Office: Cell: Fax: Pager: Home:</p>
<p>Anna Vargas, City Manager Public Information Officer PIO</p>	<p>Member of the command staff and reports directly to the Incident Commander. Interfaces with media and disseminates public information. Plans the information strategy.</p>	<p>Office: 1-831-674-5591 Cell: 1-831-594-8432 Home: 1-831-674-0480</p>
<p>Liaison Officer (Actual person varies)</p>	<p>Member of the command staff On-scene contact for representatives from other agencies.</p>	<p>Office: Cell: Pager: Home:</p>
<p>(Foreman/Supervisor) Safety Officer (Actual person varies)</p>	<p>Develops and recommends measures for assuring personnel safety. Assess and anticipates hazardous and unsafe conditions.</p>	<p>Office: Cell: Pager: Home:</p>
<p>Ginger Palmer Office Secretary</p>	<p>Responsible for administrative functions in the office. Receives customer phone calls and maintains a log of complaints and calls. In an emergency, could provide a standard carefully pre-scripted message for customers who call with general questions.</p>	<p>Office: 1-831-674-2635 Fax: 1-831-674-3259</p>
<p>John Alves Technical Specialist Water Quality Manager</p>	<p>In charge of collecting samples, having samples analyzed by certified labs, receiving the results. Determines the quality of the water being served meets all drinking water and public health requirements.</p>	<p>Office: 1-831-674-2635 Cell: 1-831-595-1205 Pager: 1-831-674-0053 Home: 1-831-674-5566:</p>
<p>(Foreman/Supervisor) Technical Specialist Wastewater Treatment Plant (WWTP) Operator (Actual person varies)</p>	<p>In charge of running wastewater treatment plant. Performs inspections, maintenance, sampling of the WWTP and relaying critical information to the WUERM. Assess WWTP facilities and treatment provided and provides recommendations to the WUERM.</p>	<p>Office: Cell: Pager: Home:</p>

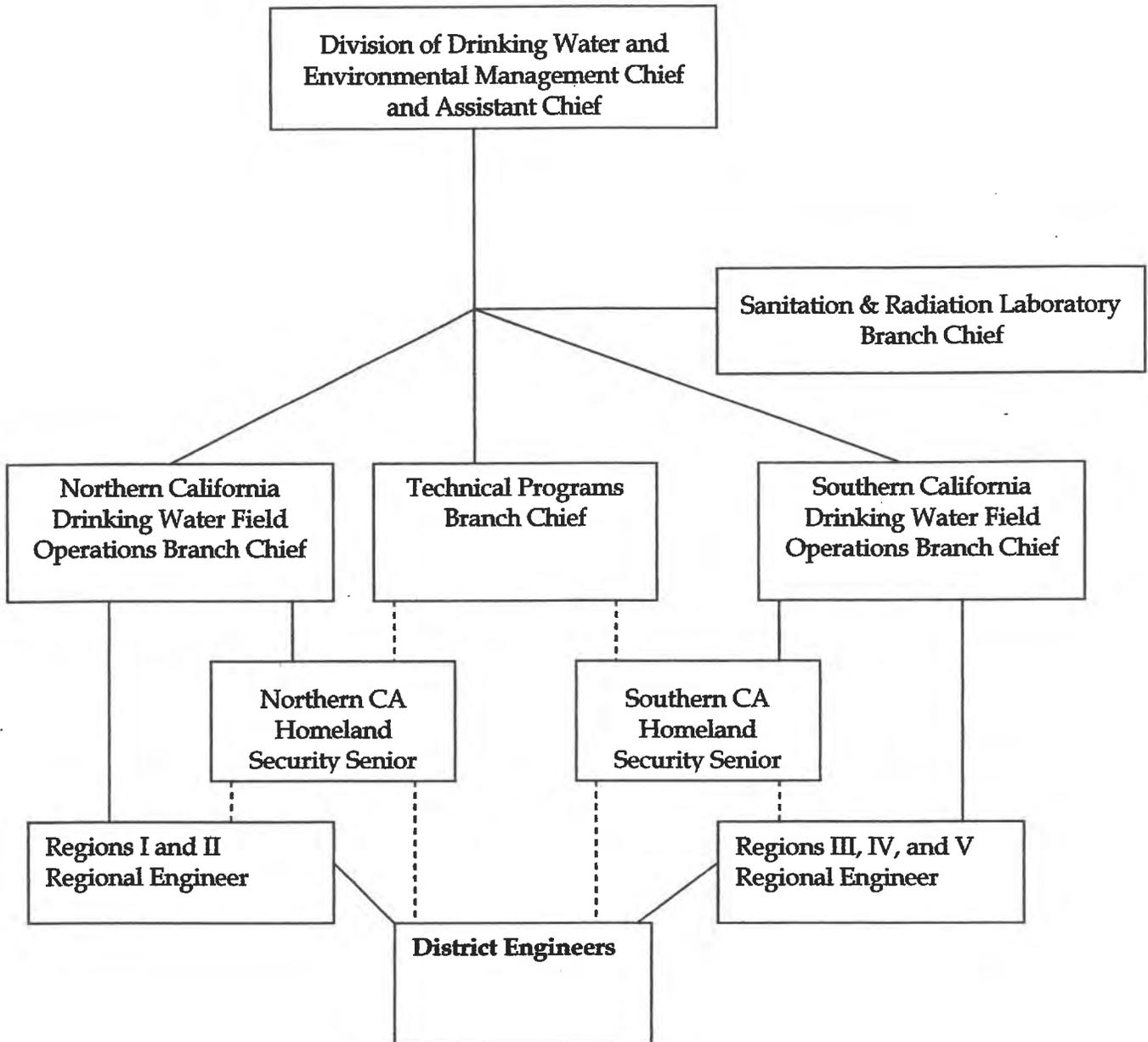
(Foreman/Supervisor) Technical Specialist John Alves, Water System Operator	In charge of operating the water system. Performs inspections, maintenance, sampling of the system and relaying critical information to the WUERM. Assess facilities and provides recommendations to the WUERM.	Office: Cell: Office: 1-831-674-2635 Cell: 1-831-595-1205 Pager: 1-831-674-0053 Home: 1-831-674-5566
(Foreman/Supervisor) Technical Specialist Field Staff (Actual person varies)	Delivers water quality notices or door hangers. Provides backup to water system operator. Conducts site inspections of all facilities.	Office: Cell: Pager: Home

6.2 Drinking Water Field Operation Branch – Chain of Command

The primary contact for the City of Greenfield during any emergency is the District Engineer. City of Greenfield will contact the District Engineer in the event of any emergency.

From the District Engineer, authority moves up the line to the Regional Engineer, Branch Chiefs, Assistant Division Chief, to finally the Chief of the Division.

The following flow chart shows the chain of command structure within the California Department of Health Services Drinking Water Program (DWP). The CDHS DWP Web site has a map showing all the contact information for each District Office and District Engineer. <http://www.dhs.ca.gov/ps/ddwem/technical/dwp/dwvindex.htm>. The figure can be modified to show your utility's command structure, and you can add names and contact numbers from the CDHS DWP Web site.



6.3 Notification Procedures

6.3.1 Initial Notifications

First Responders (911): If the situation is an emergency that needs response from local fire, law enforcement, medical or HAZMAT team, calling 911 should be the first immediate call.

City of Greenfield is aware that if the water system staff calls 911 from a cell phone, then the call is routed to the nearest California Highway Patrol Office, which may be in another city or county, and not in the immediate local 911 area. Direct phone numbers have been obtained from local first responders for the different 911 areas that are served by City of Greenfield. These numbers are shown in the Table C-1 in Appendix C.

6.3.2 Internal Contact List

The contact information in Table C-2 in Appendix C represents the network of City of Greenfield personnel and serves as the primary means of contacting internal staff.

If it becomes necessary to contact the staff member's family or emergency contact, the PIO will have primary responsibility for making the notification. The *Human Resources Manager* will assist the PIO with family member communications as needed.

6.3.3 External Contact List

Tables C-3, C-4, C-5, C-6, and C-7 in Appendix C contain contact information for the local and national agencies that City of Greenfield may need to notify. The WUERM will make the decision as to which of these agencies needs to be notified, and at what point in the threat evaluation the calls should be made. The PIO or Liaison Officer will serve as the water utility point of contact for these agencies.

In addition to the External Contact List in Appendix C, City of Greenfield maintains an Emergency Notification Plan (Appendix E) that includes day and evening phone numbers for the CDHS District Engineer and/or staff, CA State OES, and County Personnel. The Notification Plan also includes procedures for notifying the affected service area, and it is updated whenever there is a personnel change.

Note: Each PWS in California can obtain a specific Emergency Notification Plan form from their CDHS District Engineer. It is typically mailed/emailed with the Annual Reports and has current contact information for the CDHS DE, district staff, and County Personnel.

6.3.4 Additional Information on State of California Agencies

The initial notification response to any emergency should be to call 911 for the needed first responder and then to the CDHS DWP. The CDHS DWP is the Drinking Water Primacy Agency in California and has regulatory jurisdiction over all public water systems in the state.

Contact to the CDHS DWP should be to their District Engineer. If the water system is unable to contact the District Engineer (or one of their staff), the water system should use the California OES Warning Center Phone Number: 1-800-852-7550, which is a 24/7 phone number. A second phone number for the OES Warning Center is 916-845-8911.

A duty officer will answer the California OES Warning Center phone call and refer to statewide emergency phone numbers. In order to assist the duty officer-it will expedite response if you request the CDHS duty officer. The CDHS duty officer will then call management staff in the DWP to respond to the emergency.

The District Engineer will be able to assist City of Greenfield with:

- Inspections of water treatment plants, storage facilities, and watersheds (chemical contamination, sewage spills, erosion, and drainage diversions).
- Water quality sampling.
- Consulting with water system staff/operators.
- Providing technical assistance.
- Documenting the disaster's effect on the water system through photographs and reports.
- Keeping local officials advised of the current drinking water situation.
- Review plans and specifications for reconstruction projects, and issue amended permits as needed.
- Laboratory sampling analysis.

6.3.5 Critical Customers Contact List

In addition to the agencies listed in the previous tables in Appendix C, Table C-8 in Appendix C contains contact information for City of Greenfield's Critical Care Customers (Primary Notification) and Large Water Users (Secondary Notification). The WUERM will decide if the PIO will notify some or all of these customers in the event of an emergency involving the water system.

City of Greenfield's Water Quality Emergency Notification Plan, as required under Section 116460, California Health and Safety Code, is included in Appendix E of this ERP.

6.3.6 Contact Information for Fire-fighting Water Alternate Sources

If the water becomes contaminated with substances that render it unsafe to be used for fire-fighting, then an order will be issued to discontinue use of the affected fire hydrants. Alternate sources for fire-fighting water are shown in Table C-9 in Appendix C.

6.3.7 Contact Information for Bulk and Bottled Water Suppliers

City of Greenfield has identified agencies and private companies as shown in Table C-10 in Appendix C that could provide water supplies (bottled or bulk) in the event of an incident.

6.4 Public Notice Procedures

6.4.1 Media Notification

Effective communication with the public is a key element of this ERP. City of Greenfield personnel have been instructed to direct all media questions or information requests related to an emergency situation to City of Greenfield's Public Information Officer, PIO. The PIO is the official spokesperson for City of Greenfield and is the only City of Greenfield employee who is authorized to speak directly to public media representatives.

Table C-11 in Appendix C provides contact information for the various media agencies that City of Greenfield PIO might use to disseminate information to the public.

6.4.2 Public Notification

A Boil Water Order (BWO), Unsafe Water Alert (UWA), or Do Not Drink Notice can be issued by one, or a combination of the following agencies:

- CDHS DWP. Designated personnel: District Engineer, Regional Engineer or Branch Chief.
- Local County Health Department. Designated personnel: County Health Officer or Director of Environmental Health Department for small water systems under county jurisdiction.
- Affected Water System. Designated personnel: responsible person in charge of the affected water system (i.e., Director of Water Quality, Manager, Director of Water Department, Director of Public Works, Owner, etc.).

NOTE: If the City of Greenfield feels the event/circumstance requires IMMEDIATE issuance of a BWO/UWA and that public health is in serious risk, they may issue a BWO/UWA without first contacting the CDHS District Engineer. If that is the case, the City of Greenfield must notify CDHS, the County Health Officer and the Environmental County Health Department immediately after issuing a BWO/UWA. Usually a water system will not issue a public notice without the approval (or advisement/guidance from CDHS) as they do not want to take on the sole responsibility for the public notice. In that sense CDHS, will partner with the water system to make the public health decision whether to issue a BWO/UWA or not.

In the event that a BWO, UWA, or Do Not Drink Notice is issued by City of Greenfield, the GM is the person who has the authority to issue the public notice.

If a BWO or UWA is issued, the General Manager will notify the PIO in the EOC immediately.

City of Greenfield will ensure that all public notifications (BWO, UWA, or Do Not Drink Notices) will be coordinated with the CDHS District Engineer, County Environmental Health Department, and the County Public Health Officer prior to issuing a public notice.

City of Greenfield will notify the CDHS District Engineer, the County Environmental Health Department and the County Public Health Officer prior to or immediately after issuing a public notice. Notice must be given to a person rather than a message left on voicemail. Table C-12 in Appendix C shows the primary, 1st Alternate and 2nd Alternate contacts for the County Public Health Officer and the County Environmental Health Department.

City of Greenfield has prepared a series of public notices and press releases for use during various emergency situations in accordance with CDHS guidance. These notices can be found in Appendix D.

A summary of each of the notices, including guidance on when to issue each of them, is provided below.

Consumer Alert During Water Outages or Periods of Low Pressure: If the water system is experiencing power outages, water outages, or low-pressure problems, a consumer alert may be issued to the public. The notice provides consumers information on conserving water and how to treat the water with household bleach if the water quality is questionable.

BWO: A BWO should be issued when minimum bacteriological water quality standards cannot be reasonably assured. To assure public health protection a BWO should be issued as soon as it is concluded by the designated personnel that the water supply is or may be biologically unsafe. Examples of these situations include:

1. Biological contamination of water supply system, including but not limited to:
 - Positive total or fecal coliform bacteriological samples.
 - Prolonged water outages in areas of ruptured sewer and/or water mains.
 - Failed septic tank systems in close proximity to ruptured water mains.
 - Ruptured water treatment, storage, and/or distribution facilities in areas of known sewage spills.
 - Known biological contamination.
 - Cross-connection contamination problems.
 - Illness attributed to water supply.
2. Unusual system characteristics, including but not limited to:
 - Prolonged loss of pressure.
 - Sudden loss of chlorine residual.
 - Severe discoloration and odor.
 - Inability to implement emergency chlorination.
3. Implemented due to treatment inadequacies.

UWA/Do Not Drink: In the event a water quality emergency due to known or suspected chemical (non-bacteriological) contamination to the water system a UWA or Do Not Drink

should be issued. Water should not be used for drinking and cooking, but may be used for sanitation purposes. Examples of these situations include:

1. Known or suspected widespread chemical or hazardous contamination in water supply distribution, including but not limited to:
 - Ruptured water distribution system (storage tanks, mains) in area of known chemical spill coupled with loss of pressure.
 - Severe odor and discoloration.
 - Loss of chlorine residual.
 - Inability of existing water treatment process to neutralize chemical contaminants prior to entering the distribution system.
2. Threatened or suspected acts of sabotage confirmed by analytical results, including but not limited to:
 - Suspected contamination triggered by acts of sabotage or vandalism.
3. Emergency use of an unapproved source to provide a supplemental water supply.

UWA/Do Not Use: In the event a known or suspected contamination event occurs to the water system, where the contaminate may be chemical, biological, or radiological, a UWA or Do Not Use should be issued. Water should not be used for drinking, cooking, or sanitation purposes. Examples of these situations include:

1. Known or suspected widespread chemical or hazardous contamination in water supply distribution, including but not limited to:
 - Terrorist contamination event.

6.5 Cancellation of Public Notification

Once a BWO/UWA is issued, the only agency that can rescind the public notice is the drinking water primacy agency.

CDHS DWP will not lift the BWO until two rounds, collected one day apart, of coliform bacteria samples have been analyzed and the results are negative. City of Greenfield will fax two sets of sample results to the CDHS DWP District Office for final approval before rescinding the BWO.

Special chemical sampling will be required to rescind an UWA. City of Greenfield will contact the CDHS DWP District Office to determine required sampling.

7.0 Water Quality Sampling

NOTE: Laboratory protocols and procedures identified in Section 7.0 are still under development by federal and state Agencies. Water utilities are encouraged to customize this section to reflect the laboratory resources that are currently available, and to update this section as new information becomes available. Some utilities will rely primarily on the local HAZMAT team, health department, or emergency management agency to collect and analyze samples during a contamination threat or incident. If that is the case for your utility, completion of Section 7.8 should be sufficient water quality sampling information for your ERP.

During an emergency, there are several types of water quality sampling that may need to be analyzed depending on the actual event. If it is natural disaster, flood or power outage, sampling will probably only include bacteriological samples, turbidity and chlorine residual samples if the system is chlorinated. However, if the event is a terrorist act or contamination event, the sampling will include a full scan of Weapons of Mass Destruction (WMD) chemical, radiological, and microbiological (unless the actual contaminant used is known).

7.1 Laboratory Resources

In general there are four different types or ownership of laboratory facilities in California that can analyze drinking water samples, which are listed below:

1. Commercial/private laboratories
2. County Public Health Laboratories
3. State Department of Health Services Laboratories
4. Research Facility/Specialty Laboratories

In general, laboratories are grouped into two broad categories: chemical or biological. Chemical laboratories include general environmental chemistry laboratories, radiological laboratories, and specialty laboratories that may be able to handle and analyze exotic contaminants, such as chemical weapons and radionuclides. Biological laboratories include environmental microbiology laboratories and the Laboratory Response Network (LRN) that typically analyze clinical samples for pathogens and select biotoxins.

7.2 CDHS Laboratory

The CDHS Sanitation and Radiation Laboratories Branch (SRLB) is organized within the Division of Drinking Water and Environmental Management. SRLB is the State's primary drinking water quality testing laboratory and is the only State laboratory capable of measuring environmental radiation. Its primary mission is to provide analytical services, reference measurements and technical support pertaining to the State's Drinking Water and Radiological Health Programs.

SRLB has two laboratories: the Southern California Section is located in Los Angeles and performs microbiological, inorganic and organic testing in various water matrices; the Northern California Section, located in Richmond, carries out inorganic and organic analyses in water, and radiochemical testing in various environmental matrices in addition to water. The SRLB in conjunction with the CDHS Microbial Disease Laboratory (MDL) does microbiological analyses including biotoxins.

7.3 California Mutual Aid Laboratory Network

The CDHS SRLB—in conjunction with the water utilities, USEPA Region 9 laboratory in Richmond, Lawrence Livermore National Laboratory, and the California Department of Water Resources—have formed a laboratory network, the California Mutual Aid Laboratory Network (CAMAL Net), to address laboratory capacity issues associated with possible drinking water-related contamination events. CAMAL Net establishes a triage system to process samples when water systems or commercial laboratory methods are not available or the water system lacks capacity within their own lab. The CAMAL Net system will not handle any samples where field screening indicates that the sample may contain a Center for Disease Control (CDC) -listed WMD agent. The list of WMD agents can be found on the CDC Web page at <http://www.bt.cdc.gov/>. Any request for analysis through the CAMAL Net system needs to be approved by the CDHS DWP District Engineer in City of Greenfield's jurisdiction prior to collection of water quality samples to be processed.

7.4 Chemical Analysis Classification

The CDHS, along with its stakeholders and federal partners, are in the process of developing an algorithm to assist California water systems, public health agencies, law enforcement, and first responders with the identification of possible chemical agents in drinking water contamination events. A draft version has been developed, and it is anticipated that a final version will be released in the near future. The final version will become an appendix to this ERP.

7.5 Biological Analysis Classification

The LRN for Bioterrorism has ranked laboratories (Level A, B, C or D) based on the type of safety procedures they practice.

- Level A Lab uses a Class II biosafety lab (BSL) cabinet.
- Level B Lab is a BSL-2 facility + BSL-3 safety practices.
- Level C Lab is a BSL-3 facility.
- Level D Lab is a BSL-4 facility.
- Level A Labs are used to rule out and forward organisms.
- Level B Labs are used for limited confirmation and transport.
- Level C Labs are used for molecular assays and reference capacity.
- Level D Labs are used for the highest level of characterization.

Currently, in California there are 28 Level A labs, 10 Level B labs, and two Level C labs. The two Level C laboratories are the Los Angeles County Public Health Laboratory in Los

Angeles, California and the CDHS MDL in Richmond, California. Lawrence Livermore National Laboratory is also a Level C laboratory, but access to that lab is restricted. The only Level D laboratories available in the LRN are the national laboratories, such as those at the CDC and the Department of Defense. These laboratories test and characterize samples that pose challenges beyond the capabilities of the Level A, B, and C reference labs and provide support for other LRN members during a serious outbreak or terrorist event. The most dangerous or perplexing pathogens are handled only at the Bio-Safety Level 4 laboratories at CDC and the United States Army Medical Research Institute of Infectious Diseases.

7.6 Natural Disaster

During a natural disaster, flood, earthquake, fire etc., sample collection and analysis will be available to City of Greenfield by the normal laboratory resources. Sampling will primarily consist of regulatory bacteriological samples and turbidity to show that the system has been flushed out. City of Greenfield may also be collect chlorine residual samples throughout the system with a field chlorine test kit.

7.7 Terrorist Event/Contamination Event

Once a threat warning has occurred and City of Greenfield has deemed the threat confirmed, it will be necessary to collect water quality samples. The decisions made from the time of the threat warning to the time the threat is confirmed is specific to each individual event. This "credibility stage" may take between 2 and 8 hours and should involve consultation with local first responders, CDHS DWP (Drinking Water Primacy Agency), local Health Department, and the regional Federal Bureau of Investigation (FBI) office. For more detail on sampling during various stages of threat confirmation, see Action Plans 1A, 1B, and 1C.

Assuming the threat is credible enough to warrant water quality sampling, several state and federal agencies are involved to collect samples, transport the samples to appropriate laboratory, and analyze the samples.

City of Greenfield's first step in this process will be to contact the CDHS District Engineer so the utility can notify the CDHS-SRLB of the incoming samples. The following steps are described in more detail below:

The original sample kit was developed by the Metropolitan Water District of Southern California to be used during a terrorist or contamination event. USEPA reviewed the sample kit and provided a list of the sample bottles in the USEPA Toolbox. The CAMAL Net has also reviewed this kit and made some minor changes that will allow water quality samples to be collected under all conditions. The CAMAL Net version of the sample kit has been finalized for deployment. This kit will continue to evolve as the USEPA develops sampling protocols for these new constituents in drinking water. The estimated cost of one kit is approximately \$200.

CDHS DWP will purchase the supplies to create enough EWQSK to supply 2-3 in each DWP District Office. If water systems do not want to purchase and maintain their own kits, then the DWP will provide one of these kits in the event of an emergency. Requests for these kits should be made to the District Engineer when the water system reports the incident. Travel time from the District Office to the water system should be incorporated in the water system's emergency response plan.

- Emergency Water Quality Sampling Kit (EWQSK)
- Sample Collection
- Laboratory Required for Analysis
- Sample Transport
- Sample Analysis

7.7.1 Emergency Water Quality Sampling Kit (Not Applicable)

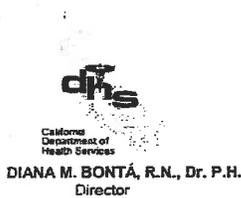
EWQSK contains sample bottles need for chemical, radiological, and microbiological analysis that can be split into three complete sample sets. A complete list of the EWQSK contents is provided in Appendix B. The EWQSK should remain sealed before the sample is collected. Since some of the sample bottles contain reagents that expire, the bottles in each kit are replaced annually.

7.7.2 Sample Collection

Several types of samples may need to be collected depending on the event. Sampling protocol includes:

- City of Greenfield will collect samples for public health to determine if the water is safe for consumption using the EWQSK for public health.
- City of Greenfield will assist the FBI as requested to collect samples for the crime scene investigation.
- City of Greenfield will also provide assistance as requested to responding agencies such as local HAZMAT, FBI, California National Guard Civilian Support Team (CST), or USEPA.
- Proper personal protection material will be used at all times to minimize exposure to any possible agent, and all personnel involved in sampling activities will be properly trained.

The following five (5) pages contain information pertaining to the City of Greenfield's Water Sampling Collection methods and procedures. The following text is for informational purposes only.



State of California—Health and Human Services Agency
Department of Health Services



GRAY DAVIS
Governor

June 30, 2003

TO: All Public Water Systems

RE: **Water Quality Monitoring Waivers for the Period of
January 1, 2002 - December 31, 2004**

The monitoring requirements for the constituents specified in the California Code of Regulations, Title 22, Chapter 15 provide for the Department to grant waivers from some chemical monitoring. In the past, the Drinking Water Field Operations Branch, Monterey District office (Department) has addressed waiver requests on a case-by-case basis. This individual evaluation of waiver requests results in a significant workload to staff. Additionally, the Department has historically provided individualized Water Quality Monitoring Plans to water systems on request. This likewise has created a tremendous workload for staff. We realize that our primary role is public health protection and, although water quality is a significant part of that, the process of creating monitoring plans and issuing waivers has been an ineffective use of staff time.

The Monterey District office has therefore developed standardized monitoring schedules that can be generated out of the Department's Water Quality Inquiry (WQI) database for each source. These monitoring schedules are generated based on a default monitoring frequencies and waivers assigned based on the type of source, the type of water system (community or Noncommunity) and the vulnerability of the source to contamination. A **Source Class Code** has been assigned to each source (wells, surface water, springs, etc) and correlate to these monitoring frequencies and waivers.

As part of the development of these standardized monitoring schedules, the Department has conducted a new review of waivers from monitoring for specific constituents, specifically cyanide, volatile organic chemicals (VOCs) and synthetic organic chemicals (SOCs). Vulnerability to SOCs has been determined for sources in agricultural and nonagricultural (but developed) areas specifically based upon the usage of chemicals on crops grown in this area and applications to right-of-ways, knowledge regarding the leachability of the contaminants through soil, and Department of Pesticide Regulation information regarding SOC constituents that have been found in groundwater. The frequency of VOC monitoring has also been re-evaluated based on the size of the water system.

Please find the following attached:

1. A listing of your sources with the newly assigned **Source Class Codes**.
2. A **Water Quality Monitoring Summary** showing the waivers and monitoring frequencies that have been established for your water system sources.



Do your part to help California save energy. To learn more about saving energy, visit the following web site:
www.consumerenergycenter.org/flex/index.html

Northern California Drinking Water Field Operations Branch
1 Lower Ragsdale, Building 1, Suite 120, Monterey, CA 93940-5741
(831) 655-6939; Fax (831) 655-6944
Internet Address: <http://www.dhs.ca.gov/ps/ddwem/>

Water Quality Monitoring Waivers & Schedule
June 30, 2003
Page 2

3. A **Water Quality Monitoring Schedule** from WQI showing last sample date, frequency and next due date for each constituent for which monitoring is required for all active and standby sources in your system.
4. A **Waiver Request Form**. For these waivers to be applicable to your system during this monitoring period (which ends December 31, 2004), we are asking that each system sign and return the enclosed Waiver Request Form. The waivers granted must be reviewed every 3 years. The next review will be for the monitoring period of January 1, 2005 through December 31, 2007. You will be notified in 2005 of any changes to the monitoring waivers granted, and a request will be made for the system to sign and return a Waiver Request Form for the waivers to be effective for that period.

Any waivers granted previously for this monitoring period are hereby voided. Please ensure that the monitoring is conducted for this period in accordance with the Water Quality Monitoring Schedule attached.

The monitoring schedules generated out of WQI may erroneously show sampling as 'Past Due' for your sources. This means that, although the system may have conducted the sampling, the data has not shown up in WQI. All source and treatment monitoring data must now be submitted electronically by the laboratory to the Department. There are sometimes errors in the transmission of data that results in the return of the data to the laboratory. There have been other identified errors that result in the loss of data also. We ask your patience in our implementation of the use of WQI for generating your monitoring schedules, and that you report any discrepancies in the status of your monitoring to us as soon as possible so that staff can begin in inquiry as to the reason for the missing data.

The monitoring schedules do not reflect initial monitoring for newly regulated constituents (such as MTBE), nor do they reflect the special monitoring for unregulated contaminants, which is due by the end of 2003. Please also note that the WQI report is unable to accurately reflect the monitoring frequency for radiological constituents of 4 quarterly samples every 4 years. We are therefore attaching a printout of all radiological, unregulated chemical and MTBE monitoring results since 1998 from which you can determine whether your sources have met the minimum monitoring requirements.

Please also note that the monitoring schedules are for source monitoring only, and do not reflect special monitoring required for treatment plants. Each water system has been advised of the monitoring requirements for their treatment and should continue to adhere to those requirements. If you have any questions regarding this matter, please contact me or my staff at (831) 655-6939.

Sincerely,



Betsy S. Lichti, P.E.
District Engineer, Monterey District
DRINKING WATER FIELD OPERATIONS BRANCH

Attachments:

Source Listing
Water Quality Monitoring Summary
Water Quality Monitoring Schedule
Waiver Request Form
Summary of Radiological, Unregulated Chemical and MTBE Monitoring

cc: County Environmental Health Departments

LIST OF SOURCES

STEM_NO	SYSTEM_NAME	SOURCE_NAME	CLASS	PRIMARY_STATION_CODE	STAT
10008	City of Greenfield	WELL 01 - CL2 TREATMENT	XCLD	2710008-008	AT
		WELL 01 - RAW	CLGA	2710008-001	AR
		WELL 02 - ABANDONED	XCLD	2710008-002	AB
		WELL 03 - ABANDONED	XCLD	2710008-003	AB
		WELL 04 - ABANDONED	XCLD	2710008-004	AB
		WELL 05 - CL2 TREATMENT	XCLD	2710008-009	AT
		WELL 05 - RAW	CLGA	2710008-005	AR
		WELL 06 - CL2 TREATMENT	XCLD	2710008-007	AT
		WELL 06 - RAW	CLGA	2710008-006	AR

PRIMARY STATION CODE - A UNIQUE NUMBER ASSIGNED TO EACH SOURCE TO BE USED FOR TRANSMITTING AND STORING WATER QUALITY DATA TO REPORT WATER QUALITY DATA FOR THE SOURCE.
 THE DEPARTMENT'S DATABASE. THIS NUMBER MUST BE USED BY THE LABORATORY

SOURCE CLASS - DEFINES A STANDARD SET OF MONITORING FREQUENCIES AND WAIVERS FOR ALL REGULATED AND UNREGULATED CONSTITUENTS, BASED ON A VULNERABILITY ASSESSMENT CONDUCTED BY THE DEPARTMENT. SOURCES WITH THE FOLLOWING SOURCE CLASSES HAVE NO MONITORING REQUIREMENTS: INAC, OTHR, DEAD, PURC AND XCLD.

WATER QUALITY MONITORING SUMMARY
 Community System, > 3300 population, groundwater/agricultural (CLGA)
 for the Monitoring Period of January 2002-December 2004

This schedule supersedes all previous monitoring schedules.

Chemical - Title 22	MCL (mg/l)	EPA Method	Frequency
Primary Inorganics - Section 64432			
Aluminum	1	200.7, 200.8, 200.9	Every 3 years
Antimony	0.006	200.8, 200.9	Every 3 years
Arsenic	0.05	200.7, 200.8, 200.9	Every 3 years
Barium	1	200.7, 200.8	Every 3 years
Beryllium	0.004	200.7, 200.8, 200.9	Every 3 years
Cadmium	0.005	200.7, 200.8, 200.9	Every 3 years
Chromium (total)	0.05	200.7, 200.8, 200.9	Every 3 years
Cyanide	0.15	335.4	Waived
Fluoride	2	300.0	Every 3 years
Mercury	0.002	245.1, 245.2, 200.8	Every 3 years
Nickel	0.1	200.7, 200.8, 200.9	Every 3 years
Selenium	0.05	200.8, 200.9	Every 3 years
Thallium	0.002	200.8, 200.9	Every 3 years
Asbestos - Section 64482			
Asbestos - Source Water	7 MFL	100.1, 100.2	Every 9 years for hard rock wells
Asbestos - Distribution System sampling If Asbestos-Cement pipe used	7 MFL	100.1, 100.2	Every 9 years if Aggressive Index <11.5
Nitrate/Nitrite - Section 64432			
Nitrate (as NO ₃ ⁻)	45	300.0, 353.2	Annually if < 23 mg/l*
Nitrite (as nitrogen)**	1	300.0, 353.2	Every 3 years if <0.5mg/l**
Nitrate + Nitrite (sum as nitrogen)	10		N/A
Secondary Standards - Table 64449-A			
Aluminum	0.2	200.7, 200.8, 200.9	Every 3 years
Color	15	200.7, 200.8, 200.9	Every 3 years
Copper	1.0	200.7, 200.8, 200.9	Every 3 years
Corrosivity	non-corrosive	Langlier Index	Every 3 years
Foaming Agents	0.5		Every 3 years
Iron	0.3	200.7, 200.9	Every 3 years
Manganese	0.05	200.7, 200.8, 200.9	Every 3 years
Methyl-tert-butyl ether (MTBE)	0.005	502.2, 524.2	See MTBE frequency on page 2
Odor	3		Every 3 years
Silver	0.1	200.7, 200.8, 200.9	Every 3 years
Thiobencarb	0.001	507, 525.2	Waived
Turbidity	5		Every 3 years
Zinc	5	200.7, 200.8	Every 3 years
General Minerals - Section 64449			
Bicarbonate Alkalinity	N/A		Every 3 years
Carbonate Alkalinity	N/A		Every 3 years
Hydroxide Alkalinity	N/A		Every 3 years
Calcium	N/A	200.7	Every 3 years
Magnesium	N/A	200.7	Every 3 years
Sodium	N/A	200.7	Every 3 years
Hardness	N/A		Every 3 years
pH	N/A	150.1, 150.2	Every 3 years
Secondary Standards - Table 64449-B			
TDS	500-1000;1500		Every 3 years
Specific Conductance	900-1600; 2200		Every 3 years
Chloride	250-500;600	300.0	Every 3 years
Sulfate	250-500;600	300.0, 375.2	Every 3 years
Radioactivity - Section 64441			
Gross Alpha	15 pCi/L	900.0	4 quarters every 4 years
Radium 226 + 228***	5 pCi/L	903.0, 903.1, 904.0	Only when GA > 5 pCi/L***
Uranium***	20 pCi/L	908.0, 908.1	Only when GA > 5 pCi/L***
Man Made Radioactivity - Section 64443			
Tritium	20000 pCi/L	906.0	Not Required
Strontium	8 pCi/L	905.0	Not Required
Gross Beta	50 pCi/L	900.0	Not Required

MCL = Maximum Contaminant Level

*Nitrate sampling shall be increased to quarterly following any result ≥ 23 mg/l.
This may be reduced to annual, upon request, if all 4 quarterly results are < 45 mg/l.

**Nitrite sampling shall be increased to quarterly following any result ≥ 0.5 mg/l.
This may be reduced to annual, upon request, if all 4 quarterly results are < 1.0 mg/l.

***Sampling for Radium 226, 228 and Uranium is required only when the Gross Alpha exceeds 5 pCi/L.

Updated June 2003

WATER QUALITY MONITORING SUMMARY
 Community System, > 3300 population, groundwater/agricultural (CLGA)
 for the Monitoring Period of January 2002-December 2004

This schedule supersedes all previous monitoring schedules.

Chemical - Title 22	MCL (mg/l)	EPA Method	Frequency*
VOCs - Table 6444CA (a)			
Benzene	0.001	502.2, 524.2	Every 3 years
Carbon Tetrachloride	0.0005	502.2, 524.2, 551.1	Every 3 years
1,2-Dichlorobenzene	0.6	502.2, 524.2	Every 3 years
1,4-Dichlorobenzene	0.005	502.2, 524.2	Every 3 years
1,1-Dichloroethane	0.005	502.2, 524.2	Every 3 years
1,2-Dichloroethane	0.0005	502.2, 524.2	Every 3 years
1,1-Dichloroethylene	0.006	502.2, 524.2	Every 3 years
cis-1,2-Dichloroethylene	0.006	502.2, 524.2	Every 3 years
trans-1,2-Dichloroethylene	0.01	502.2, 524.2	Every 3 years
Dichloromethane	0.005	502.2, 524.2	Every 3 years
1,2-Dichloropropane	0.005	502.2, 524.2	Every 3 years
1,3-Dichloropropane	0.0005	502.2, 524.2	Every 3 years
Ethylbenzene	0.3	502.2, 524.2	Every 3 years
Methyl-tert-butyl ether (MTBE)	0.013	502.2, 524.2	Every 3 years**
Monochlorobenzene	0.07	502.2, 524.2	Every 3 years
Styrene	0.1	502.2, 524.2	Every 3 years
1,1,2,2-Tetrachloroethane	0.001	502.2, 524.2	Every 3 years
Tetrachloroethylene (PCE)	0.005	502.2, 524.2, 551.1	Every 3 years
Toluene	0.15	502.2, 524.2	Every 3 years
1,2,4-Trichlorobenzene	0.005	502.2, 524.2	Every 3 years
1,1,1-Trichloroethane	0.2	502.2, 524.2, 551.1	Every 3 years
1,1,2-Trichloroethane	0.005	502.2, 524.2, 551.1	Every 3 years
Trichloroethylene (TCE)	0.005	502.2, 524.2, 551.1	Every 3 years
Trichlorofluoromethane	0.15	502.2, 524.2	Every 3 years
1,1,2-Trichloro-1,2,2-Trifluoroethane	1.2	502.2, 524.2	Every 3 years
Vinyl Chloride	0.0005	502.2, 524.2	Every 3 years
Xylenes (total)	1.75	502.2, 524.2	Every 3 years
SOCs - Table 6444FA (b)			
Alachlor	0.002	505, 507, 508.1, 525.2, 551.1	Twice
Atrazine	0.001	505, 507, 508.1, 525.2, 551.1	Twice
Bentazon	0.018	515.2, 555	Twice
Benzo(a)pyrene	0.0002	525.2, 550, 550.1	Waived
Carbofuran	0.018	531.1, 6610	Twice
Chlordane	0.0001	505, 508, 508.1, 525.2	Waived
2,4-D	0.07	515.1, 515.2, 515.3, 515.4, 555	Twice
Dalapon	0.2	515.1, 515.3, 515.4, 552.1, 552.2	Waived
Dibromochloropropane (DBCP)	0.0002	504.1, 551.1	Waived
Di(2-ethylhexyl)adipate	0.4	506, 525.2	Waived
Di(2-ethylhexyl)phthalate	0.004	506, 525.2	Waived
Dinoseb	0.007	515.1, 515.2, 515.3, 515.4, 555	Waived
Diquat	0.02	549.1, 549.2	Twice
Endothal	0.1	548.1	Waived
Endrin	0.002	505, 508, 508.1, 525.2, 551.1	Waived
Ethylene Dibromide (EDB)	0.00005	504.1, 551.1	Waived
Glyphosate	0.7	547, 6651	Waived
Heptachlor	0.00001	505, 508, 508.1, 525.2, 551.1	Waived
Heptachlor Epoxide	0.00001	505, 508, 508.1, 525.2, 551.1	Waived
Hexachlorobenzene	0.001	505, 508, 508.1, 525.2, 551.1	Waived
Hexachlorocyclopentadiene	0.05	505, 508, 508.1, 525.2, 551.1	Waived
Lindane	0.0002	505, 508, 508.1, 525.2, 551.1	Waived
Methoxychlor	0.03	505, 508, 508.1, 525.2, 551.1	Waived
Molinate	0.02	507, 525.2	Waived
Oxamyl	0.05	531.1, 6610	Waived
Pentachlorophenol	0.001	515.1, 515.2, 515.3, 515.4, 525.2, 555	Waived
Picloram	0.5	515.1, 515.2, 515.3, 515.4, 555	Waived
Polychlorinated Biphenyls	0.0005	508A	Waived
Simazine	0.004	505, 507, 508.1, 525.2, 551.1	Twice
2,3,7,8-TCDD (Dioxin)	0.00000003	1813	Waived
Thiobencarb	0.07	507, 525.2	Waived
Toxaphene	0.003	505, 508, 508.1, 525.2	Waived
2,4,5-TP (Silvex)	0.05	515.1, 515.2, 515.3, 514.4, 555	Waived

*This frequency applies only to chemicals for which previous results have shown no detectable results (ND).

**This frequency applies only after initial monitoring has been completed and no MTBE has been detected (ND).

Contact DWP for a special monitoring schedule when positive results are found.

7.7.3 Laboratory

Depending on the results of the field screening and actual event, the required laboratories will be notified and prepared to accept the samples. If an EWQSK (supplied by City of Greenfield or CDHS DWP) is used, the CAMAL Net and the LRN will be notified and involved in the process for laboratory selection. The first step in this process is for the District Engineer working with City of Greenfield to contact SRLB.

7.7.4 Sample Transport

Depending on the responding agencies and field screening results, the ICS will decide how the samples will be transported to the appropriate lab. Since the samples may be used for the crime investigation, proper chain-of-custody must be maintained. The possible agencies, depending on the event, are local HAZMAT teams, CHP, FBI, CST, or USEPA.

7.7.5 Sample Analysis

Once the samples are delivered to the appropriate laboratory, they may be split for analysis to different laboratories. The CDHS SRLB laboratory will handle the transport and laboratory testing protocols. Sample results will be shared through the ICS. Sample analysis may take days to weeks to complete depending on the complexity of analysis.

7.8 City of Greenfield Water Sampling and Monitoring Procedures

The City of Greenfield will have the primary responsibility for all water sampling and monitoring activities during an actual or potential contamination event. The City of Greenfield Laboratory Director (LD/Monterey County Health Department Representative) will provide technical support and advice to the local emergency management agency or HAZMAT team as needed throughout the incident.

The LD will also play a key role in the interpretation and communication of monitoring or lab results and will consult directly with the WUERM on significant findings.

Specific information and procedures regarding water sampling and monitoring is kept at the Public Works Department Corporation Yard.

The City of Greenfield laboratory has the following analytical capabilities: NONE

If outside laboratory assistance is needed, City of Greenfield will contact the following laboratory facilities:

Outside Laboratory Name	Contact Number	Capabilities
Monterey County Health Department Laboratory	Regular hrs: 831-755-4516 After hrs: 831-755-4516	Drinking water - water quality testing

8.0 Emergency Response, Recovery, and Termination

8.1 Response Phase

8.1.1 Initial Response

When a situation occurs that is judged to be of an emergency, "out of the ordinary," or of a suspicious nature, the person who first notices the situation should determine whether an immediate response by police, fire, or emergency medical services is necessary. If so, immediately call 911 to report the incident. Next, report the incident to your supervisor.

General information to be reported from City of Greenfield facilities (or incident sites) includes:

- What has happened?
- What can be done about it?
- What is needed?
- An assessment of whether the situation calls for activation of the City of Greenfield's EOC.

Additionally, immediate specific information should include the status of City of Greenfield's:

- Personnel
- Equipment
- Vehicles
- Communications capabilities
- Facilities

The employee who first noticed the incident and the Supervisor that responded should:

1. Notify the WUERM or the Alternate WUERM as soon as possible.
2. Remain in a safe location in the vicinity to meet and assist medical, fire, and police personnel and other first responders as necessary.

8.1.2 Damage Assessment

Damage assessment is used to determine the extent of damage, estimate repair or replacement costs, and identify the resources needed to return the damaged system to full operation. This assessment is accomplished during the emergency response phase of the event, before the recovery phase is implemented.

The WUERM is responsible for establishing a Damage Assessment Team.

The City of Greenfield Damage Assessment Team will be led by *an operations or maintenance supervisor, with representatives from engineering and procurement*. Team composition may vary, however, depending upon the nature and extent of the emergency.

Damage assessment procedures should follow the guidelines established for system operability checks and determination of operability/serviceability. At a minimum, the damage assessment team will:

- Conduct an initial analysis of the extent of damage to the system or facility.
- Estimate the repairs required to restore the system or facility; the estimate should consider supplies, equipment, rental of specialized equipment (e.g., cranes), and additional staffing needs.
- Provide this estimate to the procurement representative for a cost estimate to conduct repairs.

Appendix F contains a damage assessment form that can be used for all City of Greenfield facilities.

8.2 Recovery phase

8.2.1 Recovery Planning

During emergency response operations, the Incident Commander or WUERM will appoint a Recovery Manager. The Recovery Manager is responsible for selecting a recovery team and developing a recovery strategy prior to emergency termination.

The City of Greenfield Recovery Manager will be a senior operations representative familiar with the systems that may be affected by the emergency. He/she will have the responsibility and authority to coordinate recovery planning; authorize recovery activities; protect the health and safety of workers and the public; and initiate, change, or recommend protective actions. Additional responsibilities include:

- Facilitate the transition from emergency to recovery operations.
- Develop, implement, and maintain the Recovery Plan.
- Coordinate all vendor and contractor activities that occur on site.
- Ensure that the appropriate safety inspections have been completed.
- Coordinate the completion of emergency repairs and schedule permanent repairs.
- Notify key agencies of emergency repair status and the scheduled completion of system repairs.
- Complete permanent repair and/or replacement of system facilities.
- Review press releases prior to distribution.

- Release repaired facilities and equipment for normal use.
- Replace, or authorize the replacement of, materials and supplies used in the emergency.
- Document all recovery activities.

The Recovery Manager determines the expertise and selects the personnel necessary for the recovery team. In general, the composition of the recovery team is based on the nature and extent of the emergency and includes:

- Technical advisors to the Recovery Manager, which may include external experts such as industrial hygienists or fire protection specialists.
- Utility personnel with the technical expertise to direct post-incident assessment activities and to analyze the results. Maintenance, operations, and engineering staff are expected to fill these positions.
- PIO, who will respond to inquiries or concerns from employees, the public, the news media, and outside agencies. The PIO should be prepared to provide information regarding the results of the incident investigation, the extent of on-site and off-site impacts, and the status of recovery operations.

8.2.2 Recovery Activities

The following activities will be directed by the Recovery Manager and will be executed by the recovery team as required following an incident or emergency situation.

- Notify all appropriate regulatory agencies that recovery phase is underway.
- Install warning signs, barriers, and shielding as needed.
- Take measures to protect workers and the public from hazardous exposures.
- Complete detailed evaluations of all affected water utility facilities and determine priorities for permanent repair, reconstruction, or replacement at existing or new locations.
- Begin repair activities design and make bids for contractor services.
- Make necessary repairs to the system and un-tag repaired facilities and equipment.
- Restore all telecommunications, data processing, and similar services to full operation.
- Complete assessment of losses and costs for repair and replacement, determine approximate reimbursements from insurance and other sources of financial assistance, and determine how residual costs will be financed by the water utility.
- Define needs for additional staff, initiate recruitment process, and adopt temporary emergency employment policies as necessary.
- Execute agreements with vendors to meet service and supply needs.
- Address needs for handling and disposing of any hazardous waste generated during recovery activities.

- Control discharges as a result of recovery activities within regulatory and environmental compliance limits.
- Reevaluate need for maintaining the emergency management organization; consider returning to the normal organizational structure, roles, and responsibilities when feasible.
- Collect cost accounting information gathered during the emergency and prepare request for Emergency Disaster Funds (follow FEMA and State OES requirements).
- Debrief staff to enhance response and recovery efforts in the future by identifying lessons learned, developing action plans and follow-up mechanisms, and providing employee assistance programs if needed.
- Prepare After-Action Reports as required. Complete reports within 6 months of the event (90 days for public utilities which are part of a city or county government.).

8.3 Termination and review phase

The Recovery Manager will officially terminate the recovery phase when normal operations are resumed at all facilities affected by the emergency. Termination and review actions include the following:

- Initiate permanent reconstruction of damaged water utility facilities and systems.
- Obtain inspections and/or certifications that may be required before facilities can be returned to service.
- Restore water utility operations and services to full pre-event levels.
- Determine how emergency equipment and consumable materials should be replenished, decontaminated, repaired or replaced.
- Identify operational changes that have occurred as a result of repair, restoration, or incident investigation.
- Document the recovery phase, and compile applicable records for permanent storage.
- Continue to maintain liaison as needed with external agencies.
- Update training programs, the City of Greenfield ERP, and standard operating procedures, as needed, based upon lessons learned during the emergency response and recovery phases of the event.

9.0 Emergency Plan Approval, Update, Training, and Exercises

This section of the ERP describes the plan review and approval process, the practice and update schedule, plan for assessment of the ERP effectiveness and training, exercises, and drills of the ERP.

9.1 Plan Review and Approval

The City of Greenfield process for review and approval of the ERP is described in the sections below.

9.1.1 City of Greenfield Approval Authority

This plan is intended to be a living document that is reviewed regularly and updated as needed to ensure that the information it contains is correct. The ERP will be reviewed and approved by the WUERM, GM, and other approval personnel. The plan will undergo an initial review and approval process and will be reviewed and signed off by the SD after each revision. A revision log is found in the front of the ERP binder.

9.1.2 Local Government Approval

Local Government will review this plan annually for coordination and consistency with the *City's* emergency planning programs.

9.2 Practice and Update Schedule

The schedule for training, updating, and review of the ERP is discussed below.

9.2.1 Schedule and Responsibility for Training and Exercises

A schedule for general security training and incident-specific exercises/drills for testing of the emergency response plan will be developed and reviewed annually.

The exercises, drills, and training sessions will be conducted annually or more frequently if the SD deems it necessary.

The SD will be responsible for the organization and management of the security-training program.

9.2.2 Schedule for ERP Review and Update

The SD will review and update the ERP and APs as follows:

- Annually prior to the annual ERP/AP training sessions.
- Upon update of the VA.

- Following the ERP exercises.
- Within 2 months of any significant plant modification or water system change.
- Immediately when there is a City of Greenfield Staff change where the staff member was named in the ERP.
- Immediately when there is a change in the roles and responsibilities of anyone involved in response activities.
- Immediately upon changes in internal and external contact information.

Add specific procedures for updating the document (for example, change request form) and procedures for ensuring that all ERP holders receive updates.

9.3 Assessment of ERP Effectiveness

To evaluate the effectiveness of the ERP and to ensure that procedures and practices developed under the ERP are adequate and are being implemented properly, the City of Greenfield staff will perform audits of the program on a periodic basis.

One method of audit will be through exercises and drills. Members of City of Greenfield management will act as observers during the exercises and will evaluate the staff's performance in responding to emergency incidents as well as the overall effectiveness of the ERP in accomplishing their goals. City of Greenfield management will review the results of the evaluation, and the ERP and APs will be updated as appropriate to incorporate any lessons learned from the exercises.

The ERP program will also be discussed as an agenda item during the GM's meeting each time the VA is updated. At this time, City of Greenfield management and staff will discuss the need to update or augment the ERP based on new information regarding threats or critical asset vulnerability.

The SD will maintain a file of ERP assessment and after-action reports.

9.4 Training, Exercises, and Drills

All City of Greenfield personnel who may be required to respond to emergencies will receive initial and refresher training class on this ERP. The training will be conducted annually or when any of the following occurs:

- New employees are hired.
- Special emergency assignments are designated to operations staff.
- New equipment or materials are introduced.
- Procedures are updated or revised.

The training will consist of the following programs:

Orientation Sessions: The orientation sessions will include basic instruction and explanation of the ERP and AP procedures. Written tests may be used to ensure some level of comprehension by the attendees.

Table Top Workshop: Table top workshops involve developing scenarios that describe potential problems and providing certain information necessary to address the problems. Employees will be presented with a fabricated major event. Next they will verbally respond to a series of questions and then evaluate whether their responses match what is written in the ERP.

Functional Exercises: The functional exercise is designed to simulate a real major event. A team of simulators is trained to develop a realistic situation. By using a series of pre-scripted messages, the simulation team sends information in to personnel assigned to carry out the ERP procedures. Both the simulators and personnel responding to the simulation are focused on carrying out the procedures to test the validity of the ERP.

Full-scale Drills: Emergency response personnel and equipment are actually mobilized and moved to a scene. A problem is presented to the response personnel, and they respond as directed by the ERP and the Incident Commander or WUERM at the scene.

10.0 References and Links

The following is a list of references and Internet links that provide additional water system security and ERP information.

California Department of Health Services Drinking Water Program: CDHS DWP is the Drinking Water Primacy Agency for all California public water systems serving over 200 service connections. CDHS has published a guidance document to assist California public water systems in developing or revising their emergency response plans. General information, as well as the guidance document and its appendices, is available at <http://www.dhs.ca.gov/ps/ddwem/homeland/default.htm>.

Department of Homeland Security (DHS): DHS is the overall lead agency for homeland security issues. DHS will become involved in incident response if needed. General information is available at <http://www.dhs.gov/dhspublic>.

United States Environmental Protection Agency: USEPA has numerous resources available. The following are key sources:

- Water Infrastructure Security information, guidance, and training information can be found at <http://www.epa.gov/safewater/security/index.html>.
- Information on Local Emergency Planning Committees (LEPCs) can be found at <http://www.epa.gov/ceppo/lepclist.htm>.

The Center for Disease Control and Prevention: The CDC develops resources to assist hospital staff, clinics, and physicians in diagnosing diseases related to terrorism, reporting incidences of disease, and controlling the spread of infection. Information on emergency preparedness and response can be found at <http://www.bt.cdc.gov/>.

- To assist in the development of a Public Health Response Plan, the CDC published a planning guidance document entitled *The Public Health Response to Biological and Chemical Terrorism: Interim Planning Guidance for State Public Health Officials* (July 2001), which can be found at <http://www.bt.cdc.gov/Documents/Planning/PlanningGuidance.pdf>.
- *Interim Recommended Notification Procedures for Local and State Public Health Department Leaders in the Event of a Bioterrorist Incident* can be found at <http://www.bt.cdc.gov/EmContact/Protocols.asp>.

Federal Emergency Management Agency (FEMA): FEMA's mission is to reduce loss of life and property and protect our nation's critical infrastructure from all types of hazards through a comprehensive, risk-based, emergency management program of mitigation, preparedness, response and recovery. FEMA takes the lead if an incident is assigned to DHS. General information can be found at <http://www.fema.gov>. In addition, several online training courses relevant to emergency management are available on-line from FEMA at <http://training.fema.gov/EMIWeb/IS/crslist.asp>.

The American Water Works Association (AWWA): USEPA training developed through partnership with AWWA covers the entire spectrum of security issues including assessing vulnerabilities, emergency response plans, and risk communication. AWWA information can be accessed at <http://www.awwa.org>. Specific AWWA resources can be found at <http://www.awwa.org/communications/offer/secureresources.cfm>.

The Association of State Drinking Water Administrators (ASDWA): ASDWA has information on water security planning, training, and links to state programs and other information sources. Go to the security link at <http://www.asdwa.org/>.

National Rural Water Association (NRWA): NRWA developed the SEMS Software Program, which can be loaded on a personal computer. It is based on NRWA/ASDWA's *Security Vulnerability Self-Assessment Guide for Small Drinking Water Systems Serving Populations between 3,300 and 10,000*. More information can be found at <http://www.nrwa.org/>.

Agency for Toxic Substances and Disease Registry (ATSDR): ATSDR is directed by congressional mandate to perform specific functions concerning the effect on public health of hazardous substances in the environment. These functions include public health assessments of waste sites, health consultations concerning specific hazardous substances, health surveillance and registries, response to emergency releases of hazardous substances, applied research in support of public health assessments, information development and dissemination, and education and training concerning hazardous substances. More information can be found at <http://www.atsdr.cdc.gov/>

Appendix A
Action Plans

AP 1A - Threat of or Actual Contamination to Water System

POSSIBLE STAGE

<p>AP Summary:</p>	<p>This Action Plan applies to the intentional introduction of a contaminant into the water system. The contaminant could be introduced at any point within the system, including raw water, treatment facilities, distribution system including distribution pipes, finished water storage, or pump stations. The adversary may or may not give notice of the contaminant or provide the location. Contamination may have actually occurred or it may be a hoax.</p>	
<p>Initiation and Notification:</p>	<p>1. Initiate this AP if any of the following has occurred:</p> <p>Security Breach (including, for example):</p> <ul style="list-style-type: none"> • Unsecured Doors • Open Hatches • Unlocked/Forced Gates • Alarm Triggered <p>Witness Account (including, for example):</p> <ul style="list-style-type: none"> • Suspicious Activity • Trespassing • Breaking and Entering • Tampering with Equipment or Property <p>Direct Notification by Perpetrator (including, for example):</p> <ul style="list-style-type: none"> • Verbal Threat • Threat in Writing <p>Notification by Law Enforcement (including, for example):</p> <ul style="list-style-type: none"> • Suspicious Activity • Threat made to Water System <p>Notification by News Media (including, for example):</p> <ul style="list-style-type: none"> • Threat Delivered to News Media • Media Discovers Threat <p>Unusual Water Quality Parameters (including, for example):</p> <ul style="list-style-type: none"> • Changes in pH, chlorine residual or turbidity • Unexpected monitoring or sampling results 	<p><i>Use this AP if you receive any incident warning (see types of warnings to left) indicating possible contamination of your water system</i></p> <p><i>If you have evidence that corroborates the warning, or if collective information indicates that contamination is likely, GO TO AP 1B – CREDIBLE STAGE.</i></p> <p><i>If there is confirmed evidence and/or definitive information that the water system has been contaminated. GO TO AP 1C – CONFIRMED STAGE.</i></p>

AP 1A - Threat of or Actual Contamination to Water System

POSSIBLE STAGE

	<ul style="list-style-type: none"> • Strange odor, color or appearance <p>Customer Complaints (including, for example unexplained or unusually high complaints of):</p> <ul style="list-style-type: none"> • Odor • Color or Appearance • Taste <p>Public Health Notification (including, for example):</p> <ul style="list-style-type: none"> • Victims in Emergency Rooms and/or Clinics • High Incidence of Similar Health Complaints in one Local Area 	
Initiation and Notification:	2. Notify WUERM, John Alves or [Alternate WUERM] immediately upon discovery of any of the above Threat Warnings.	<i>The individual who first notices or receives the threat warning should contact the WUERM, John Alves immediately by whatever means of communication may be available.</i>
Equipment Identified:	<p>Equipment: Types of equipment needed are determined by the first responder at the site, and communicated to the PWD Corporation Yard.</p> <p>Location: All appropriate equipment (hand tools and heavy equipment) for each utility is stored at the PWD Corporation Yard.</p>	<i>This equipment is available to assist in the execution of this AP.</i>
Specific Activities:		
I. Assess the Problem	<p>A. Complete the following Threat Warning Report Forms according to the type of Threat Warning received. (Appendix F of ERP).</p> <ul style="list-style-type: none"> • Security Incident Report Form • Witness Account Report Form • Phone Threat Report Form <i>(to be filled out during actual phone call)</i> • Written Threat Report Form 	<i>Threat Warning Report Forms help document, organize and summarize information about a security incident. The individual who discovers the incident warning, the WUERM, John Alves, or another designated individual may complete the form. Only the form that corresponds to the type of threat warning needs to</i>

AP 1A - Threat of or Actual Contamination to Water System

POSSIBLE STAGE

	<ul style="list-style-type: none"> • Water Quality / Consumer Complaint Report Form • Public Health Information Report Form <p>B. Complete Threat Evaluation Worksheet (Appendix F of ERP).</p> <p>C. Evaluate Threat Evaluation Worksheet, and determine if threat is Possible.</p> <p style="padding-left: 40px;">If YES, perform Response Steps 1 – 8 below.</p> <p style="padding-left: 40px;">If NO,</p> <ol style="list-style-type: none"> i. Return to normal operations. ii. Document and record the threat for future reference. 	<p><i>be completed. Completion of the form should not distract emergency responders from more urgent matters.</i></p> <p><i>Threat Evaluation Worksheets help organize information about a threat warning that will be used during the Threat Evaluation Process. The individual responsible for conducting the Threat Evaluation (e.g., the WUERM, John Alves) should complete this worksheet.</i></p>
<p>II. Isolate and Fix the Problem</p>	<ol style="list-style-type: none"> 1. Notify local law enforcement. 2. Notify State Drinking Water Agency. 3. Do not disturb site if location could be possible crime scene. Consult Maintaining Crime Scene Integrity Form in Appendix F. 4. Alert staff and emergency response personnel about threat. 5. Consider containment / isolation, elevating chlorination, and/or discharge of suspect water. 6. Evaluate spread of suspect water and potential impact on public health. 	<p><i>Notification phone numbers can be obtained from the Organization Contact List in Appendix C of the ERP.</i></p> <p><i>The immediate operational response actions are primarily intended to limit exposure of customers to potentially contaminated water.</i></p> <p><i>See EPA Toolbox Module 2, Section 3.3.2 for guidance on containing contaminants and evaluating movement of potentially contaminated water through distribution systems.</i></p>
<p>III. Monitoring</p>	<p>7. Initiate Site Characterization Activities:</p> <ul style="list-style-type: none"> • Define the investigation site. • Designate site characterization team members. • Conduct preliminary assessment of potential site hazards. • Approach site and conduct field safety screening to detect any hazards to the characterization team. 	<p><i>Site Characterization is intended to gather critical information to support the 'credible' stage of threat evaluation.</i></p> <p><i>If signs of a hazard are evident during the site approach, the team should halt their approach and immediately inform the WUERM, John Alves of their findings. The site may then be turned over to the</i></p>

AP 1A - Threat of or Actual Contamination to Water System

POSSIBLE STAGE

	<ul style="list-style-type: none"> • Search for physical evidence (discarded containers, etc.). • Investigate records from CCTV cameras. • Look for environmental indicators (dead animals or fish, dead vegetation, unusual odors or residues). • Perform rapid field testing of the water. • Collect water samples according to sampling plan. 	<p><i>HAZMAT Team.</i></p> <p><i>The WUERM, John Alves may determine the threat is credible based preliminary information before the site characterization has been completed.</i></p>
<p>IV. Recovery and Return to Safety</p>	<p>8. Determine if threat is credible.</p> <p>If YES, initiate AP 1B.</p> <p>If NO,</p> <ul style="list-style-type: none"> • Return to normal operations. • Store water samples for forty-eight (48) hours. 	<p><i>You should determine whether or not the threat is 'credible' within 2 to 8 hours (preferably within 2 hours) from the time the threat is deemed 'possible', depending on the effectiveness of the containment strategy.</i></p> <p><i>If the threat is not deemed 'credible', the samples obtained during site characterization should be stored in case the situation changes and analysis is determined to be necessary.</i></p>
<p>V. Report of Findings</p>	<p>9. File incident reports.</p>	<p><i>The Utility Security Director, John Alves should file an internal report for the Utility's files, and also provide information as requested to Local Law Enforcement.</i></p>
<p>VI. AP-1A Revision Dates</p>		

AP 1B - Threat of or Actual Contamination to Water System

CREDIBLE STAGE

<p>AP Summary:</p>	<p>This Action Plan applies to the intentional introduction of a contaminant into the water system. The contaminant could be introduced at any point within the system, including raw water, treatment facilities, distribution system including distribution pipes, finished water storage, or pump stations. The adversary may or may not give notice, identify the contaminant, or provide the location. Contamination may have actually occurred or it may be a hoax.</p>	
<p>Initiation and Notification:</p>	<p>A. Initiate this AP if there is credible evidence that the water system has been contaminated:</p> <ul style="list-style-type: none"> • Additional information collected during the investigation corroborates the threat warning. • Collective information indicates that contamination is likely. • Signs of contamination are observed during site characterization. • Additional water quality data shows unusual trends that are consistent with the initial data and corroborate the threat. • A pattern of customer complaints emerges. • Previous threats and incidents corroborate the current threat. <p>B. Notify WUERM, John Alves or [Alternate WUERM] immediately upon discovery of credible evidence of threat (if not already notified).</p> <p>C. Initiate ERP.</p> <p>D. Initiate partial or full activation of the Emergency Operations Center (EOC).</p> <p>Perform internal and external notifications according to ERP.</p>	<p><i>If there is confirmed evidence and/or definitive information that the water system has been contaminated, GO TO AP 1C – CONFIRMED STAGE.</i></p> <p><i>The individual who first notices or receives the credible evidence should contact the WUERM, John Alves immediately by whatever means of communication may be available.</i></p> <p><i>The WUERM, John Alves will decide whether to initiate the ERP on a partial or full basis. The WUERM, John Alves will also decide when and to what extent to activate the EOC.</i></p> <p><i>Notification phone numbers can be obtained from the Organization Contact List in Appendix C of the ERP.</i></p> <p><i>The Information Office, Anna Vega, [IO] is the only one authorized to make notifications to outside agencies.</i></p>

AP 1B - Threat of or Actual Contamination to Water System
CREDIBLE STAGE

<p>Equipment Identified:</p>	<p>Equipment : Types of equipment needed are determined by the first responder at the site, and communicated to the PWD Corporation Yard.</p> <p>Location: All appropriate equipment (hand tools and heavy equipment) for each utility is stored at the PWD Corporation Yard.</p>	<p><i>This equipment is available to assist in the execution of this AP.</i></p>
<p>Specific Activities:</p>		
<p>I. Assess the Problem</p>	<ol style="list-style-type: none"> 1. Assess results of previous sample analysis. 2. Perform additional site characterization at primary sites as needed. 3. Perform site characterization at any new investigation sites. 	
<p>II. Isolate and Fix the Problem</p>	<ol style="list-style-type: none"> 4. Perform actions to estimate the contaminated area and predict movement of contamination. 5. Take actions to isolate portions of system containing suspect water. See ERP Appendix B for System Shut Down Plan. 6. Issue "Boil Water", "Do not Drink", or "Do not Use" orders and Press Releases as appropriate. See Appendix D of ERP for Press Release Forms. 7. Initiate Alternate Water Supply Plan (ERP Appendix C) to provide alternate water supply for customers and fire protection as necessary. 	<p><i>The contaminated area can be estimated using hydraulic models, consumer complaints, public health agency reports, water quality data, or other available information. The estimate may define additional locations where site characterization should be performed</i></p>
<p>III. Monitoring</p>	<ol style="list-style-type: none"> 8. Continue to monitor water quality in suspect parts of system by manual sampling, rapid field testing, or automated means. 	
<p>IV. Recovery and Return to Safety</p>	<ol style="list-style-type: none"> 9. Determine if threat is Confirmed. If YES, Initiate AP 1C. 	<p><i>It may take several days to collect sufficient evidence to confirm a contamination incident, depending on the type of</i></p>

AP 1B - Threat of or Actual Contamination to Water System
CREDIBLE STAGE

	<p>If NO,</p> <ul style="list-style-type: none"> • Verify that water is safe. • Notify public that water is safe. • Notify outside agencies that water is safe. • Return to normal operations. • Store water samples for <i>seven (7) days</i>. 	<p><i>information used for confirmation. (Some microbiological analytical procedures may take several days.)</i></p> <p><i>If the threat is not deemed 'confirmed', the samples obtained during site characterization should be stored in case the situation changes and an analysis is determined to be necessary.</i></p>
<p>V. Report of Findings</p>	<p>E. File incident reports.</p>	<p><i>The Utility Security Director, John Alves should file an internal report for the Utility's files, and also provide information as requested to Local Law Enforcement and other outside agencies.</i></p>
<p>VI. AP-1B Revision Dates</p>		

AP 1C - Contamination to Water System

CONFIRMED STAGE

<p>AP Summary:</p>	<p>This Action Plan applies to the intentional introduction of a contaminant into the water system. The contaminant could be introduced at any point within the system, including raw water, treatment facilities, distribution system including distribution pipes, finished water storage, or pump stations. The adversary may or may not give notice, identify the contaminant, or provide the location. Contamination may have actually occurred or it may be a hoax.</p>	
<p>Initiation and Notification:</p>	<p>A. Initiate this AP if there is confirmed evidence that the water system has been contaminated:</p> <ol style="list-style-type: none"> 1. There is analytical confirmation of the presence of one or more contaminants in the water system. 2. The preponderance of the evidence confirms that a contamination incident has occurred. <ul style="list-style-type: none"> • There is a security breach with obvious signs of contamination along with unusual water quality and consumer complaints in the vicinity of the security breach. • Additional findings (laboratory analysis, field observations) of continued site characterization activities add to other credible evidence of contamination. • There is information from public health officials, area hospitals, or 911 call centers indicating a problem with the water supply. • Law enforcement agencies have discovered crucial evidence or apprehended a suspect that helps confirm that the water has been contaminated. • Specific information on a number of potential contaminants can be used in conjunction with other available 	<p><i>If there is no confirmed evidence and no definitive information that the water system has been threatened or contaminated, GO TO AP 1B – CREDIBLE STAGE.</i></p> <p><i>It may take several days to collect sufficient evidence to confirm a contamination incident, and the required time will depend on the type of information used for confirmation (some microbial analytical procedures may take several days).</i></p>

AP 1C - Contamination to Water System
CONFIRMED STAGE

	information to narrow down the number of contaminant candidates.	
Initiation and Notification:	<p>B. Notify WUERM, John Alves or [Alternate WEURM] immediately upon discovery of confirmed evidence of contamination (if not already notified).</p> <p>C. Initiate full ERP activation.</p> <p>D. Initiate full activation of Emergency Operations Center (EOC).</p> <p>E. Engage other organization as needed (drinking water primacy agency, public health agency, response agencies, law enforcement).</p> <p>F. Perform internal and external notifications according to ERP.</p>	<p><i>The individual who first becomes aware of the confirmed evidence should contact the WUERM, John Alves immediately by whatever means of communication may be available.</i></p> <p><i>The WUERM, John Alves will decide whether to initiate the ERP on a partial or full basis. The WUERM, John Alves will also decide when and to what extent to activate the EOC.</i></p> <p><i>Notification phone numbers can be obtained from the Organization Contact List in Appendix C of the ERP.</i></p> <p><i>The Information Office, Anna Vega, [IO], should make the notifications to the outside agencies.</i></p>
Equipment Identified:	<p>Equipment : Types of equipment needed are determined by the first responder at the site, and communicated to the PWD Corporation Yard.</p> <p>Location: All appropriate equipment (hand tools and heavy equipment) for each utility is stored at the PWD Corporation Yard.</p>	<p><i>This equipment is available to assist in the execution of this AP.</i></p>
Specific Activities:		
I. Assess the Problem	<ol style="list-style-type: none"> 1. Assess results of previous sample analysis and attempt to identify the contaminant. 2. Confirm the identity of the contaminant. 	<p><i>Effective implementation of response actions depends on positive identification of the contaminant and knowledge of contaminant properties, including public health protection strategies and selection of treatment technologies.</i></p>

AP 1C - Contamination to Water System

CONFIRMED STAGE

<p>I. Assess the Problem</p>	<p>3. Perform a full characterization of the contaminated area, including contaminant properties, contaminant concentration profiles, and characteristics of the impacted area.</p> <p>4. Evaluate the likely direction and extent of future movement of the contaminant within the distribution system.</p> <p>5. Evaluate all available information about the contamination incident</p>	<p><i>If information from site characterization activities indicates that the contaminant impacts water quality in a certain manner (i.e., consumes free chlorine or imparts a certain odor to the water), the contaminant specific information may facilitate tentative identification of a contaminant and determine the analytical approach that should be used to positively identify the specific contaminant. Sources of contaminant information include:</i></p> <p><i>http://www.bt.cdc.gov/agent/agentlistchem.asp</i></p> <p><i>http://www.cdc.gov/atsdr/index.html</i></p> <p><i>http://www.waterisac.org/</i></p> <p><i>EPA Water Contaminant Information Tool (WCIT) – under development</i></p>
<p>II. Isolate and Fix the Problem</p>	<p>6. Take actions to isolate portions of system containing suspect water. See ERP Appendix B for System Shut Down Plan.</p> <p>7. Shut down system if obvious or confirmed contamination warrants.</p> <p>8. Issue “Boil Water”, “Do not Drink”, or “Do not Use” orders and Press Releases as appropriate. See Appendix D of ERP for Press Release Forms.</p> <p>9. Initiate Alternate Water Supply Plan (ERP Appendix C) to provide alternate water supply for customers and fire protection as necessary.</p> <p>10. Revise public health response measures and public notifications as necessary.</p>	<p><i>The contaminated area can be estimated using hydraulic modes, consumer complaints, public health agency reports, water quality data, or other available information. The estimate may define additional locations where site characterization should be performed.</i></p>
<p>III. Monitoring</p>	<p>11. Continue sampling and analysis to monitor the status and extent of the contamination, and to verify that containment strategies are working.</p>	
<p>IV. Recovery and Return</p>	<p>12. Consult with appropriate officials to develop a Remediation and Recovery Plan.</p>	<p><i>Remediation and recovery activities will likely be planned and implemented by a number of agencies. The first step of the process is to establish the roles and responsibilities of each</i></p>

AP 1C - Contamination to Water System

CONFIRMED STAGE

<p>to Safety</p>	<ul style="list-style-type: none"> a. Evaluate options for treating contaminated water and rehabilitating system components. b. Select treatment and rehabilitation technology/approach. c. Develop strategy for disposal of contaminated residuals. d. Develop sampling and analysis plan to verify remediation. e. Develop communications and public relations plan. <p>13. Implement Remediation and Recovery Plan.</p> <ul style="list-style-type: none"> a. Verify that water is safe by performing additional sampling and analysis to confirm the progress of system treatment and remediation. b. Notify public that water is safe. c. Notify outside agencies that water is safe. d. Return to normal operations. e. Store water samples for <i>seven (7) days</i>. 	<p><i>organization</i></p> <p><i>The samples obtained during site characterization and monitoring should be stored in case the situation changes and further analysis is determined to be necessary.</i></p>
<p>V. Report of Findings</p>	<p>G. File incident reports with internal and external agencies as required.</p>	<p><i>The Utility Security Director, John Alves should file an internal report for the Utility's files, and also provide information as requested to outside agencies.</i></p>
<p>VI. AP-1C Revision Dates</p>		

AP 2 - Structural Damage from Explosive Device

<p>AP Summary:</p>	<p>This Action Plan applies to an incident where intentional structural damage has occurred to the water system as a result of an explosive device. The assumed intent of the explosion is to disrupt normal system operations any point within the system, including raw water, treatment, finished water storage, or the distribution network.</p>	
<p>Initiation and Notification:</p>	<p>A. Initiate this AP if it appears that an explosive device has caused damage, or has the potential to cause damage to one or more components of the water system. The event will begin with an "incident discovery" which may come to City of Greenfield by one (or more) of the following:</p> <ul style="list-style-type: none"> • Security Equipment • Employee Discovery • Witness Account of Explosion • Notification By Adversary • Notification by Fire Department • Notification By Law Enforcement • Notification By News Media <p>B. Call 911 and notify WUERM, John Alves or [Alternate WUERM] immediately upon discovery of the explosion. The WUERM, John Alves should then notify others as appropriate. Examples include:</p> <ol style="list-style-type: none"> a. Local Fire Department b. Local Police Department c. FBI d. ATF <p>C. Take all practical measures to ensure that the building or facility is evacuated.</p>	<p><i>The individual who first notices or receives word of the explosion should contact the WUERM, John Alves immediately by whatever means of communication are available.</i></p> <p><i>Notification phone numbers can be obtained from the Organization Contact List in Appendix C of the ERP.</i></p>
<p>Initiation and Notification:</p>	<p>D. In cases where an adversary calls a City of Greenfield employee in advance that employee should complete the Bomb Threat Checklist OR Phone Threat Report Form found in Appendix F of the ERP.</p> <p>E. Initiate partial or full ERP activation.</p> <p>F. Initiate partial or full activation of the Emergency Operations Center (EOC).</p>	<p><i>The Bomb Threat Checklist and the Phone Threat Report Form contain questions that should be asked the caller if possible to help determine the specifics of the threat including the location of the explosive device, type of device, time of detonation, and reason for the attack.</i></p> <p><i>The WUERM, John Alves will decide whether to initiate the</i></p>

AP 2 - Structural Damage from Explosive Device

	<p>G. Engage other organization as needed (Law Enforcement, Fire Protection, FBI).</p> <p>H. Perform internal and external notifications according to ERP.</p>	<p><i>ERP on a partial or full basis. The WUERM, John Alves will also decide when and to what extent to activate the EOC.</i></p>
<p>Equipment Identified:</p>	<p>Equipment : Types of equipment needed are determined by the first responder at the site, and communicated to the PWD Corporation Yard.</p> <p>Location: All appropriate equipment (hand tools and heavy equipment) for each utility is stored at the PWD Corporation Yard.</p>	<p><i>This equipment is available to assist in the execution of this AP.</i></p>
<p>Specific Activities:</p>		
<p>I. Assess the Problem</p>	<ol style="list-style-type: none"> 1. Deploy Damage Assessment Team(s) (DAT) <ul style="list-style-type: none"> • Perform a thorough assessment of the structural damage caused by the explosion. • Determine how explosion is effecting system operations. 2. Check and monitor all other water system functions and facilities to ensure that the rest of the system is operating normally. (The initial explosion could be a diversion to a larger event, or it could be the first in a series of similar attacks.) 3. If the damage appears to be intentional, treat as a crime scene. Consult with local police, state police, and the FBI on evidence preservation. Also see Maintaining Crime Scene Integrity Form, Appendix F of ERP. 4. Isolate damaged facility from rest of water system, and take measures to bypass the damaged area if possible. 	<p><i>The DAT will work in conjunction with local/state law enforcement in terms of incident command and control.</i></p> <p><i>UNDER NO CIRCUMSTANCES WILL THE DAT TEAM ENTER THE AREA CONTAINING THE EXPLOSIVE DEVICE UNTIL AFTER THE LOCAL LAW ENFORCEMENT EXPLOSION SPECIALISTS (BOMB SQUAD) HAS DETERMINED THAT THE AREA IS SAFE.</i></p>

AP 2 - Structural Damage from Explosive Device

	<p>5. Inform local police, state police, and the FBI of potential hazardous materials.</p>	
<p>II. Isolate and Fix the Problem</p>	<p>6. Physically secure water system facilities and implement heightened security procedures throughout the system.</p> <p>7. Initiate Alternate Water Supply Plan (ERP Appendix C) to provide alternate water supply for customers and fire protection as necessary.</p> <p>8. Based on extent of damage, consider alternate (interim) treatment schemes.</p> <p>9. Issue public notification, "Boil Water", "Do not Drink", or "Do not Use" orders and other Press Releases as appropriate. See Appendix D of ERP for Press Release Forms.</p> <p>10. Request assistance from outside contractors or other water utilities if needed to help repair the damage.</p>	
<p>III. Monitoring</p>	<p>11. Perform sampling and monitoring activities and analysis to determine if the explosion has rendered the water supply unsafe for customers.</p> <p>12. Perform a system pressure evaluation to determine how the explosion has affected customers and fire water capability in each pressure zone.</p>	
<p>IV. Recovery and Return to Safety</p>	<p>13. Repair damage to critical equipment and facilities as soon as possible.</p> <p>14. Determine and mitigate effects on other system components. For example, replace water storage capacity if it was diminished during repairs.</p> <p>15. Clean and disinfect system components as necessary.</p> <p>16. Resume normal operations.</p> <p>17. Assess need for additional protection/security measures.</p>	<p><i>The WUERM, John Alves will inspect the repairs and will give the OK to resume normal operation of the water system</i></p> <p><i>The WUERM, John Alves will evaluate a heightened security posture. As a result, security will be increased or decreased as necessary according to the perceived threat.</i></p>

AP 2 - Structural Damage from Explosive Device

V. Report of Findings	18. File incident reports.	<i>The Utility Security Director, John Alves should file an internal report for the Utility's files, and also provide information as requested to Local Law Enforcement and other outside agencies.</i>
VI. AP-2 Revision Dates		

AP 3 – Employee Assaulted with Weapon (Armed Intruder)

AP Summary:	<p>This Action Plan applies to the threat of an employee(s) being assaulted by an intruder (possibly an ex-employee), with a weapon. Incidents of this type will vary in scale and severity, but the following should generally apply across the spectrum of threat conditions.</p> <p>If you believe this threat is of current importance and have not yet dialed 911 or an emergency equivalent, do so immediately before proceeding.</p>	
Initiation and Notification:	<p>Initial notification of the incident will vary in both method and urgency, however in any scenario the first priority is the welfare of the assault victim. Under all circumstances, emergency personnel should be notified and consulted immediately.</p> <p>This threat requires a response addressing three distinct categories:</p> <ul style="list-style-type: none"> • Ensuring the health and safety of the victim and other employees. • Notifying and facilitating involvement of the proper authorities. • Communicating specifics of the incident to other staff, the media, and the victim’s relatives. <p>Remain aware of these aspects of your response as the AP is initiated and consulted.</p>	<p><i>The individual who first notices or receives word of the assault should contact 911 immediately by whatever means of communication may be available.</i></p> <p><i>Notification phone numbers can be obtained from the Organization Contact List in Appendix C of the ERP.</i></p>
Equipment Identified:	<p>Equipment : Types of equipment needed are determined by the first responder at the site, and communicated to the PWD Corporation Yard.</p> <p>Location: All appropriate equipment (hand tools and heavy equipment) for each utility is stored at the PWD Corporation Yard.</p>	<p><i>This equipment is available to assist in the execution of this AP.</i></p>
Specific Activities:		
I. Assess the Problem	<p>Assessment of the severity of injury should not be made by City of Greenfield Staff, proper diagnosis should be made only by trained medical personnel. The following</p>	<p><i>Notification phone numbers can be obtained from the Organization Contact List in</i></p>

AP 3 – Employee Assaulted with Weapon (Armed Intruder)

	<p>general steps will be prudent:</p> <ol style="list-style-type: none"> 1. The first task upon discovery of the incident is to dial 911 and report the incident in detail. 2. An ambulance (or other transportation to the hospital in less urgent situations) should be immediately arranged in all cases. 3. Decision-making control of the situation should be readily surrendered to the proper authorities. 4. In the event of a hostage situation or extended incident, City of Greenfield Staff should notify the authorities and evacuate the area quickly. 5. Under no circumstances should Utility personnel attempt to subdue the adversary or bring personal weapons onto the scene. 	<p><i>Appendix C of the ERP.</i></p>
<p>II. Isolate and Fix the Problem</p>	<ol style="list-style-type: none"> 6. If witnesses were present they should be readily available to provide information to the authorities. Fill out the Suspect Identification Form. See Appendix F of ERP. 7. The area surrounding the incident is a crime scene and care should be taken not to alter anything that may impair the ability of the authorities to interpret or recreate the assault. Consult the Maintaining Crime Scene Integrity Form located in Appendix F of this ERP. 8. The weapon, if present, should not be handled or touched in any way. 	
<p>III. Monitoring</p>	<ol style="list-style-type: none"> 9. Communication with the media should be handled in a proactive fashion, with statements made only by the identified Utility spokesperson. Similarly, employees should not be left to spread the word through gossip and hearsay. An announcement carrying relevant details should be disseminated promptly. 10. If the assault victim is injured or otherwise unable to perform his/her duties, the replacement personnel may also be under significant stress. Care should be taking in selecting replacement 	<p><i>See ERP Appendix D.</i></p>

**AP 3 - Employee Assaulted with Weapon
(Armed Intruder)**

	personnel including monitoring of performance and behavior	
IV. Recovery and Return to Safety	<p>11. Staff stress may have serious ramifications. It is important to evaluate these effects in an ongoing fashion and address them accordingly. The Utility should consider temporary mental health counselors under such tragic circumstances.</p> <p>12. In the event of a fatality, notification of family is an unfortunate duty, which may be best handled by the local police or other authorities experienced in such tasks.</p> <p>13. If security was breached during the incident, rapidly address any weakness the incident may have identified. Evaluate access to the incident location and modify where necessary.</p> <p>14. If the adversary was acting with an identifiable motive, consider the mentality and culture of the utility to evaluate if the underlying issue may be significant and widespread.</p> <p>15. If assault was of a sexual nature consider awareness training for City of Greenfield Staff.</p> <p>16. The need to maintain a heightened security posture should be evaluated, and security should be increased and decreased as necessary according to the perceived threat.</p>	
V. Report of Findings	<p>17. In addition to completing the appropriate filings with the local police and other agencies, the utility should assemble relevant personnel to review the effectiveness of the action plan and reinforce lessons learned in the process.</p>	
VI. AP-3 Revision Dates		

AP 4 – Power Outage

AP Summary:	<p>This Action Plan applies to events that result in power outages. Note that this Action Plan may need to be implemented in conjunction with other Action Plans (for example, severe weather) as necessary.</p> <p>Consider agreement with the power company to determine the priority of drinking water and wastewater systems for recovery prior to the emergency.</p>	
Initiation and Notification:	<p>Initiate this AP upon a loss of offsite power</p> <p>Notify:</p> <ul style="list-style-type: none"> • WUERM, John Alves • [Alternate WUERM] <p>Others as appropriate, examples include:</p> <ul style="list-style-type: none"> • Fuel supplier (back up generator) • Critical Care Customers • Large Water Users 	<p><i>Notify the WUERM, John Alves by whatever means of communication may be available.</i></p> <p><i>Notification phone numbers can be obtained from the Organization Contact List in Appendix C of the ERP.</i></p>
Equipment Identified:	<p>Equipment : Types of equipment needed are determined by the first responder at the site, and communicated to the PWD Corporation Yard.</p> <p>Location: All appropriate equipment (hand tools and heavy equipment) for each utility is stored at the PWD Corporation Yard.</p> <p>Mobile battery-powered radios</p> <p>Mobile/cellular phones</p> <p>Flashlights</p> <p>Spare batteries</p> <p>Accessory requirements (cables for generators, transformers, load banks, bus bars, distribution panels, feeder panels, fuses, outlets, load centers, etc)</p> <p>Emergency kits</p>	

AP 4 – Power Outage

Specific Activities:		
I. Assess the Problem	<ol style="list-style-type: none"> 1. Call local hydro-electric supply company – request information on the estimated down time. 2. IF backup generation is available, THEN assess the ability to supply fuel for extended periods. 3. Assess ability for HVAC or alternate to provide proper temperatures for SCADA, computer, and control systems. 4. Estimate potable water requirements under the emergency condition and determine if the utility can still meet requirements. 5. IF telephone is also down, THEN SCADA communications may be blocked. 6. Loss of power could affect utility access gates, CCTV, intrusion alarms and other remote monitoring abilities. Loss of power may be a diversionary tactic for other terrorist activity. Be alert. 	<p><i>Consider agreements with fuel supply company to supply fuel automatically upon a power loss if the capability to store fuel on site is not practical. A fuel tank with capacity for at least 24 hours of run time is advisable.</i></p> <p><i>If on-staff personnel are not experienced with power-generation equipment, it is necessary to arrange for professional assistance to install and operate the mobile units.</i></p> <p><i>Evaluate back-up power with controllers that sense problems with purchased power and come up automatically.</i></p> <p><i>Complete assessment as quickly as possible.</i></p>
II. Isolate and Fix the Problem	<ol style="list-style-type: none"> 7. Turn off unnecessary electrical equipment. 8. Start back up generators as necessary for key components: Note: Uninterruptible Power Supply (UPS) for SCADA and computers, battery back-up for Remote Terminal Unit (RTU) may only supply power for a few hours. 	<p><i>This can prevent injuries and damage from unexpected equipment startups, power surges to the equipment and possible fires. If power goes out, an Uninterruptible Power Supply (UPS) provides battery power at a constant rate for several minutes, allowing you to safely turn off equipment with minimal risk or loss.</i></p> <p><i>If you permanently connect a backup electrical generator, the connection may have to meet certain technical standards required by law. Some states also require you to notify your electric utility. If you do not, utility personnel working nearby could be seriously injured.</i></p>
II. Isolate and Fix the	<ol style="list-style-type: none"> 9. Increase disinfectant residual as a precaution to potential contamination. 	<p><i>A temporary portable generator should not be connected to building wiring unless the building meets the same technical standards legally required</i></p>

AP 4 – Power Outage

<p>Problem</p>	<p>10. IF not able to meet community requirements for water THEN arrange for water to be supplied by another source. See Mutual aid agreements Section 2.12 of ERP and Section 3.4.3 of ERP for Alternate Water Sources.</p> <p>11. Notify priority customers</p> <p>12. Notify users of interruption of service if backup pump(s) is/are not capable of maintaining supply.</p> <p>13. Issue “Boil Water”, “Do not Drink”, or “Do not Use” orders and Press Releases as appropriate. See Appendix B of ERP for Press Release Forms.</p> <p>14. Initiate back up plan for retrieval of current information from outside sources.</p>	<p><i>for a permanent generator. Most buildings are not so equipped. As an alternative, use properly rated extension cords to connect electrical loads directly to the generator receptacles.</i></p> <p><i>This is an analysis of all available sources of water, not just those used under conditions of normal operation. These sources might include both new intakes or wells, public or private ponds, reservoirs, swimming pools, interconnections with other water utilities, water stored within building water systems, water provided in bottles or tank trucks from outside sources of potable water, local dairies or bottling plants, etc.</i></p> <p><i>Since computers may be down, access to Water ISAC, police, government, etc. could be compromised.</i></p>
<p>II. Isolate and Fix the Problem</p>	<p>15. Consider initiating back-up portable pumping and generating capability to serve areas with limited storage, critical wastewater collection and treatment operations.</p> <p>16. Facilities with freezing temperatures should turn off and drain the following lines in the event of a long term power loss:</p> <ul style="list-style-type: none"> a. Fire sprinkler system b. Standpipes c. Potable Water Lines d. Toilets 	
<p>III. Monitoring</p>	<p>17. IF damage to equipment occurs, THEN contact vendor/mutual aid companies to replace/repair damaged equipment.</p> <p>18. Monitor the status of the backup power supply and regularly test whether battery levels are adequate and the backup generators are functional.</p>	<p><i>Ask your vendors about specific limitations of your equipment. Find out how long it would take to repair or replace damaged equipment.</i></p>

AP 5A - Natural Event (Flood)

AP Summary:	<p>This Action Plan applies to flooding events. In general, these events occur with reasonable lead times, and it is possible to take proactive measures, as outlined below. Response and recovery can be time consuming during flood events, as they can involve loss of electrical power supply, damage of structures and equipment, disruptions of service, and injuries to utility personnel.</p>	
Initiation and Notification:	<p>This AP should be initiated upon official notification of either a flood “watch” (a flood is possible in your area), or a flood “warning” (flooding is already occurring or will occur soon in your area). Such information will almost certainly be issued in the form of forecasts from the National Weather Service (NWS) and other governmental agencies. Also initiate if actual flooding is discovered.</p> <p>Notify</p> <ul style="list-style-type: none"> • WUERM, John Alves • [Alternate WUERM] <p>The WUERM, John Alves will make the decision to contact local response authorities to request possible assistance.</p>	<p><i>Links to specific RFCs can be found at the following website: http://www.nws.noaa.gov/oh/hic/rfc.html</i></p> <p><i>The NWS maintains 13 regional River Forecast Centers (RFC) that are responsible for issuing flood forecasts synthesized from hydro-meteorological data. These centers offer current river conditions and observations, as well as forecast and guidance for both major river and flash floods, hydrographs for gauging stations, and flood outlook potentials. Be aware that floods often occur without local precipitation as a result of precipitation upstream.</i></p> <p><i>Flash flood guidance values can also typically be obtained via your local RFC. These values show data suggesting the amount of rain necessary over 1-, 3-, and 6-hour periods that could cause flash floods.</i></p> <p><i>While major floods can take several hours to days to develop, flash floods can take only a few minutes to a few hours to develop.</i></p> <p><i>Notification phone numbers can be obtained from the Organization Contact List in Appendix C of the ERP.</i></p>
Equipment Identified:	<p>Equipment : Types of equipment needed are determined by the first responder at the site, and communicated to the PWD Corporation Yard.</p> <p>Location: All appropriate equipment (hand tools and heavy equipment) for each utility is stored at the PWD</p>	<p><i>This equipment is available to assist in the execution of this AP.</i></p>

AP 5A – Natural Event (Flood)

	Corporation Yard.	
Specific Activities:		
I. Assess the Problem	<p>If a Flood Watch or Warning is received:</p> <ol style="list-style-type: none"> 1. Contact local representative of NWS for additional information on exact location and probable extent (stage) of flooding, relative to utility facilities. 2. Use site maps or other available information to assess location of all facilities for location in flood plain. 3. Prioritize pre-flooding activities on basis of flooding potential (in part, based on location). 4. If flooding has already occurred: <ul style="list-style-type: none"> • Conduct site assessment from nearest safe location. • Based on peak flood stage, predict and build inventory of equipment likely to be most affected. • List equipment needed to restore water service when flood waters recede. 	<p><i>Flood damage is proportional to the volume and the velocity of the water. Floods are extremely dangerous because they destroy through inundation and soaking as well as the incredible force of moving water. High volumes of water can move heavy objects and undermine roads and bridges. Flooding can also facilitate other hazards such as landslides, or cause other hazards such as material hazard events</i></p>
II. Isolate and Fix the Problem	<p>The following steps should be taken in preparation for the event:</p> <ol style="list-style-type: none"> 1. Activate Emergency Operations Center (EOC). 2. Assemble essential personnel and designate duties, such as: <ul style="list-style-type: none"> • Elevate in-place or remove water-sensitive equipment within structures to prevent flood damage. • Anchor fuel tanks. 	<p><i>Steps in advance of flooding obviously will be different than steps in reaction to flooding. Both may be needed for any one flooding event.</i></p>

AP 5A - Natural Event (Flood)

	<ul style="list-style-type: none"> • Elevate electrical system components. • Take appropriate flood-proofing steps (sandbags or other). • Install sewer backflow valves. • Flood-proof or elevate heating, cooling, and ventilating equipment. • Assemble and stage mobile stand-by generators and auxiliary water pumps. 	
II. Isolate and Fix the Problem	<ol style="list-style-type: none"> 3. Notify neighboring utilities or other sources of emergency response support if manpower or equipment will be needed. 4. The [IO] is to notify customers, media, and state and local authorities that service may be disrupted and/or that demand reductions may be necessary. 5. Pre-test and/or initiate emergency communications plan 6. Consider shut-down if flooding appears imminent. 	<p><i>Flood water may have to be pumped out of facilities before utility equipment can be restored.</i></p> <p><i>Decision to shutdown must balance protection of utility equipment and maintenance of fire flows.</i></p>
III. Monitoring	<p>Observe the following recommended practices during the flood event:</p> <ul style="list-style-type: none"> • Take pictures of the damage, both of buildings and their contents, for insurance claims. • Instruct Utility personnel to avoid floodwaters whenever possible. • If a vehicle stalls in rapidly rising waters, abandon it immediately and climb to higher ground. Vehicles can be swept away in two feet of water. • Stay out of any building if floodwaters remain around the building. • Avoid smoking inside buildings. Smoking in confined areas can cause 	<p><i>If it is moving swiftly, even water six inches deep can knock an individual off their feet. Many people are swept away wading through floodwaters, resulting in injury or death. Floodwaters may still be rising. Staff may not be able to see on the surface how fast floodwater is moving or see holes and submerged debris.</i></p> <p><i>Floodwaters often undermine foundations, causing sinking, floors can crack or break and buildings can collapse. Buildings may have hidden damage that makes them unsafe such as gas leaks or electric hazards.</i></p>

AP 5A - Natural Event (Flood)

	<p>fires.</p> <ul style="list-style-type: none"> • Wear sturdy shoes. The most common injury following a disaster is cut feet. • Use battery-powered lanterns or flashlights when examining buildings. Battery-powered lighting is the safest and easiest, preventing fire hazard for the user, occupants, and building. • Look for fire hazards. There may be broken or leaking gas lines, flooded electrical circuits, or submerged furnaces or electrical appliances. Flammable or explosive materials may travel from upstream. Fire is the most frequent hazard following floods. • The WUERM, John Alves or [IO] is to communicate with customers and the Local Emergency Planning Committee (LEPC) as to current conditions. 	
<p>IV. Recovery And Return to Safety</p>	<p>Once floodwaters recede, the following may be of relevance:</p> <ul style="list-style-type: none"> • Check insurance policy for procedures to recover losses, including the national Flood Insurance Program. • Inspect foundations for cracks or other damage. • Check power lines for damages • Arrange for alternate source of electrical power or fuel for diesel generators, sufficient for period of outage following flood. See AP-7 Power Outage. • Throw away all food that has come into contact with floodwaters. • Inspect, clean, rebuild, replace all affected equipment as necessary • Contact state and local authorities to determine if there are any restrictions on disposal of materials and debris removed from the site or if a temporary 	<p><i>More information can be found here:</i> http://www.fema.gov/nfip</p> <p><i>Cracks and damage to a foundation can render a building uninhabitable.</i></p> <p><i>See AP-7 Power Outage</i></p> <p><i>Contaminated floodwater contains bacteria and germs. Eating foods exposed to flood waters can make personnel very sick.</i></p> <p><i>In the longer-term, mitigation against loss of life and property caused by flood events is principally accomplished before the events, through sensible floodplain management and regulation. This involves strategies to modify flooding and to modify infrastructure to reduce likelihood of damage.</i></p> <p><i>Guidelines to a variety of flood-proofing and elevation methods are available from FEMA and NOAA.</i></p>

**AP 5A - Natural Event
(Flood)**

	discharge permit (NPDES or other) is needed for the water pumped from tanks and other flooded structures.	
V. Report of Findings	Assemble relevant personnel to review effectiveness of action plan and reinforce lessons learned.	
VI. AP-5A Revision Dates		

AP 5B - Natural Event (Winter Storm)

<p>AP Summary:</p>	<p>This Action Plan applies to winter storm events. In general, these events occur with reasonable lead times, and it is possible to take proactive measures, as outlined below. Response and recovery can be time consuming during such events, and they can involve loss of electrical power supply, damage of structures and equipment, disruptions of service, and injuries to utility personnel.</p> <p>Note: Winter Storms in the Greenfield area are typically heavy rain and winds.</p>	
<p>Initiation and Notification:</p>	<p>When hazardous winter weather conditions are expected to affect the region, the National Weather Service (NWS) issues public advisories. This AP should be initiated upon official notification of a "winter storm watch" or more elevated status. In order of increasing severity, the standard terminology is as follows:</p> <p>Winter Storm Outlook: Issued prior to a Winter Storm Watch. The Outlook is given when forecasters believe winter storm conditions are possible and are usually issued 3 to 5 days in advance of a winter storm.</p> <p>Winter Weather Advisory: Issued for accumulations of snow, freezing rain, freezing drizzle, and sleet which will cause significant inconveniences and, if caution is not exercised, could lead to life-threatening situations.</p> <p>Winter Storm Watch: Alerts the public to the possibility of a blizzard, heavy snow, heavy freezing rain, or heavy sleet. Winter Storm Watches are usually issued 12 to 48 hours before the beginning of a Winter Storm.</p> <p>Winter Storm Warning: Issued when hazardous winter weather in the form of heavy snow, heavy freezing rain, or heavy sleet is imminent or occurring. Winter Storm Warnings are usually issued 12 to 24 hours before the event is expected to begin.</p> <p>Blizzard Warning: Issued for sustained or gusty winds of 35 mph or more, and falling or blowing snow creating visibilities at or below ¼ mile; these conditions should persist for at least three hours.</p> <p>It is expected that the local the Local Emergency Planning Committee (LEPC) will carefully and continually monitor meteorological conditions and forecasts. During such events, the Local Emergency Planning Committee (LEPC) shall be in constant contact with the National Weather Service (NWS) and disseminate information to agencies via conference call, e-mail and broadcast fax.</p>	<p><i>See the NWS website for current warnings here:</i></p> <p>NWS</p> <p><i>Notification phone numbers can be obtained from the Organization Contact List in Appendix C of the ERP.</i></p>

**AP 5B – Natural Event
(Winter Storm)**

<p>Equipment Identified:</p>	<p>Equipment : Types of equipment needed are determined by the first responder at the site, and communicated to the PWD Corporation Yard.</p> <p>Location: All appropriate equipment (hand tools and heavy equipment) for each utility is stored at the PWD Corporation Yard.</p>	<p><i>This equipment is available to assist in the execution of this AP.</i></p>
<p>Specific Activities:</p>		
<p>I. Assess the Problem</p>	<p>Winter storms, accompanied by strong winds and blizzard conditions, have resulted in localized power and phone outages; closures of streets, highways, schools, businesses, and nonessential government operations. People have been isolated from essential services in their homes and vehicles. A winter storm may escalate into a catastrophic event paralyzing municipalities, and rural areas for several days. Life threatening situations may occur in which emergency response agencies cannot perform their duties due to extreme weather conditions. Individual jurisdictions may be over-whelmed and need mutual aid assistance.</p>	
<p>II. Isolate and Fix the Problem</p>	<p>Snow removal capabilities will vary widely, general procedures are as follows:</p> <p>Before the storm:</p> <ol style="list-style-type: none"> 1. Activate Emergency Operations Center (EOC). 2. Monitor track of storm. 3. Release nonessential personnel, as warranted. 4. Assemble essential personnel and designate duties. 5. Typical duties at this stage may include: <ul style="list-style-type: none"> • Fill gravity storage tanks. • Test auxiliary power sources. • Fill fuel tanks. • Secure windows and doors. 	

**AP 5B – Natural Event
(Winter Storm)**

	<ul style="list-style-type: none"> • Mobilize snow removal equipment, as warranted. • Man remote stations essential to operations. • Stockpile chemicals, food, etc. 	
<p>II. Isolate and Fix the Problem</p>	<ol style="list-style-type: none"> 6. Discuss needs with electric company. 7. Test back-up communications system. 8. Review mutual aid agreements and verify connections to/from neighboring water systems. <p>Review specific power outage contingency action plan.</p> <p>During the storm:</p> <ol style="list-style-type: none"> 1. Notify customers, media, and state and local authorities if service is disrupted or if significant demand management is necessary. 2. Monitor reservoirs. 3. Monitor changes in water quality. If a water quality emergency should develop, follow the appropriate procedure. 4. Open connections with neighboring water systems if necessary. 5. Provide backup power to facilities utilizing mobile generators, as appropriate. 	
<p>III. Monitoring</p>	<p>In order to monitor the infrastructure status and residents' health during a winter weather event, it is expected that the Utility will assist the Local Emergency Planning Committee (LEPC) in gathering the following types of information:</p> <ul style="list-style-type: none"> • Electrical load • EMS cold-related responses / total responses • Cold weather-related water main breaks • Available sheltering centers • Status of salt and sand stockpiles • Available snow removal assets • Cold-related incidents / concerns 	

**AP 5B – Natural Event
(Winter Storm)**

	<p>During winter weather emergencies, heavy snowfall, coupled with icy roads or ice accumulations on aboveground electrical transmission lines, can result in vehicular accidents and transmission line failure. Power outages during winter weather events can pose serious problems, particularly among those communities where life-sustaining equipment (LSE) is a necessity.</p>	
<p>III. Monitoring</p>	<p>Personnel should avoid traveling by vehicle, but if necessary, it is important to communicate destinations, routes, and expected arrival times. If vehicles get stuck along the way, help can be sent along the predetermined route. If personnel do get stuck:</p> <ul style="list-style-type: none"> • Staff should stay with their car and not try to walk to safety. • Tie a colored cloth to the antenna for rescuers to see. • Start the car and use the heater for about 10 minutes every hour. Keep the exhaust pipe clear so fumes won't back up in the car. • Leave the overhead light on when the engine is running to be seen. <p>Keep arms and legs moving to keep blood circulating and to stay warm and keep one window away from the blowing wind slightly open to let in air.</p> <p>During heavy storms, search and rescue operations, movement of emergency response agencies to assigned duties and restoration of essential services are likely to become the primary focus of the EOC.</p> <p>Priorities of response forces, prioritization of the use of snow removal equipment and allocation of all critical resources and response personnel will be the responsibility of the EOC.</p>	
<p>IV. Recovery And Return to Safety</p>	<p>It is recommended that staff observe the following safety tips in recovery from winter storm events:</p> <ul style="list-style-type: none"> • After the storm, if personnel are required to shovel snow, be extremely careful. It is physically strenuous work, requiring frequent breaks. Avoid overexertion. Heart attacks from shoveling heavy snow are a leading cause of deaths during winter. • Walk carefully on snowy, icy, sidewalks. 	
<p>V. Report of</p>	<p>Assemble relevant personnel to review effectiveness of action plan</p>	

**AP 5B - Natural Event
(Winter Storm)**

Findings	and reinforce lessons learned.	
VI. AP-5B Revision Dates		

AP 5C - Natural Event (Earthquake)

AP Summary:	This Action Plan applies to earthquake events. In general, these events occur without any lead times, making it impossible to take proactive measures. Response and recovery can be time consuming during such events, and they can involve loss of electrical power supply, damage of structures and equipment, disruptions of service, and injuries to utility personnel.	
Initiation and Notification:	<p>An earthquake usually occurs without any type of warning. Due to the suddenness, all personnel should attempt to find immediate shelter. This may include:</p> <ul style="list-style-type: none"> • Standing in a doorway or triangle of safety and bracing your hands and feet against each side. • Getting under a desk or heavy table. • Standing flat against an interior wall. • Do not seek cover under laboratory tables or benches as chemicals could spill and harm personnel. <p>After an earthquake has stopped, initiate this earthquake AP 8D.</p>	<i>Notification phone numbers can be obtained from the Organization Contact List in Appendix C of the ERP.</i>
Equipment Identified:	<p>Equipment : Types of equipment needed are determined by the first responder at the site, and communicated to the PWD Corporation Yard.</p> <p>Location: All appropriate equipment (hand tools and heavy equipment) for each utility is stored at the PWD Corporation Yard.</p>	<i>This equipment is available to assist in the execution of this AP.</i>
Specific Activities:		
I. Assess the Problem	<p>In general, the WUERM, John Alves will organize an assessment team to undertake the following activities:</p> <ul style="list-style-type: none"> • Inspect all structures for obvious cracks and damage. • Assess condition of all electrical power feeds and switchgear. • If SCADA is working, immediately review system for all types of malfunctions, including telemetry, pressure in the distribution system, and operation of pumps and other equipment. • If buildings have any sign of damage, such as cracked 	<i>Be prepared for aftershocks. Although smaller than the main shock, aftershocks cause additional damage and may bring weakened structures down. Aftershocks can occur in the first hours, days, weeks, or even</i>

AP 5C – Natural Event (Earthquake)

	<p>walls, broken windows, downed power lines, do not enter, but wait for trained personnel.</p> <ul style="list-style-type: none"> • If buildings appear safe, cautiously inspect condition of interiors for damaged equipment, leaks, chemical spills, etc. • Communicate all findings via radio to Emergency Operations Center (EOC) or WUERM, John Alves, as appropriate. • Activate personnel accountability network to check for injury of staff. 	<p><i>months after the quake. Follow the same procedures as for earthquakes.</i></p> <p><i>See AP 7 for specific power loss procedures.</i></p>
<p>I. Assess the Problem</p>	<p>Earthquakes can cause significant power outages because of the impact on outside generation and transmission lines. After a major earthquake, power might be interrupted for an extended period of time over the entire operations area. In this instance, power restoration will most probably be slow and, depending upon the infrastructure damage, localized. Some isolated areas could take considerably longer for power restoration than others.</p>	
<p>II. Isolate and Fix the Problem</p>	<p>General earthquake procedures during an earthquake are as follows:</p> <ol style="list-style-type: none"> 1. Seek shelter under a deck, table, doorway, or inside wall. 2. Once the shaking has stopped, gather valuables and quickly make your way outside. (DO NOT USE ELEVATORS.) 3. Avoid electric wires, poles and equipment, once outside. 4. Prepare for aftershocks. 	
<p>III. Monitoring</p>	<p>At all times, personnel should observe the following general steps:</p> <ul style="list-style-type: none"> • Stay calm and await instructions from the designated official. • Keep away from overturned fixtures, windows, filing cabinets, and electrical power. • Provide assistance and/or call for medical help for injured employees as needed. • If major structural damage has occurred, order a complete evacuation. The building should be inspected by trained personnel for damage before reentry. • Protect from further danger by putting on long pants, a long-sleeved shirt, sturdy shoes, and work gloves. 	

AP 5C - Natural Event (Earthquake)

	<ul style="list-style-type: none"> • Look for and extinguish small fires. Eliminate fire hazards. • Monitor the radio for instructions. • Expect aftershocks. • Use the telephone only to report life-threatening emergencies. 	
<p>IV. Recovery And Return to Safety</p>	<p>General earthquake procedures after an earthquake are as follows:</p> <ol style="list-style-type: none"> 1. Activate Emergency Operations Center (EOC). 2. Contact emergency assistance (local police, local fire department, rescue squad, etc) as necessary to respond to injuries of staff. 3. The [IO] is to notify customers, media, and state and local authorities if service is disrupted or if significant demand management is necessary. 4. Inspect facilities for structural damage, including: buildings, storage tanks, pipelines, and process equipment. Consider the use of an outside engineering consultant. 5. Prioritize and repair water main leaks. 6. Contact neighboring purveyors for mutual aid arrangements, and open connections as needed. 7. Respond to side effects (loss of power, fire chemical spills, etc.) 	
<p>V. Report of Findings</p>	<p>Assemble relevant personnel to review effectiveness of action plan and reinforce lessons learned.</p>	
<p>VI. AP-5C Revision Dates</p>		

AP 6 – Water Supply Interruption

AP Summary:	This action plan applies to water supply interruptions. These events will vary in scale from compromised incremental supply volumes to complete, catastrophic loss of water supply. The ability for a utility to successfully respond to a catastrophic water supply interruption will be highly correlated to the existence of interconnections and alternative sources of supply.	
Initiation and Notification:	Catastrophic water supply interruptions will generally be identified by other events, such as physical equipment damage, severe weather or others, which are likely to have a specific direct action plan. Incremental interruptions due to longer-term events such as drought or acute loss of one source, will lead to a prescribed series of contingency measures, as outlined below.	<p><i>It is recognized that many utilities will already have an action plan in place to address this event.</i></p> <p><i>Notification phone numbers can be obtained from the Organization Contact List in Appendix C of the ERP.</i></p>
Equipment Identified:	<p>Equipment : Types of equipment needed are determined by the first responder at the site, and communicated to the PWD Corporation Yard.</p> <p>Location: All appropriate equipment (hand tools and heavy equipment) for each utility is stored at the PWD Corporation Yard.</p>	<p><i>This equipment is available to assist in the execution of this AP.</i></p>
Specific Activities:		
I. Assess the Problem	There are a number of potential levels of severity involved in a water supply interruption. A series of stages of action corresponding to increasing impacts on water are: <ul style="list-style-type: none"> • Normal Conditions • Water Alert • Water Warning • Water Crisis • Water Emergency 	
II. Isolate and Fix the Problem	Each stage has specific customized definitions, in terms of percent of Water Supply reduction, with appropriate actions or restrictions at each stage. Utilities will have a series of escalating penalties for successive violations of restrictions. These stages are:	

AP 6 – Water Supply Interruption

	<p>Normal Conditions – Normal conditions apply. Water is available; but in arid environments there are specific watering days for various addresses or penalties for excess watering.</p>	
<p>II. Isolate and Fix the Problem</p>	<p>Water Alert – A 5% or greater reduction in water usage is to meet the immediate needs of customers. Voluntary conservation encouraged. The water shortage situation is explained to the public and voluntary water conservation is requested (see standard press releases). The City of Greenfield maintains an ongoing public information campaign consisting of distribution of literature, speaking engagements, bill inserts, and conversation messages printed in local newspapers.</p> <p>Water Warning – A 15% or greater reduction in water usage is to meet the immediate needs of customers. Water supply shortage is moderate. The utility aggressively continues its public information and education programs. Consumers are asked for a 15 percent or greater voluntary or mandatory water use reduction. Additional landscape irrigation restrictions may be implemented. Businesses may be asked not to serve water in restaurants unless requested.</p> <p>Water Crisis – A 30% or greater reduction in water usage is to meet the immediate needs of customers. Water supply shortage is severe. Additional requirements may include: Dramatic landscape irrigation restrictions; Restrictions on use of potable water to fill or refill new swimming pools, artificial lakes, ponds, or streams until the water crisis is declared over; Prohibition of water use for ornamental ponds and fountains; Restrictions on washing of automobiles and equipment (such as requiring that it shall be done on the lawn or at a commercial establishment that uses recycled or reclaimed water); Restriction of flushing of sewers or fire hydrants to cases of emergency and essential operations, and; Introduction of a permanent water meter on existing non-metered services and/or flow restrictors on existing metered services at customer’s expense upon receipt of the second water violation.</p>	

AP 6 – Water Supply Interruption

<p>II. Isolate and Fix the Problem</p>	<p>Water Emergency – A 50% or greater reduction in water usage is to meet the immediate needs of customers. Water shortage is critical. Additional requirements may include: Disallowing all landscape irrigation; Disallowing potable water use for construction purposes such as dust control, compaction, or trench jetting. In addition, large industrial users, for example canneries and other food manufacturers, may be required to reduce or cease all water use.</p> <p>In addition to these incremental stages, the Utility should prepare for a catastrophic interruption of water supplies. A catastrophic event that constitutes a proclamation of a water shortage would be any event, either natural or manmade, that causes a severe water supply interruption, synonymous with or with greater severity than the “Water Warning” water supply shortage condition outlined above.</p>	
<p>III. Monitoring</p>	<p>Communication of water supply interruption stages should be handled according to the identified public notification procedures.</p> <p>Press releases should also be handled according to the identified utility procedures.</p>	<p><i>See ERP Appendix D.</i></p> <p><i>See ERP Appendix D for Press Releases.</i></p>
<p>IV. Recovery and Return to Safety</p>	<p>Alternative water supply options have been identified in the utility emergency response plan (ERP). In the event of a catastrophic, immediate need, it is likely these will be utilized. This includes information on local interconnections with neighboring sources, area water haulers, temporary storage options, etc.</p> <p>If there have been lines with no water or negative pressures, a precautionary boil order should be issued by the utility until line tests on two consecutive days show the lines to be safe. Chlorine residuals should be increased temporarily.</p> <p>The water system may have to valve off portions of the distribution system until above ground storage tanks are refilled. Valved off areas have the potential for external contamination to enter the system through leaking joints or cracked pipe. Before placing a valved off area back in service, the system should issue a precautionary boil order, increase the chlorine residual throughout the system and obtain safe bacteriological samples from</p>	<p><i>See ERP Alternative Water Sources, Appendix C.</i></p> <p><i>See boil order release Appendix D, Press Releases.</i></p> <p><i>See boil order release Appendix D, Press Releases.</i></p>

AP 6 – Water Supply Interruption

	<p>representative areas of the system on two consecutive days. The precautionary boil order may be lifted once the required safe samples are obtained.</p> <p>The system should be repressurized slowly to avoid water hammer and the potential for damage to the lines.</p> <p>Air should be bled from lines as they refill since entrapped air can impede flows and may cause line damage.</p>	
V. Report of Findings	<p>In addition to completing the appropriate filings with local authorities and agencies, it is recommended that the Utility assemble the relevant personnel to review the effectiveness of the action plan and reinforce lessons learned in the process.</p>	
VI. AP-6 Revision Dates		

AP 7A - Bomb Threat (Telephone / In Person)

AP Summary:	This Action Plan applies to the receipt of a bomb threat via telephone or in person. It is important to develop this plan in counsel with the local police and the local fire department services.	
Initiation and Notification:	<p>Initiate this AP as soon as the bomb threat is received</p> <p>As soon as possible, notify:</p> <ul style="list-style-type: none"> • 911 • Chief of Police, Joe Grebmeier <p>The WUERM should then notify others as appropriate. Examples include:</p> <ul style="list-style-type: none"> • Local Fire District • Public Works Department • FBI • ATF 	<i>Notification phone numbers can be obtained from the Organization Contact List in Appendix C of the ERP.</i>
Equipment Identified:	<p>Equipment : Types of equipment needed are determined by the first responder at the site, and communicated to the PWD Corporation Yard.</p> <p>Location: All appropriate equipment (hand tools and heavy equipment) for each utility is stored at the PWD Corporation Yard.</p>	
Specific Activities:		
I. Assess the Problem	As a rule, all bomb threats should be considered credible until proven otherwise.	<i>Due to the diversity of facilities, each utility is encouraged to undertake an audit of their own facilities and consult with local emergency services such as fire and police while creating their evacuation plan. If it is not possible during the creation, then certainly consult before instituting the plan.</i>

AP 7A – Bomb Threat (Telephone / In Person)

<p>II. Isolate and Fix the Problem</p>	<p>Threat received via Telephone</p> <ol style="list-style-type: none"> 1. Remain Calm 2. If possible record the message 3. Fill out Bomb Threat Checklist while performing the following: <ol style="list-style-type: none"> a. Listen b. Be Calm and Courteous c. Keep the caller on the line as long as possible d. Ask him/her to repeat the message e. Record every word spoken by the person f. Do not speak to anyone unless directed to do so g. WHEN caller hangs up, THEN implement City of Greenfield policy to either hang up or not hang up the phone. 4. Notify the WUERM, John Alves if not already done 5. Call the local police (911 or the emergency number for your area) and report the threat immediately. 6. Implement the City of Greenfield policy on searching for the bomb. 7. Implement the City of Greenfield policy evacuation. 8. IF evacuating building, THEN Take the Bomb Threat Checklist with you. 	<p><i>It is always desirable that more than one person listens in on the call. To do this, have a pre-established signaling system in place to engage another listener if possible.</i></p> <p><i>Not hanging up the phone may be useful to law enforcement authorities in tracing the call. Hanging up and dialing *57 (where available) may allow a trace of the call. Consult with City of Greenfield management and local law enforcement.</i></p> <p><i>Develop a plan for conducting a bomb search. Establish time considerations in the plan commensurate with utility size and resources. For example, if time until detonation is less than ½ hour, immediate evacuation may be advisable. If greater than ½ hour a search should be conducted. Consult with the local police, local fire department, or other local authority to determine who will conduct the search. In most cases, because of their familiarity with the facility, the search is best conducted by utility personnel, however this requires that they be trained properly in search techniques. The police or fire department may be available to assist in the training or be able to provide advice as to who can provide the training.</i></p>
<p>II. Isolate and Fix the Problem</p>	<ul style="list-style-type: none"> • Make a quick visual sweep of your area for any unusual items and proceed to a designated gathering area sufficiently located away from the building. 	<p><i>Let the trained bomb technician determine what is or is not a bomb.</i></p> <p><i>Note that a bomber wishing to cause personal injuries could place</i></p>

**AP 7A - Bomb Threat
(Telephone / In Person)**

	<ul style="list-style-type: none"> • Direct any media questions to the Information Office, Anna Vega, [IO]. • If a bomb is found note: <ul style="list-style-type: none"> ○ Exact location of the object ○ Size of object ○ Type of container or wrappings and marking on package ○ Any sound coming from object <p>Threat received in person:</p> <ol style="list-style-type: none"> 1. Cooperate with the individual or group. 2. Try to get the attention of a co-worker. 3. Co-worker call 911. 4. Co-worker call WUERM, John Alves 5. Create a description of the adversary using a Suspect Description Form. See ERP Appendix F. 6. Direct any media questions to the Information Office, Anna Vega, [IO]. 	<p><i>a bomb near an exit normally used to evacuate and then call in the threat.</i></p>
<p>III. Monitoring</p>	<p>During a search of the building, rapid two-way communication is essential.</p> <ol style="list-style-type: none"> 1. Use existing installed telephones. 2. Alert medical personnel to stand by in the event of an accident caused by the explosion of the devise. 3. Alert fire department to stand by. <p>In event of an explosion:</p> <ol style="list-style-type: none"> 1. Get out of the building as quickly as calmly as possible. 2. IF items are falling from bookshelves or the ceiling, THEN get under a sturdy table or desk until the situation has stabilized enough for your safe passage. 3. Ensure your own safety before trying to help others. 	<p>DO NOT USE RADIOS OR OTHER WIRELESS DEVICES DURING A SEARCH. <i>The radio transmission energy can cause premature detonation of an electric initiator (blasting cap).</i></p>

**AP 7A - Bomb Threat
(Telephone / In Person)**

IV. Recovery and Return to Safety	IF evacuated, THEN do not return to the building until it is determined safe by appropriate authorities.	
V. Report of Findings	Debrief after every bomb threat response to improve procedures.	<i>The Utility Security Director, John Alves should file an internal report for the Utility's files and also provide information as requested to Local Law Enforcement and other outside agencies</i>
VI. AP 7A Revision Dates		

AP 7B - Bomb Threat (Suspicious Package / Letter)

AP Summary:	This Action Plan applies to the receipt of a suspicious package / letter or a bomb found at the utility. It is important to develop this plan in counsel with your local police and local fire department.	
Initiation and Notification:	<p>Initiate this AP as soon as a suspicious package or letter has been discovered</p> <p>As soon as possible, notify:</p> <ul style="list-style-type: none"> • 911 • Chief of Police, Joe Grebmeier <p>The WUERM should then notify others as appropriate. Examples include:</p> <ul style="list-style-type: none"> • Local Fire District • Public Works Department • FBI • ATF 	<i>Notification phone numbers can be obtained from the Organization Contact List in Appendix C of the ERP.</i>
Equipment Identified:		
Specific Activities		
I. Assess the Problem	<p>Determining if a package is suspicious involves a careful evaluation. Some points to consider are:</p> <ul style="list-style-type: none"> • Incorrect address and or titles • Titles but no names • Visual distractions • Possess a foreign postmark, airmail, or special delivery markings (Personal, Confidential, Special Delivery, Open By Addressee Only) • Return address irregularities, including no address, one not matching the postmark, or not familiar • Badly typed or poorly written addresses • A package not expected by the addressee • Deficient or excessive postage, unusual stamps • Packages within packages 	<p><i>Most bombs are homemade and can look like nearly anything. Suspect anything that looks unusual.</i></p> <p><i>Although the presence of one of these conditions does not mean, for certain, that there is a bomb in the package, check further if any of these indicators are present. Find out if the recipient is expecting the package, recognizes the return address, and if the package is the right size for the item expected. Verify the return address. If any of these comes up a "no," investigate further and alert WUERM, John Alves, and police.</i></p>

AP 7B - Bomb Threat (Suspicious Package / Letter)

<p>I. Assess the Problem</p>	<ul style="list-style-type: none"> • Be from a company/person you do not recognize • Be hand delivered by a person other than normal delivery persons, especially by a person using a non-delivery type vehicle • Foul Odor • Left behind by someone you have not seen before • Left behind by someone known to carry a grudge against you, your facility, someone at your facility • Oily, stained, or crystallization on the outside • Rigid or bulky • Odd shaped, unevenly-weighted, lopsided, or lumpy • Possess protruding wires or tinfoil • Over-wrapped with excessive securing material such as tape or string • Feel (See notes section to the right) 	<p>DO NOT OPEN SUSPICIOUS PACKAGES and / or LETTERS.</p> <p><i>Packages within packages may be an attempt to mask or hide the actual explosive device</i></p> <p><i>If the bomb contains nitrogen based fertilizers there will be an odor that people can smell. The next time you fertilize your lawn or garden, smell the fertilizer. This is similar to the odor of nitrogen based bomb components.</i></p> <p><i>Chemicals used may "sweat" that in turn stain the package wrapper.</i></p> <p><i>Letters have a normal 'feel'. Those that contain devices may not 'feel' right as the presence of plastic or metallic components may alter the normal 'feel' of a letter.</i></p>
<p>II. Isolate and Fix the Problem</p>	<ol style="list-style-type: none"> 1. Remain Calm. 2. Do not touch or move package. 3. Notify the WUERM, John Alves if not already done. 4. While waiting for instructions, clear the area around the object and try to determine ownership. (Did anyone see who left this here?) 	<p><i>Let the trained bomb technician determine what is or is not a bomb.</i></p>
<p>II. Isolate and Fix the Problem</p>	<ol style="list-style-type: none"> 5. Notify police. 6. Implement the City of Greenfield policy on evacuation. 7. Direct any media questions to the Information Office, Anna Vega, [IO]. <p>If a bomb is found note:</p> <ul style="list-style-type: none"> • Exact location of the object • Size of object • Type of container or wrappings and 	<p>DO NOT USE RADIOS OR OTHER WIRELESS DEVICES NEAR A SUSPECTED BOMB.</p> <p><i>The radio transmission energy can cause premature detonation of an electric initiator (blasting cap)</i></p>

**AP 7B – Bomb Threat
(Suspicious Package / Letter)**

	marking on package <ul style="list-style-type: none"> • Any sound coming from object 	
III. Monitoring	In event of an explosion <ul style="list-style-type: none"> • Get out of the building as quickly as calmly as possible. • IF items are falling from bookshelves or the ceiling, THEN get under a sturdy table or desk until the situation has stabilized enough for your safe passage. • Ensure your own safety before trying to help others. 	
IV. Recovery and Return to Safety	IF evacuated, THEN do not return to the building until it is determined safe by appropriate authorities.	
V. Report of Findings	Debrief after every bomb threat response to improve procedures.	<i>The Utility Security Director, John Alves should file an internal report for the Utility's files and also provide information as requested to Local Law Enforcement and other outside agencies</i>
VI. AP 7B Revision Dates		

AP 7C - Bomb Threat (Written Threat Received)

AP Summary:	This Action Plan applies to the receipt of a written bomb threat. It is important to develop this plan in counsel with your local police and local fire department.	
Initiation and Notification:	<p>Initiate this AP as soon as a written threat has been discovered</p> <p>As soon as possible, notify:</p> <ul style="list-style-type: none"> • 911 • Chief of Police, Joe Grebmeier <p>The WUERM should then notify others as appropriate. Examples include:</p> <ul style="list-style-type: none"> • Local Fire District • Public Works Department • FBI • ATF 	<i>Notification phone numbers can be obtained from the Organization Contact List in Appendix C of the ERP.</i>
Equipment Identified:	<p>Equipment: Types of equipment needed are determined by the first responder at the site, and communicated to the PWD Corporation Yard.</p> <p>Location: All appropriate equipment (hand tools and heavy equipment) for each utility is stored at the PWD Corporation Yard.</p>	
Specific Activities		
I. Assess the Problem	As a rule, all bomb threats should be considered credible until proven otherwise.	
II. Isolate and Fix the Problem	<p>Written Threats:</p> <ol style="list-style-type: none"> 1. Remain Calm. 2. Save all materials, including any envelope or container. 3. Once recognized as a bomb threat, 	<p><i>Every effort must be made to retain evidence such as fingerprints, handwriting, or typewriting, paper, and postal marks. These will prove essential in tracing the threat and identifying the writer.</i></p> <p><i>Let a trained bomb technician determine what is or is not a bomb. Develop a plan for conducting a bomb search. Establish time</i></p>

AP 7C – Bomb Threat (Written Threat Received)

	<p>avoid further handling.</p> <ol style="list-style-type: none"> 4. Leave the message where found. 5. Do not alarm others; however contact WUERM, John Alves immediately. 6. Contact the local police. 7. Implement the City of Greenfield policy on searching for the bomb. 8. Implement the City of Greenfield policy on evacuation. 9. Make a quick visual sweep of your area for any unusual items and proceed to a designated gathering area sufficiently located away from the building. 10. Direct any media questions to the Information Office, Anna Vega, [IO]. 	<p><i>considerations in the plan commensurate with utility size and resources. For example, if time until detonation is less than ½ hour, immediate evacuation may be advisable. If greater than ½ hour a search should be conducted. Consult with the police, fire department, or other local authority to determine who will conduct the search. In most cases, because of their familiarity with the facility, the search is best conducted by utility personnel; however this requires that they be trained properly in search techniques. The police or fire department may be available to assist in the training or be able to advise as to who can provide the training.</i></p>
	<p>If a bomb is found note:</p> <ul style="list-style-type: none"> • Exact location of the object • Size of object • Type of container or wrappings and marking on package • Any sound coming from object 	<p><i>Note that a bomber wishing to cause personal injuries could place a bomb near an exit normally used to evacuate and then call in the threat.</i></p> <p><i>Due to the diversity of facilities, each utility is encouraged to undertake an audit of their own facilities and consult with local emergency services such as fire and police while creating their evacuation plan. If it is not possible during the creation, then certainly consult before instituting the plan.</i></p>
<p>III. Monitoring</p>	<p>During a search of the building, rapid two-way communication is essential.</p> <ul style="list-style-type: none"> • Use existing installed telephones. • Alert medical personnel to stand by in the event of an accident caused by the explosion of the devise. • Alert fire department to stand by. 	<p>DO NOT USE RADIOS OR OTHER WIRELESS DEVICES DURING A SEARCH. <i>The radio transmission energy can cause premature detonation of an electric initiator (blasting cap)</i></p>

**AP 7C - Bomb Threat
(Written Threat Received)**

	<p>In event of an explosion</p> <ol style="list-style-type: none"> 1. Get out of the building as quickly as calmly as possible. 2. IF items are falling from bookshelves or the ceiling, THEN get under a sturdy table or desk until the situation has stabilized enough for your safe passage. 3. Ensure your own safety before trying to help others. 	
<p>IV. Recovery and Return to Safety</p>	<p>IF evacuated, THEN do not return to the building until it is determined safe by appropriate authorities.</p>	
<p>V. Report of Findings</p>	<p>Debrief after every bomb threat response to improve procedures.</p>	<p><i>The Utility Security Director, John Alves should file an internal report for the Utility's files and also provide information as requested to Local Law Enforcement and other outside agencies</i></p>
<p>VI. AP 7C Revision Dates</p>		

Appendix B
System and Facility Information

SYSTEM SHUT DOWN AND ISOLATION PLAN

SYSTEM COMPONENT	METHOD OF SHUTDOWN OR ISOLATION		LOCATION & PERSON TO PERFORM SHUTDOWN OR ISOLATION		SPECIAL REQUIREMENTS
	Automated	Manual	SCADA Controlled	Manual Operation	
Storage Tank No. 1 - 13 th & Oak	No	Manual valve in Storage Tank Valve Vault	N/A	Distribution System Operator	Locked Access to gate and key required for valve vault entry hatch.
Pumping Plant - 13 th & Oak	No	MCC in Pump Plant Building	N/A	Distribution System Operator	Locked Access - Key required for gate and pump plant building.
Well No. 5 - 13 th & Oak	No	MCC in Pump Plant Building	N/A	Distribution System Operator	Locked Access - Key required for gate and pump plant building.
Wells No. 1 & 6 - 14 th St.	No	Manual valve and MCC box	N/A	Distribution System Operator	Locked Access - Key required for gate and MCC box.

Instructions for System Shut Down and Isolation Plan Table

The purpose of the System Shut Down and Isolation Plan is to provide clear and easy-to-understand guidance regarding how and where to isolate and/or shut down portions the water system to prevent the movement of contamination.

1. System Components - Enter all physical assets that could potentially be the introduction point for a contaminant. The System Components list can be imported from the VSAT physical asset list.
2. Method of Shut Down or Isolation - Describe automated and manual methods by which shutdown or isolation of the asset can occur. In cases where automated controls are available, be sure to list manual control points (valves, power cut-offs, etc.) that can be used if the SCADA system is not functioning.
3. Location & Person to Perform Shut Down or Isolation - Describe the individual (position, title, workplace) who will actually perform the SCADA controlled or manual shut down or isolation procedures. This table will serve as a reference for the WUERM during emergency situations and/or contamination incidents, so it is important to be as specific as possible regarding who will actually be executing the shut down or isolation order, and where the person can be found.
4. Special Requirements - Describe any special requirements that need to be considered in order to perform the shut down or isolation of the asset. Examples of special requirements include; confined space certification, PPE, entry codes, keys, specialized tools and safety equipment (wrenches, ladders, harnesses, flashlights, etc.), and locations of power cut-offs.

Section B.1

Engineer's Facility Drawings

The following pages contain images for Engineering Documents on File at the City of Greenfield's Corporation Yard located at 920 Walnut Avenue, Greenfield, CA.

REVISIONS BY	

COVER SHEET
WELL PUMP STATION AND APPURTENANCES
CITY OF GREENFIELD

FREITAS + FREITAS
Engineering and Planning Consultants
P.O. Box 1740 Santa Cruz, CA 95061 (408) 429-5018

Date: 4/91
Drawn by: J. Brown
Checked by: J. Brown
Scale: Digital Graphic
Sheet: 1 of 4

Construction Drawings

for

Well Pump Station and Appurtenances

City of Greenfield

Monterey County

April, 1991

SHEET INDEX

- Sheet 1 - Cover Sheet
- Sheet 2 - Site Plans
- Sheet 3 - Details
- Sheet 4 - Electrical

Prepared By
Freitas + Freitas
 Engineering and Planning Consultants
 P.O. Box 1740
 501 Mission Street
 Santa Cruz, CA 95061
 408-429-5018
 408-429-1264 (FAX)

Approved By: *[Signature]*
 City Engineer
 PCE 11188 Exp. 6/30/93
HANNA & BRUNETTI
 CIVIL ENGINEERS & LAND SURVEYORS
 7861 EIGLEBERRY STREET - GILROY, CALIFORNIA - 95020
 PH: (408) 842-2173

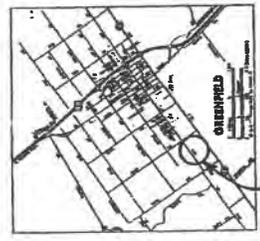
LEGEND

- indicates detail number
- indicates sheet number

CONTRACTOR SHALL REVIEW & VERIFY ALL PLANS & GENERAL ENGINEERING INFORMATION FOR ACCURACY & COMPLETENESS BEFORE PROCEEDING WITH CONSTRUCTION. CLAIMS BY CONTRACTOR SHALL BE WAIVED.



LOCATION MAP
NOT TO SCALE



VICINITY MAP
NOT TO SCALE

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A. F. F. & P. 1991



CITY OF GREENFIELD

CITY WELL NO. 6 INTERTIE PROJECT

ABBREVIATIONS

A.I.P.	ABANDON IN PLACE	MAX.	MAXIMUM
BOT.	BOTTOM	M.H.	MANHOLE
C.B.	CATCH BASIN	MIL.	MILLIMETER
C.I.	CAST IRON PIPE	MIN.	MINIMUM
CL.	CENTER LINE	NPT	NOMINAL PIPE THREAD
CLR.	CLEAR	O.C.	ON CENTER
CONC.	CONCRETE	O.F.	OVER FLOW
CPLG.	COUPLING	O.P.E.	OWNER-PURCHASED EQUIPMENT
DIA.	DIAMETER	P.	PUMP
D.I.P.	DUCTILE IRON PIPE	PLYWD	PLYWOOD
DBL.	DOUBLE	PVC	POLYVINYL CHLORIDE (PIPE)
E	ELECTRICAL	RGS	RIGID GALVANIZED STEEL
EQUIV.	EQUIVALENT	S	SLOPE
EXIST.	EXISTING	SCH.	SOCKET FITTING
FF	FINISH FLOOR	SHT.	SCHEDULE
FG	FINISH GRADE	ST.	SHEET
FL	FLOW LINE	STD.	STAINLESS
FLG.	FLANGE CONNECTION	STL.	STANDARD
GALV.	GALVANIZED	T.B.	STEEL
GRD.	GRADE	T.G.	THRUST BLOCK
HVY.	HEAVY	THD.	TOP-OF-GRADE
HP	HORSEPOWER	T.O.R.	THREADED
INV.	INVERT	V	TOP-OF-ROOF
L	LONG	VD.	VOLT
L.G.	LEVEL GAUGE	WD.	WOOD

DRAWING NO. DESCRIPTION

GENERAL/CIVIL:	
G1	PIPING PLAN
G2	SITE PLAN AND DETAILS
ELECTRICAL/ CONTROLS	
E1	GENERAL ELECTRICAL LAYOUT
E2	ONE LINE DIAGRAM
E3	WIRING & CONTROLS

FLUORO WEST, INC.
1000 WEST 10TH AVENUE, SUITE 100
DENVER, COLORADO 80202

CITY OF GREENFIELD
WELL NO. 6
INTERTIE PROJECT

Client: CITY OF GREENFIELD
Project: WELL NO. 6 INTERTIE PROJECT

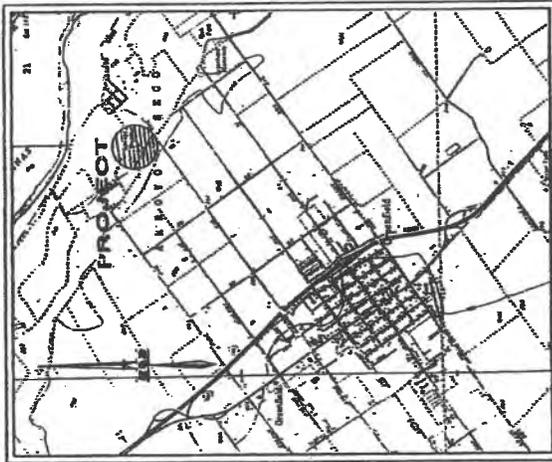
DATE	BY	APPROVED
8/17/01	W. J. [Signature]	[Signature]
Checked for construction		
DATE	BY	APPROVED

USE OF THESE PLANS AND SPECIFICATIONS SHALL BE RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY WERE PREPARED AND NO ALTERATION OR MODIFICATION SHALL BE MADE THEREON WITHOUT THE WRITTEN CONSENT OF THE ENGINEER. VISUAL CONTACT WITH THESE PLANS AND SPECIFICATIONS SHALL CONSTITUTE PRIMA FACIE EVIDENCE OF THE ACCEPTANCE OF THESE RESTRICTIONS.

IMPROVEMENT PLANS

for
WASTE WATER TREATMENT PLANT EXPANSION
CITY OF GREENFIELD
MONTEREY COUNTY

OCTOBER 1992



LOCATION MAP
 SCALE 1"=1000'

SHEET INDEX

1. COVER SHEET
2. GENERAL NOTES
3. SITE PLAN
4. POND PLAN
5. CLAMBER PLAN, SECTION & DETAILS
6. SCUM PIT PLAN
7. CONTROL BUILDING MODIFICATIONS
8. CLAMBER STRUCTURAL PLANS
9. CLAMBER STRUCTURAL DETAILS
10. TYPICAL STRUCTURAL DETAILS AND NOTES
11. ELECTRICAL SITE PLAN
12. ELECTRICAL DETAILS

DATE: OCTOBER 1992
 SCALE: AS SHOWN
 COVER SHEET 7

FREITAS + FREITAS
 Engineering and Planning Consultants
 505 Second Ave., Suite A, Santa Cruz, CA 95062
 (408) 427-2173

HANNA & BRUNETTI
 CIVIL ENGINEERS & LAND SURVEYORS
 7253 CIGLER STREET
 GILROY, CALIFORNIA 95020
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REVISIONS:
 NO. DESCRIPTION
 DATE

SHEET 7
 JOB NO. 9222

DATE: 10-15-1992

APPROVED: *Arnold R. Brunetti*
 ARNOLD R. BRUNETTI
 PCE 17189
 EXPIRES 6-30-93

DATE: 12-15-1992

APPROVED: *Michael J. Freitas*
 MICHAEL J. FREITAS
 PCE 13345
 EXPIRES 12-31-93

Professional Engineer & Surveyor
 No. 17189
 Exp. 6-30-93
 State of California

Professional Engineer & Surveyor
 No. 13345
 Exp. 12-31-93
 State of California

CONTRACTOR SHALL POSSESS A VALID CLASS A GENERAL BUILDING CONTRACTORS LICENSE

Appendix C
Emergency Phone Lists

TABLE C-1

911 Area	Direct Phone Number
Monterey County Emergency Communications Department Lynn Dibold, Director	1-831-769-8880
Dispatch Direct Line	1-831-385-8311 or 1-831-769-8888
Fax Line	1-831-769-8898

The individual(s) who discover the threat or emergency situation will immediately notify City of Greenfield's 24-hour Call Center. The *Dispatcher at the Call Center* will then notify the Water Utility Emergency Response Manager or WUERM. The remainder of the City of Greenfield staff will be notified according to the table below.

TABLE C-2

Area of Responsibility during an Emergency	Name and Title	Contact Numbers
Wastewater Treatment Plant Manager	John Alves, Public Works Dir.	1-831-674-2635
Water System Manager	John Alves, Public Works Dir.	1-831-674-2635
Safety Officer	None	
Data (IT) Manager	None	
City Engineering Technical Support	Michael Ranker, City Engineer	1-831-455-2344
Water Utility Engineering Technical Support	Michael Freitas, Consultant	1-831-429-5018
Security Director	Joe Grebmeier, Chief of Police	1-831-674-5111
Maintenance Supervisor	Various	
Laboratory Director	None	
City Management	Anna Vega, City Manager	1-831-674-5591
Utilities Dispatch	City Hall Personnel	1-831-674-5591
City Facilities Manager	John Alves, Public Works Dir.	1-831-674-2635
On-Call PW Employee	Varies	1-831-286-0055 Pager

TABLE C-3

Local Agencies	Name	Contact Numbers
City Police Department	Joe Grebmeier, Chief of Police	1-831-674-5111
Fire Department	John Simms, Fire Chief	1-831-674-5484
HAZMAT Team	Salinas Fire Department Edward Montez (Interim Chief)	1-831-758-7261
Hospital / Critical Care Facility	Mee Memorial Hospital	1-831-385-6000
	Natividad Medical Center	1-831-755-4111
	Salinas Valley Memorial	1-831-757-4333
Power Company	Pacific Gas & Electric	1-831-784-3562
Elected Official	John Huerta Jr., Mayor	1-831-674-1892
		1-831-755-4730

TABLE C-4

County Agencies	Name	Contact Numbers
County Public Health Officer	Hugh F. Stallworth, MD, MPH	1-831-755-4515
County Director of Environmental Health Department	Allen Stroh	1-831-796-1901
County OES	Harry Robins robinsh@co.monterey.ca.us	1-831-796-1901
County HAZMAT Team	Salinas Fire Department	1-831-758-7261

TABLE C-5

State Agencies	Name	Contact Numbers
CDHS District Engineer	Betsy Lichti, District Engineer If can't get a hold of "DE", call the CA Warning Center's 24/7 phone number and ask for the CDHS Duty Officer. A CDHS manger will be contacted and call the water system	1-831-655-6933 Day 1-831-595-0058 Evening 1-831-236-325??? Cell
Department of Water Resources		
Department of Fish and Game		
Department of Toxic Substances Control		
Regional Water Quality Control Board		
CA OES (State OES)	Warning Center (Ask for CDHS Duty Officer-Drinking Water Program)	(800) 852-7550 24/7 (916) 845-8911 24/7
California Public Utilities Commission (if privately owned system)		

TABLE C-6

Federal Agencies	Name	Contact Numbers
FBI	Resident Office Resident Office Fax San Francisco Office	1-831-763-5481 1-831-763-5497 1-415-553-7400 (24/7)
EPA	US Region IX	1-800-300-2193 (24/7)
Department of Homeland Security (DHS)	Federal Emergency Management Agency – Region IX Main Office	1-510-627-7100 Office 1-510-627-7112 Fax
Health and Human Services (HHS)	Region IX	1-415-437-8096
Center for Disease Control (CDC)	Hotline	1-888-246-2675
ATF	San Francisco Field Office BOMB Hotline	1-925-479-7500 1-888-283-2662

TABLE C-7

Vendors / Contractors	Name	Contact Numbers
Internet Service Provider	Redshift Internet Services	1-888-473-3744
Computer Equipment Vendor	None	
Fuel Supplier (backup generator)	Monterey County Petroleum	1-831-424-2556
Computer Emergency Response Team	None	

TABLE C-8

Customer Name	Critical Care Customers	Large Water Users	Primary Contact Information	Secondary Contact Information
Mee Memorial Clinic	Yes		1-831-674-0112	
Clinica de Salud	Yes		1-831-674-5344	
Greenfield Urgent Care	Yes		1-831-674-5066	
Los Ositos Senior Citizen's Housing	Yes	Yes	1-831-674-2974	
Touch of Grace Boarding Home	Yes	No	1-831-674-3717	

TABLE C-9

Firefighting Water Source	Contact Information	Quantity Available
City of Soledad	Cliff Price, Public Works Dir. Phone: 1-831-678-3963 x149	Unknown
City of King	Public Works Director Phone: 1-831-386-5938	
Add additional sources as available		

TABLE C-10

Supplier	Contact Information
Bay Area Water Trucks	Contact Person: Office phone: 1-408-298-0500 Mobile phone: Pager:
Sala Bros, Inc.	Contact Person: Office phone: 1-831-726-3903 Mobile phone: Pager:

TABLE C-11

Media Type	Contact Information
Greenfield News	Phone: 1-831-674-5907 Fax: 1-831-385-4799
The Californian	Phone 1-831-424-2221
Monterey County Herald	Phone 1-831-372-3311
KSBW TV	Phone: 1-831-422-8206 Fax: 1-831-422-0124
KION-TV	Phone: 1-831-757-6397 Fax: 1-831-422-9365
KRKC-Radio	Phone: 1-831-385-5421 Fax: 1-831-385-0635

TABLE C-12

County Agency	Name	Contact Numbers
County Health Department	Primary: Cheryl Sandoval	1-831-755-4552 or 1-831-582-0629
County Health Department	1 st Alternate:	
County Health Department	2 nd Alternate:	
County Health Officer	Primary:	
County Health Officer	1 st Alternate:	
County Health Officer	2 nd Alternate:	

Appendix D
Public Notices and Press Releases

PUBLIC NOTICE

CONSUMER ALERT DURING WATER OUTAGES OR PERIODS OF LOW PRESSURE

1. If you are experiencing water outages or low water pressure, immediately discontinue any non-essential water usage. This includes all outdoor irrigation and car washing. Minimizing usage will reduce the potential for the water system to lose pressure or completely run out of water. Please notify your water system of the outage or low pressure.
2. If the water looks cloudy or dirty, you should not drink it. Upon return of normal water service, you should flush the hot and cold water lines until the water appears clear and the water quality returns to normal.
3. If you are concerned about the water quality or are uncertain of its safety, you may add eight drops of household bleach to one gallon of water and let it sit for 30 minutes or alternatively, if you are able, water can be boiled for one minute at a rolling boil to ensure its safety.
4. Use of home treatment devices does not guarantee the water supply is safe after low pressure situations.
5. Do not be alarmed if you experience higher than normal chlorine concentrations in your water supply since the California Department of Health Services is advising public water utilities to increase chlorine residuals in areas subject to low pressure or outages.
6. The California Department of Health Services has also advised public water systems to increase the bacteriological water quality monitoring of the distribution system in areas subject to low pressure. They may be collecting samples in your area to confirm that the water remains safe. You will be advised if the sampling reveals a water quality problem.
7. Your water system is committed to make certain that an adequate quantity of clean, wholesome, and potable water is delivered to you. We recommend that you discuss the information in this notice with members of your family to ensure that all family members are prepared should water outages or low water pressure occur.

Date:

UNSAFE WATER ALERT

[Insert one-liner language other than Spanish here, otherwise delete.]

City of Greenfield water is possibly contaminated with [an unknown substance]

DO NOT DRINK YOUR WATER

Failure to follow this advisory could result in illness.

An unknown substance has been added to the drinking water supplied by the City of Greenfield due to a recent [intrusion; break-in] at [one of the wells; our treatment plant; storage tank; specific facility]. The California Department of Health Services, Monterey County Health Department, and City of Greenfield are advising residents of Greenfield to **NOT USE THE TAP WATER FOR DRINKING AND COOKING UNTIL FURTHER NOTICE.**

What should I do?

- **DO NOT DRINK YOUR TAP WATER---USE ONLY BOTTLED WATER.** Bottled water should be used for all drinking (including baby formula and juice), brushing teeth, washing dishes, making ice and food preparation **until further notice.**
- **DO NOT TRY AND TREAT THE WATER YOURSELF.** Boiling, freezing, filtering, adding chlorine or other disinfectants, or letting water stand will not make the water safe.

OPTIONS

- Optional: Potable water is available at the following locations: [List locations]
Please bring a clean water container (5 gallons maximum capacity).

We will inform you when tests show that the water is safe again. We expect to resolve the problem within [estimated time frame].

For more information call:

Water Utility contact: John Alves, Public Works Director, 1-831-674-2635 920 Walnut Ave,
Greenfield

California Department of Health Services at: Betsy Lichti, District Engineer 1-831-655-6933.

Monterey County Health Department: Cheryl Sandoval, 1-831-755-4552.

This notice is being sent to you by the City of Greenfield, California Public Water System ID #271008. Date Distributed: [date].

Please share this information with all other people who receive this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand.

LAST UPDATED – 01/27/04

Date:

UNSAFE WATER ALERT

[Insert one-liner language other than Spanish here, otherwise delete.]

City of Greenfield water is possibly contaminated with [an unknown substance]

DO NOT USE YOUR WATER

Failure to follow this advisory could result in illness.

An unknown substance has been added to the drinking water supplied by the City of Greenfield due to a recent [intrusion; break-in] at [one of the wells; our treatment plant; storage tank; specific facility]. The California Department of Health Services, Monterey County Health Department, and City of Greenfield are advising residents of Greenfield to **NOT USE THE TAP WATER FOR DRINKING, COOKING, HAND WASHING, OR BATHING UNTIL FURTHER NOTICE.**

What should I do?

- **DO NOT USE YOUR TAP WATER---USE ONLY BOTTLED WATER.** Bottled water should be used for all drinking (including baby formula and juice), brushing teeth, washing dishes, making ice, food preparation and bathing **until further notice.**
- **DO NOT TRY AND TREAT THE WATER YOURSELF.** Boiling, freezing, filtering, adding chlorine or other disinfectants, or letting water stand will not make the water safe.

OPTIONS

- Optional: Potable water is available at the following locations: [List locations]
Please bring a clean water container (5 gallons maximum capacity).

We will inform you when tests show that the water is safe again. We expect to resolve the problem within [estimated time frame].

For more information call:

Water Utility contact: John Alves, Public Works Director, 1-831-674-2635 920 Walnut Ave, Greenfield

California Department of Health Services at: Betsy Lichti, District Engineer 1-831-655-6933.

Monterey County Health Department: Cheryl Sandoval, 1-831-755-4552.

This notice is being sent to you by the City of Greenfield, California Public Water System ID #271008. Date Distributed: [date].

Please share this information with all other people who receive this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand.

LAST UPDATED – 01/27/04

Date:

BOIL WATER ORDER

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

BOIL YOUR WATER BEFORE USING

Failure to follow this advisory could result in stomach or intestinal illness.

Due to the recent event [e.g., water outage, power outage, flood, fire, earthquake or other emergency situation], the California Department of Health Services in conjunction with the Monterey County Health Department, and City of Greenfield are advising residents of Greenfield to use boiled tap water or bottled water for drinking and cooking purposes as a safety precaution.

DO NOT DRINK THE WATER WITHOUT BOILING IT FIRST. Bring all water to a boil, **let it boil for one (1) minute**, and let it cool before using, or use bottled water. Boiled or bottled water should be used for drinking and food preparation **until further notice**. Boiling kills bacteria and other organisms in the water. [or This is the preferred method to assure that the water is safe to drink.]

Optional alternative to include for prolonged situations where it fits.

- **An alternative method of purification for residents that do not have gas or electricity available is to use fresh liquid household bleach (Clorox®, Purex®, etc.). To do so, add 8 drops (or 1/4 teaspoon) of bleach per gallon of clear water or 16 drops (or 1/2 teaspoon) per gallon of cloudy water, mix thoroughly, and allow to stand for 30 minutes before using. A chlorine-like taste and odor will result from this purification procedure and is an indication that adequate disinfection has taken place.**
- Water purification tablets may also be used by following the manufacturer's instructions.
- Optional: Potable water is available at the following locations: [List locations]
Please bring a clean water container (5 gallons maximum capacity).

We will inform you when tests show no bacteria and you no longer need to boil your water. We anticipate resolving the problem within [estimated time frame].

For more information call:

Water Utility contact: John Alves, Public Works Director, 1-831-674-2635 920 Walnut Ave, Greenfield

California Department of Health Services at: Betsy Lichti, District Engineer 1-831-655-6933.

Monterey County Health Department: Cheryl Sandoval, 1-831-755-4552.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

FECHA:

ORDEN DE HERVIR EL AGUA

Hierva su Agua antes de Usarla

Falta de seguir este aviso podría tener resultados estómago o enfermedad intestinal

Debido a la [falta de agua (water outage), falta de electricidad (power outage), inundación (flood), incendio (fire), temblor (earthquake) or other emergency], durante [date, month, etc.], el Departamento de California de Servicios de Salud en conjunción con la [City, water system name] y el Condado de Monterey esta aconsejando a todos usuarios de el sistema de City of Greenfield que hiervan el agua de canilla o usen agua embotellada para beber y cocinar como medida de seguridad.

Que debo hacer?

NO BEBA EL AGUA SIN ANTES HERVIRLA. Hierva toda el agua, **déjela hervir por un minuto**, y déjela reposar antes de usarla, o utilice agua embotellada. Agua hervida o embotellada debe ser usada para beber y para preparar la comida hasta el próximo aviso. Hierviéndola mata a bacteria y otros organismos en el agua. [or Este es el método preferido para asegurar que el agua esta segura para beber.]

Optional alternative to include for prolonged situations where it fits.

- Otro método de purificación del agua para los residentes que no tengan gas o electricidad disponibles es utilizar blanqueador líquido de uso doméstico (Clorox®, Purex®, etc.). Para hacerlo, añada 8 gotas (o 1/4 cucharadita) de blanqueador por galón de agua clara, o 16 gotas (o media cucharadita) por galón de agua turbia, mézclelo bien y déjelo descansar 30 minutos antes de utilizarlo. Este procedimiento de purificación causa que el agua huela y tenga sabor a cloro, lo que indica que ha sido desinfectada de manera adecuada.
- También se puede utilizar tabletas de purificación del agua siguiendo las instrucciones del fabricante.
- Optativo: Hay agua potable disponible en los siguientes sitios: [List locations]
Traiga un recipiente limpio para el agua (con una capacidad máxima de 5 galones).

Le informaremos cuando las pruebas demuestren que no hay bacterias y que usted ya no necesita hervir su agua. Anticipamos que resolveremos el problema el [date of expected resolution in Spanish day-month-year].

Para mas información, por favor póngase en contacto con:

Contacto del sistema de agua: John Alves, Public Works Director, 1-831-674-2635 920 Walnut Ave.

Departamento de Salud de California: Betsy Lichti, District Engineer 1-831-655-6933.

Condado de Monterey: Cheryl Sandoval, 1-831-755-4552.

Por favor comparta esta información con otros que pueden tomar de esta agua, colocando este aviso en lugares visibles, o remitiéndolo por correo, o entregándolo manualmente. Es de particular interés distribuir este aviso ampliamente si usted lo recibe representando un negocio, un hospital u hogar de infantes u hogar de ancianos o comunidad residencial.

LAST UPDATED – 01/14/04

Appendix E
California Statewide Emergency Notification
Plan

State of California—Health and Human Services Agency
Department of Health Services



ARNOLD SCHWARZENEGGER
 Governor

California
 Department of
 Health Services

WATER QUALITY EMERGENCY NOTIFICATION PLAN

Name of Utility: City of Greenfield - 2710008

Physical Location/Address: 920 Walnut Avenue, Greenfield, CA 93927

The following persons have been designated to implement the plan upon notification by the State Department of Health Services that an imminent danger to the health of the water users exists:

Water Utility:	Contact Name & Title	Email Address	Telephone		
			Day	Evening	Cell
1.	John Alves, Deputy City Manager	gpwd@greenfield-ca.com	(831) 674-2635	(831) 286-0053	Pager 674-5566/595-1205
2.	Anna Vega, City Manager	citymanager@greenfield-ca.com	674-5591	674-0480	594-8432
3.	Greenfield Police Department		674-5111	911	

The implementation of the plan will be carried out with the following State and County Health Department personnel:

State & County Health Departments:	Contact Name & Title	Telephone		Cell #
		Day	Evening	
1.	Betsy Lichti, District Engineer California Department of Health Services	(831) 655-6933	(831) 595-0058	(831) 236-325
2.	Cheryl Sandoval Monterey County	(831) 755-4552	(831) 582-0629	
3.	Bob Shingai San Benito County	(831) 636-4035	(831) 665-9396	
4.	Andrew Strader Santa Cruz County	(831) 454-4000	(831) 471-1170	

If the above personnel cannot be reached, contact:

Office of Emergency Services Warning Center (24 hrs) (800) 852-7550 or (916) 845-8911
 When reporting a water quality emergency to the Warning Center, please ask for the California Department of Health Services—Drinking Water Program Duty Officer.

NOTIFICATION PLAN

On form included, provide a written description of the method or combination of methods to be used (radio, television, door-to-door, sound truck, etc.) to notify customers in an emergency. For each section of your plan give an estimate of the time required, necessary personnel, estimated coverage, etc. Consideration must be given to special organizations (such as schools), non-English speaking groups, and outlying water users. Ensure that the notification procedures you describe are practical and that you will be able to actually implement them in the vent of an emergency. Examples of notification plans are attached for large, medium and small communities.

Report prepared by:

John Alves
 Signature and Title

3-25-04
 Date

PLAN I (Medium Community)

During regular working hours our people will contact the news media at television station KXYZ to broadcast the necessary warning. The local radio stations will also be contacted. The television and radio personnel are available at all hours. As a follow-up measure, we will also contact the Daily Bee, a local newspaper that serves both Ourtown and Hometown.

The warnings will be issued in both English and Spanish to cover all members of the community. Outlying areas of the water service area (such as Isolated Canyon and Lonesome Mountain subdivisions) will also be notified by sound truck and/or handbill distributed to their respective areas. Both of these areas are very small and this can be done quite quickly.

A special telephone answering service can also be quickly set up at the utility headquarters (using the regular company numbers) to answer questions that will come in from consumers. Questions are anticipated, especially from the Hometown area, because that area is served by three different water companies. A map will be available to the telephone answering personnel to determine the water company serving the caller.

It is anticipated that the time for notification to the television and radio audiences will be very short. The areas served by handbill and sound truck will also be notified within an hour. For notification to be issued in other than normal hours, the same media will be contacted and an announcement will be scheduled for as long as is necessary. A sound truck(s) will be used in the early morning hours to quickly alert the people not listening to their radio or television.

PLAN II (Small Community)

Our community is very small and the most efficient means of notification will be both sound truck and handbill. It is estimated that the entire service area can be covered in less than three hours.

PLAN III (Large Community)

The same plan as implemented in Plan I should be used here with the exceptions noted. All the news media will be contacted in the entire metropolitan area. This includes all television and radio stations and all local and general area newspapers. Maps have been prepared to be distributed to the media to locate the boundaries of the water company. This system is large enough that it may only be necessary to notify some of the water users. This information will be transmitted to the media and an answering service at the water company will respond to consumers' calls. Unless the problems are limited to isolated areas it is unreasonable to assume that contact can be made through sound truck or handbill.

Appendix F
Incident Reports and Forms

Written Threat Report Form

INSTRUCTIONS

The purpose of this form is to summarize significant information from a written threat received by a drinking water utility. This form should be completed by the WUERM or an individual designated by incident command to evaluate the written threat. The summary information provided in this form is intended to support the threat evaluation process; however, the completed form is not a substitute for the complete written threat, which may contain additional, significant details.

The written threat itself (e.g., the note, letter, e-mail message, etc.) may be considered evidence and thus should be minimally handled (or not handled at all) and placed into a clean plastic bag to preserve any forensic evidence.

Remember, tampering with a drinking water system is a crime under the SDWA Amendments!

SAFETY

A suspicious letter or package could pose a threat in and of itself, so caution should be exercised if such packages are received. The US Postal Service has issued guidance when dealing with suspicious packages (http://www.usps.com/news/2001/press/pr01_1022gsa.htm).

THREAT NOTIFICATION

Name of person receiving the written threat: _____

Person(s) to whom threat was addressed: _____

Date threat received: _____ Time threat received: _____

How was the written threat received?

- | | | |
|--|---|---|
| <input type="checkbox"/> US Postal service | <input type="checkbox"/> Delivery service | <input type="checkbox"/> Courier |
| <input type="checkbox"/> Fax | <input type="checkbox"/> E-mail | <input type="checkbox"/> Hand delivered |
| <input type="checkbox"/> Other _____ | | |

If mailed, is the return address listed? Yes No

If mailed, what is the date and location of the postmark? _____

If delivered, what was the service used (list any tracking numbers)? _____

If Faxed, what is the number of the sending fax? _____

If E-mailed, what is the e-mail address of sender? _____

If hand-delivered, who delivered the message? _____

DETAILS OF THREAT

Has the water already been contaminated? Yes No

Date and time of contaminant introduction known? Yes No

Date and time if known: _____

Location of contaminant introduction known? Yes No

Site Name: _____

Type of facility

- | | | |
|--|--|---|
| <input type="checkbox"/> Source water | <input type="checkbox"/> Treatment plant | <input type="checkbox"/> Pump station |
| <input type="checkbox"/> Ground storage tank | <input type="checkbox"/> Elevated storage tank | <input type="checkbox"/> Finished water reservoir |
| <input type="checkbox"/> Distribution main | <input type="checkbox"/> Hydrant | <input type="checkbox"/> Service connection |
| <input type="checkbox"/> Other _____ | | |

Address: _____

Additional Site Information: _____

Name or type of contaminant known? Yes No

Type of contaminant

- | | | |
|-----------------------------------|-------------------------------------|---------------------------------------|
| <input type="checkbox"/> Chemical | <input type="checkbox"/> Biological | <input type="checkbox"/> Radiological |
|-----------------------------------|-------------------------------------|---------------------------------------|

Specific contaminant name/description: _____

Mode of contaminant introduction known? Yes No

Method of addition: Single dose Over time Other _____

Amount of material: _____

Additional Information: _____

Motive for contamination known? Yes No

Retaliation/revenge Political cause Religious doctrine

Other _____

Describe motivation: _____

NOTE CHARACTERISTICS

Perpetrator Information:

Stated name: _____

Affiliation: _____

Phone number: _____

Location/address: _____

Condition of paper/envelop:

Marked personal Marked confidential Properly addressed

Neatly typed or written Clean Corrected or marked-up

Crumpled or wadded up Soiled/stained Torn/tattered

Other: _____

How was the note prepared?

Handwritten in print Handwritten in script Computer typed

Machine typed Spliced (e.g., from other typed material)

Other: _____

If handwritten, does writing look familiar? Yes No

Language:

Clear English Poor English

Another language: _____

Mixed languages: _____

Writing Style

Educated Proper grammar Logical

Uneducated Poor grammar/spelling Incoherent

Use of slang Obscene

Other: _____

Writing Tone

Clear Direct Sincere

Condescending Accusatory Angry

Agitated Nervous Irrational

Other: _____

SIGNOFF

Name of individual who received the threat:

Print name _____

Signature _____ Date/Time: _____

Name of person completing form (if different from written threat recipient):

Print name _____

Signature _____ Date/Time: _____

Source: EPA Response Protocol Toolbox Module 2, Section 8.6 - Interim Final December 2003

IT Incident Response and Reporting Checklist

Date _____ Time _____

Status:

- Site Under Attack
- Past Incident
- Repeated Incidents
- Unresolved

Contact Information:

Name _____
 Title _____
 Utility _____
 Direct-dial phone _____
 E-mail _____
 Location / Site involved _____
 Street Address _____
 City _____
 State/ZIP _____

1. What is the nature of the emergency? (Check all that apply)
 - Denial of Service attack
 - Unauthorized electronic monitoring
 - Network intrusion
 - Insider attack
 - Probe/scan
 - Malicious code (virus, Trojan horse, worm)
 - Website defacement
 - Other (explain)
2. Is there just one, or more than one, incident involved simultaneously?
3. Is this a single or multi-site incident?
4. What is the extent of penetration / infection?
5. Estimate the duration of attack
6. What is the entry point of the incident (network, the phone line, etc)?
7. What resources will be required to deal with this incident? (A Computer Emergency Response Team with a forensic expert might be needed immediately to analyze a major incident versus simply disconnecting the compromised equipment from the Internet for later analysis)
8. What is the source of the attack?
9. What is the target of the attack?
10. Impact of attack
11. Has there been a loss or compromise of business data?
12. What type of data has already been compromised or is at risk?
13. How critical is this data?

14. Affect on customers (Customers might be sensitive, based on the intensity level of the intellectual property loss. It could be a violation of privacy legislation versus a serious theft of software property, critically affecting a customer's enterprise-level business)

15. Estimate system downtime

16. Document damage to systems

17. Estimate financial loss

18. Has there been damage to the integrity or delivery of water or services?

19. Describe

20. Other utility systems affected

21. Severity of attack (include financial loss)

Low Medium High

22. Did the attacker gain root, administrative or system access?

23. How was the incident detected?

- Intrusion detection system or audit logs
- External complaint
- User report
- Other

24. What are the known symptoms?

25. What utility areas are affected?

26. What systems are affected?

Gather as much information as possible about the systems, including suspected systems. For example:

- Operating system
- Platform
- Applications
- IP addresses
- Associated or suspected user IDs
- Most recent changes applied
- Other related items

27. Are the backups of the perceived affected systems available (provide all of the information regarding online, onsite, or offsite backups)?

See www.cert.org/tech_tips/intruder_detection_checklist.html for more information on detecting an intruder.

Maintaining Crime Scene Integrity*

Security breaches and suspicious activity need to be evaluated to determine if the actions are a result of “normal” activity, such as a construction crew working in the area, or the result of activity that could result in an intentional threat to the safety or security of the facility and its operations.

- As soon as you recognize that the threat is/was intentional and particularly if the actions of the threatening individuals are suspected to have been successful, you must notify facility management (Security Director, John Alves/[General manager]).
- The ([SD]/[GM]) should immediately notify the local law enforcement agency responsible for criminal investigation at the facility as soon as they have verified a credible threat.
- **No personnel** from City of Greenfield facility should enter the area where any possible criminal activity might have occurred so as not to disturb the area. All signs of inappropriate entrance to the facility and any physical activity of the suspects must be available for evaluation by law enforcement without any disturbance.
- **City of Greenfield facility staff** and/or **law enforcement** may collect water samples prior to the collection of physical evidence.
- **City of Greenfield facility staff** should collect samples outside of the boundaries of the suspected crime scene, if possible, to avoid concerns about the integrity of the crime scene.
- The **City of Greenfield facility [GM]** should pre-designate a qualified laboratory that can assist in analysis, if the sample is suspected to contain water that has been intentionally contaminated, to insure chain of evidence custody. Law enforcement may require the collection of an additional sample set to be analyzed by their designated lab.
- **City of Greenfield facility staff** should be aware of possible physical evidence of contamination that might include discarded PPE, equipment (such as pumps and hoses), or containers with residual material. Special care should be taken by facility personnel to avoid moving or disturbing any potential physical evidence.
- **City of Greenfield facility staff** should notify [SD]/[GM] of any obvious physical evidence of contamination.
- **City of Greenfield facility staff** should not handle any physical evidence except at the direction of the appropriate law enforcement agency.
- Any photographs or videos taken by **City of Greenfield facility staff** should be reported to law enforcement for proper handling to ensure integrity of the evidence.

The **City of Greenfield [SD]/[GM]** if appropriate, should clearly designate the area of suspected criminal activity to assure that facility personnel do not inadvertently enter the area and disturb evidence.

The **City of Greenfield [SD]/[GM]** can instruct security personnel to stand by and/or lock doors/gates, and/or string tape or rope to restrict entrance, as appropriate.

The **[SD]/[GM]** should balance the needs of both the public health concerns and the concerns of possible criminal activity in their decisions to protect the crime scene.

** Adapted from EPA Response Protocol Toolbox: Planning for and Responding to Drinking Water Contamination Threats and Incidents Module 3: Site Characterization and Sampling Guide Section 3.6.*

Phone Threat Report Form

INSTRUCTIONS

This form is intended to be used by City of Greenfield Staff that regularly answer phone calls from the public (e.g., call center operators). The purpose of this form is to help these staff capture as much information from a threatening phone call while the caller is on the line. It is important that the operator keep the caller on the line as long as possible in order to collect additional information. Since this form will be used during the call, it is important that operators become familiar with the content of the form. The sections of the form are organized with the information that should be collected during the call at the front of the form (i.e., Basic Call Information and Details of Threat) and information that can be completed immediately following the call at the end of the form (i.e., the description of the caller). The information collected on this form will be critical to the threat evaluation process.

Remember, tampering with a drinking water system is a crime under the SDWA Amendments

THREAT NOTIFICATION

Name of person receiving the call: _____

Date phone call received: _____ Time phone call received: _____

Time phone call ended: _____ Duration of phone call: _____

Originating number: _____ Originating name: _____

*If the number/name is not displayed on the caller ID, press *57 (or call trace) at the end of the call and inform law enforcement that the phone company may have trace information.*

Is the connection clear? Yes No

Could call be from a wireless phone? Yes No

DETAILS OF THREAT

Has the water already been contaminated? Yes No

Date and time of contaminant introduction known? Yes No

Date and time if known: _____

Location of contaminant introduction known? Yes No

Site Name: _____

Type of facility

- | | | |
|--|--|---|
| <input type="checkbox"/> Source water | <input type="checkbox"/> Treatment plant | <input type="checkbox"/> Pump station |
| <input type="checkbox"/> Ground storage tank | <input type="checkbox"/> Elevated storage tank | <input type="checkbox"/> Finished water reservoir |
| <input type="checkbox"/> Distribution main | <input type="checkbox"/> Hydrant | <input type="checkbox"/> Service connection |
| <input type="checkbox"/> Other _____ | | |

Address: _____

Additional Site Information: _____

Name or type of contaminant known? Yes No

Type of contaminant

- | | | |
|-----------------------------------|-------------------------------------|---------------------------------------|
| <input type="checkbox"/> Chemical | <input type="checkbox"/> Biological | <input type="checkbox"/> Radiological |
|-----------------------------------|-------------------------------------|---------------------------------------|

Specific contaminant name/description: _____

Mode of contaminant introduction known? Yes No

Method of addition: Single dose Over time Other _____

Amount of material: _____

Additional Information: _____

Motive for contamination known? Yes No

- | | | |
|--|--|---|
| <input type="checkbox"/> Retaliation/revenge | <input type="checkbox"/> Political cause | <input type="checkbox"/> Religious doctrine |
| <input type="checkbox"/> Other _____ | | |

Describe motivation: _____

CALLER INFORMATION

Basic Information:

Stated name: _____
 Affiliation: _____
 Phone number: _____
 Location/address: _____

Caller's Voice:

Did the voice sound disguised or altered? Yes No
 Did the call sound like a recording? Yes No
 Did the voice sound? Male / Female Young / Old
 Did the voice sound familiar? Yes No
 If 'Yes,' who did it sound like? _____
 Did the caller have an accent? Yes No
 If 'Yes,' what nationality? _____

How did the caller sound or speak?

Educated Well spoken Illiterate
 Irrational Obscene Incoherent
 Reading a script Other _____

What was the caller's tone of voice?

Calm Angry Lispering Stuttering/broken
 Excited Nervous Sincere Insincere
 Slow Rapid Normal Slurred
 Soft Loud Nasal Clearing throat
 Laughing Crying Clear Deep breathing
 Deep High Raspy Cracking
 Other _____

Were there background noises coming from the caller's end?

Silence
 Voices describe _____
 Children describe _____
 Animals describe _____
 Factory sounds describe _____
 Office sounds describe _____
 Music describe _____
 Traffic/street sounds describe _____
 Airplanes describe _____
 Trains describe _____
 Ships or large boats describe _____
 Other: _____

SIGNOFF

Name of call recipient:

Print name _____

Signature _____

Date/Time: _____

Name of person completing form (if different from call recipient):

Print name _____

Signature _____

Date/Time: _____

Source: EPA Response Protocol Toolbox Module 2, Section 8.5 - Interim Final December 2003

Public Health Information Report Form Instructions

The purpose of this form is to summarize significant information about a public health episode that could be linked to contaminated water. This form should be completed by the WUERM or an individual designated by incident command. The information compiled in this form is intended to support the threat evaluation process. In the case of a threat warning due to a report from public health, it is likely that the public health agency will assume incident command during the investigation. The drinking water utility will likely play a support role during the investigation, specifically to help determine whether or not water might be the cause.

PUBLIC HEALTH NOTIFICATION

Date and Time of notification: _____

Name of person who received the notification: _____

Contact information for individual providing the notification

Full Name: _____

Title: _____

Organization: _____

Address: _____

Day-time phone: _____

Evening phone: _____

Fax Number: _____

E-mail address: _____

Why is this person contacting the drinking water utility? _____

Has the state or local public health agency been notified? Yes No

If "No," the appropriate public health official should be immediately notified.

DESCRIPTION OF PUBLIC HEALTH EPISODE

Nature of public health episode:

Unusual disease (mild) Unusual disease (severe) Death

Other: _____

Symptoms:

Diarrhea Vomiting/nausea Flu-like symptoms

Fever Headache Breathing difficulty

Other: _____

Describe symptoms: _____

Causative Agent: Known Suspected Unknown

If known or suspected, provide additional detail below

Chemical Biological Radiological

Describe _____

Estimate of time between exposure and onset of symptoms: _____

Exposed Individuals:

Location where exposure is thought to have occurred

- Residence Work School
 Restaurant Shopping mall Social gathering
 Other: _____

Additional notes on location of exposure: _____

Collect addresses for specific locations where exposure is thought to have occurred.

Is the pattern of exposure clustered in a specific area? Yes No

Extent of area

- Single building Complex (several buildings) City block
 Neighborhood Cluster of neighborhoods Large section of city
 Other: _____

Additional notes on extent of area: _____

Do the exposed individuals represent a disproportionate number of:

- Immune compromised Elderly Children
 Infants Pregnant women Women
 Other: _____
 None, no specific groups dominate the makeup of exposed individuals

EVALUATION OF LINK TO WATER

Are the symptoms consistent with typical waterborne diseases, such as gastrointestinal disease, vomiting, or diarrhea? Yes No

Does the area of exposure coincide with a specific area of the system, such as a pressure zone or area feed by a specific plant? Yes No

Were there any consumer complaints within the affected area? Yes No

Were there any unusual water quality data within the affected area? Yes No

Were there any process upsets or operational changes? Yes No

Was there any construction/maintenance within the affected area? Yes No

Were there any security incidents within the affected area? Yes No

SIGNOFF

Name of person completing form:

Print name _____

Signature _____

Date/Time: _____

Source: EPA Response Protocol Toolbox Module 2, Section 8.8 – Interim Final December 2003

Security Incident Report Form

INSTRUCTIONS

The purpose of this form is to help organize information about a security incident, typically a security breach, which may be related to a water contamination threat. The individual who discovered the security incident, such as a security supervisor, the WUERM, or another designated individual may complete this form. This form is intended to summarize information about a security breach that may be relevant to the threat evaluation process. This form should be completed for each location where a security incident was discovered.

DISCOVERY OF SECURITY INCIDENT

Date/Time security incident discovered: _____

Name of person who discovered security incident: _____

Mode of discovery:

- | | | |
|---|---|---|
| <input type="checkbox"/> Alarm (building) | <input type="checkbox"/> Alarm (gate/fence) | <input type="checkbox"/> Alarm (access hatch) |
| <input type="checkbox"/> Video surveillance | <input type="checkbox"/> City of Greenfield Staff discovery | <input type="checkbox"/> Citizen discovery |
| <input type="checkbox"/> Suspect confession | <input type="checkbox"/> Law enforcement discovery | |
| <input type="checkbox"/> Other _____ | | |

Did anyone observe the security incident as it occurred? Yes No

If "Yes", complete the 'Witness Account Report Form'

SITE DESCRIPTION

Site Name: _____

Type of facility

- | | | |
|--|--|---|
| <input type="checkbox"/> Source water | <input type="checkbox"/> Treatment plant | <input type="checkbox"/> Pump station |
| <input type="checkbox"/> Ground storage tank | <input type="checkbox"/> Elevated storage tank | <input type="checkbox"/> Finished water reservoir |
| <input type="checkbox"/> Distribution main | <input type="checkbox"/> Hydrant | <input type="checkbox"/> Service connection |
| <input type="checkbox"/> Other _____ | | |

Address: _____

Additional Site Information: _____

BACKGROUND INFORMATION

Have the following "normal activities" been investigated as potential causes of the security incident?

- | | |
|--|---|
| <input type="checkbox"/> Alarms with known and harmless causes | <input type="checkbox"/> City of Greenfield Staff inspections |
| <input type="checkbox"/> Routine water quality sampling | <input type="checkbox"/> Construction or maintenance |
| <input type="checkbox"/> Contractor activity | <input type="checkbox"/> Other _____ |

Was this site recently visited prior to the security incident? Yes No

If "Yes," provide additional detail below

Date and time of previous visit: _____

Name of individual who visited the site: _____

Additional Information: _____

Has this location been the site of previous security incidents? Yes No

If "Yes," provide additional detail below

Date and time of most recent security incident: _____

Description of incident: _____

What were the results of the threat evaluation for this incident?

- | | | |
|-------------------------------------|-------------------------------------|--------------------------------------|
| <input type="checkbox"/> 'Possible' | <input type="checkbox"/> 'Credible' | <input type="checkbox"/> 'Confirmed' |
|-------------------------------------|-------------------------------------|--------------------------------------|

Have security incidents occurred at other locations recently? Yes No

If "Yes," complete additional 'Security Incident Reports' (Appendix 8.3) for each site

Name of 1st additional site: _____

Name of 2nd additional site: _____

Name of 3rd additional site: _____

SECURITY INCIDENT DETAILS

Was there an alarm(s) associated with the security incident? Yes No

If "Yes," provide additional detail below

Are there sequential alarms (e.g., alarm on a gate and a hatch)? Yes No

Date and time of alarm(s): _____

Describe alarm(s): _____

Is video surveillance available from the site of the security incident? Yes No

If "Yes," provide additional detail below

Date and time of video surveillance: _____

Describe surveillance: _____

Unusual equipment found at the site and time of discovery of the security incident:

- | | |
|--|--|
| <input type="checkbox"/> Discarded PPE (e.g., gloves, masks) | <input type="checkbox"/> Empty containers (e.g., bottles, drums) |
| <input type="checkbox"/> Tools (e.g., wrenches, bolt cutters) | <input type="checkbox"/> Hardware (e.g., valves, pipe) |
| <input type="checkbox"/> Lab equipment (e.g., beakers, tubing) | <input type="checkbox"/> Pumps or hoses |
| <input type="checkbox"/> None | <input type="checkbox"/> Other _____ |

Describe equipment: _____

Unusual vehicles found at the site and time of discovery of the security incident:

- | | | |
|--|---|---------------------------------------|
| <input type="checkbox"/> Car/sedan | <input type="checkbox"/> SUV | <input type="checkbox"/> Pickup truck |
| <input type="checkbox"/> Flatbed truck | <input type="checkbox"/> Construction vehicle | <input type="checkbox"/> None |
| <input type="checkbox"/> Other _____ | | |

Describe vehicles (including make/model/year/color, license plate #, and logos or markings): _____

Signs of tampering at the site and time of discovery of the security incident:

- | | |
|--|--|
| <input type="checkbox"/> Cut locks/fences | <input type="checkbox"/> Open/damaged gates, doors, or windows |
| <input type="checkbox"/> Open/damaged access hatches | <input type="checkbox"/> Missing/damaged equipment |
| <input type="checkbox"/> Facility in disarray | <input type="checkbox"/> None |
| <input type="checkbox"/> Other _____ | |

Are there signs of sequential intrusion (e.g., locks removed from a gate and hatch)? Yes

No

Describe signs of tampering: _____

Signs of hazard at the site and time of discovery of the security incident:

- | | |
|--|---|
| <input type="checkbox"/> Unexplained or unusual odors | <input type="checkbox"/> Unexplained dead animals |
| <input type="checkbox"/> Unexplained dead or stressed vegetation | <input type="checkbox"/> Unexplained liquids |
| <input type="checkbox"/> Unexplained clouds or vapors | <input type="checkbox"/> None |
| <input type="checkbox"/> Other _____ | |

Describe signs of hazard: _____

SIGNOFF

Name of person responsible for documenting the security incident:

Print name _____

Signature _____

Date/Time: _____

Source: EPA Response Protocol Toolbox Module 2, Section 8.3 – Interim Final December 2003

SUSPECT DESCRIPTION FORM

GENERAL APPEARANCE	CLOTHING
Gender: Male Female	Color/Type: Layered Shirts/Blouse
Race: <input type="checkbox"/> White <input type="checkbox"/> Black <input type="checkbox"/> Middle Eastern <input type="checkbox"/> Hispanic <input type="checkbox"/> Asian <input type="checkbox"/> Native American	Cap/Hat Coat/Jacket
Other _____	
Hair: Color Style Texture Sideburns	Tie Pants
Eyes: Color Shape Glasses (type)	Shoes Stockings
Physical Characteristics: Age Height Weight Build	Gloves Jewelry
Distinguishing Marks (describe): Scars Tattoos Gang Insignia	Bag/Backpack Purse/Briefcase
Other: Left Handed / Right Handed	

SUSPECT Demeanor

- Apologetic
- Calm
- Belligerent
- Angry
- Threatening
- Nervous
- Confused

Distinguishing Traits

- Speech
- Accent
- Gait / Limp

Facial Characteristics

- Skin:**
 Color
 Texture

Describe shape of:

- Mouth
- Lips
- Ears
- Cheeks
(full or sunken)
- Nose
- Neck
- Eyes
- Eyebrows

Presence of:

- Adam's Apple
- Chin clefts
- Wrinkles

Hair:

- Mustache
- Beard
- Other

Describe any:

- Facial piercing
- Ear piercing

WEAPON (describe if any)

- Handgun
- Long gun
- Knife

Direction of Escape

What did the suspect say?

VEHICLE

- Color
- Make
- Model
- Body Style
- Damage / Rust
- Antenna
- Bumper Sticker
- Wheel Covers

License Number _____

BOMB THREAT CHECKLIST

Be Calm and Courteous

Give a co-worker a signal to "listen in"

Date:

Time call started:

Time call ended:

Check call display for phone number (if available)

EXACT WORDING OF BOMB THREAT:

What can you tell me?

When is the bomb going to explode?

What kind of bomb is it?

Where is the bomb right now?

What does the bomb look like?

What will cause the bomb to explode?

Did you place the bomb?

Why?

What is your name?

REMARKS:

CALLER'S VOICE

- Male
- Female
- Old (Age?) _____
- Young (Age?) _____
- Calm
- Excited
- Soft
- Loud
- Angry
- Cracking Voice
- Laughter
- Crying
- Normal
- Disguised
- High pitched
- Deep

- Nasal
 Slurred

 Distinct
 Ragged

 Rapid
 Slow

 Raspy
 Stutter

 Lisp
 Heavy Breather

 Clearing Throat
 Intoxicated

 Pleasant
 Whisper

 Familiar (who?) _____
 Accent (type?) _____

FAMILIARITY WITH FACILITY

- Much
 Some
 None

BACKGROUND SOUNDS

- Street
 Party Sounds

 Office Noises
 Train

 Voices
 Airplane

 PA System
 Animals

 Local Music
 Static on line

 Long Distance
 Motors

 Bells
 Whistles

 Factory Machinery
 Crockery

 Household sounds
 Bedlam

 ___ Chanting
 ___ Other

Inform the caller that the building is occupied and the detonation of a bomb could result in death or serious injury to many innocent people.

BOMB THREAT LANGUAGE

- Well Spoken
- Incoherent

- Foul
- Irrational

- Taped
- Deliberate

- Abusive
- Righteous

- Message read by threat maker

Threat Evaluation Worksheet

INSTRUCTIONS

The purpose of this worksheet is to help organize information about a contamination threat warning that would be used during the Threat Evaluation Process. The individual responsible for conducting the Threat Evaluation (e.g., the WUERM) should complete this worksheet. The worksheet is generic to accommodate information from different types of threat warnings; thus, there will likely be information that is unavailable or not immediately available. Other forms in the Appendices are provided to augment the information in this worksheet.

THREAT WARNING INFORMATION

Date/Time threat warning discovered: _____

Name of person who discovered threat warning: _____

Type of threat warning:

- | | | |
|--|--|---|
| <input type="checkbox"/> Security breach | <input type="checkbox"/> Witness account | <input type="checkbox"/> Phone threat |
| <input type="checkbox"/> Written threat | <input type="checkbox"/> Law enforcement | <input type="checkbox"/> Unusual water quality |
| <input type="checkbox"/> News media | <input type="checkbox"/> Consumer complaints | <input type="checkbox"/> Public health notification |
| <input type="checkbox"/> Other _____ | | |

Identity of the contaminant: Known Suspected Unknown

If known or suspected, provide additional detail below

- Chemical Biological Radiological

Describe _____

Time of contamination: Known Estimated Unknown

If known or estimated, provide additional detail below

Date and time of contamination: _____

Additional Information: _____

Mode of contamination: Known Suspected Unknown

If known or suspected, provide additional detail below

Method of addition: Single dose Over time Other _____

Amount of material: _____

Additional Information: _____

Site of contamination: Known Suspected Unknown

If known or suspected, provide additional detail below

Number of sites: _____

Provide the following information for each site.

Site #1

Site Name: _____

Type of facility

- | | | |
|--|--|---|
| <input type="checkbox"/> Source water | <input type="checkbox"/> Treatment plant | <input type="checkbox"/> Pump station |
| <input type="checkbox"/> Ground storage tank | <input type="checkbox"/> Elevated storage tank | <input type="checkbox"/> Finished water reservoir |
| <input type="checkbox"/> Distribution main | <input type="checkbox"/> Hydrant | <input type="checkbox"/> Service connection |
| <input type="checkbox"/> Other _____ | | |

Address: _____

Additional Site Information: _____

Site #2

Site Name: _____

Type of facility

- | | | |
|--|--|---|
| <input type="checkbox"/> Source water | <input type="checkbox"/> Treatment plant | <input type="checkbox"/> Pump station |
| <input type="checkbox"/> Ground storage tank | <input type="checkbox"/> Elevated storage tank | <input type="checkbox"/> Finished water reservoir |
| <input type="checkbox"/> Distribution main | <input type="checkbox"/> Hydrant | <input type="checkbox"/> Service connection |
| <input type="checkbox"/> Other _____ | | |

Address: _____

Additional Site Information: _____

Site #3

Site Name: _____

Type of facility

- | | | |
|--|--|---|
| <input type="checkbox"/> Source water | <input type="checkbox"/> Treatment plant | <input type="checkbox"/> Pump station |
| <input type="checkbox"/> Ground storage tank | <input type="checkbox"/> Elevated storage tank | <input type="checkbox"/> Finished water reservoir |
| <input type="checkbox"/> Distribution main | <input type="checkbox"/> Hydrant | <input type="checkbox"/> Service connection |
| <input type="checkbox"/> Other _____ | | |

Address: _____

Additional Site Information: _____

ADDITIONAL INFORMATION

Has there been a breach of security at the suspected site? Yes No

If "Yes", review the completed 'Security Incident Report'

Are there any witness accounts of the suspected incident? Yes No

If "Yes", review the completed 'Witness Account Report'

Was the threat made verbally over the phone? Yes No

If "Yes", review the completed 'Phone Threat Report'

Was a written threat received? Yes No

If "Yes", review the completed 'Written Threat Report'

Are there unusual water quality data or consumer complaints? Yes No

If "Yes", review the completed 'Water Quality/Consumer Complaint Report'

Are there unusual symptoms or disease in the population? Yes No

If "Yes", review the completed 'Public Health Report'

Is a 'Site Characterization Report' available? Yes No

If "Yes", review the completed 'Site Characterization Report'

Are results of sample analysis available? Yes No

If "Yes", review the analytical results report, including appropriate QA/QC data

Is a 'Contaminant Identification Report' available? Yes No

If "Yes", review the completed 'Sample Analysis Report'

Is there relevant information available from external sources? Yes No

Check all that apply

- | | | |
|--|---|--|
| <input type="checkbox"/> Local law enforcement | <input type="checkbox"/> FBI | <input type="checkbox"/> DW primacy agency |
| <input type="checkbox"/> Public health agency | <input type="checkbox"/> Hospitals / 911 call centers | <input type="checkbox"/> US EPA / Water ISAC |
| <input type="checkbox"/> Media reports | <input type="checkbox"/> Homeland security alerts | <input type="checkbox"/> Neighboring utilities |
| <input type="checkbox"/> Other _____ | | |

Point of Contact: _____

Summary of key information from external sources (provide detail in attachments as necessary):

THREAT EVALUATION

Has normal activity been investigated as the cause of the threat warning? Yes No

Normal activities to consider

- | | |
|--|---|
| <input type="checkbox"/> City of Greenfield Staff inspections sampling | <input type="checkbox"/> Routine water quality |
| <input type="checkbox"/> Construction or maintenance | <input type="checkbox"/> Contractor activity |
| <input type="checkbox"/> Operational changes | <input type="checkbox"/> Water quality changes with a known cause |
| <input type="checkbox"/> Other _____ | |

Is the threat 'possible'? Yes No

Summarize the basis for this determination: _____

Response to a 'possible' threat:

- | | | |
|--|--|--|
| <input type="checkbox"/> None | <input type="checkbox"/> Site characterization | <input type="checkbox"/> Isolation/containment |
| <input type="checkbox"/> Increased monitoring/security | <input type="checkbox"/> Other _____ | |

Is the threat 'credible'? Yes No

Summarize the basis for this determination: _____

Response to a 'credible' threat:

- Sample analysis Site characterization Isolation/containment
 Partial EOC activation Public notification Provide alternate water supply
 Other _____

Has a contamination incident been confirmed? Yes No

Summarize the basis for this determination: _____

Response to a confirmed incident:

- Sample analysis Site characterization Isolation/containment
 Full EOC activation Public notification Provide alternate water supply
 Initiate remediation and recovery
 Other _____

How do other organizations characterize the threat?

Organization	Evaluation	Comment
<input type="checkbox"/> Local Law Enforcement	<input type="checkbox"/> Possible <input type="checkbox"/> Credible <input type="checkbox"/> Confirmed	
<input type="checkbox"/> FBI	<input type="checkbox"/> Possible <input type="checkbox"/> Credible <input type="checkbox"/> Confirmed	
<input type="checkbox"/> Public Health Agency	<input type="checkbox"/> Possible <input type="checkbox"/> Credible <input type="checkbox"/> Confirmed	
<input type="checkbox"/> Drinking Water Primacy Agency	<input type="checkbox"/> Possible <input type="checkbox"/> Credible <input type="checkbox"/> Confirmed	
<input type="checkbox"/> Other	<input type="checkbox"/> Possible <input type="checkbox"/> Credible <input type="checkbox"/> Confirmed	
<input type="checkbox"/> Other	<input type="checkbox"/> Possible <input type="checkbox"/> Credible <input type="checkbox"/> Confirmed	

SIGNOFF

Name of person responsible for threat evaluation:

Print name _____

Signature _____

Date/Time: _____

Source: EPA Response Protocol Toolbox Module 2, Section 8.2 – Interim Final December 2003

Water Quality/Consumer Complaint Report Form

INSTRUCTIONS - This form is provided to guide the individual responsible for evaluating unusual water quality data or consumer complaints. It is designed to prompt the analyst to consider various factors or information when evaluating the unusual data. The actual data used in this analysis should be compiled separately and appended to this form. The form can be used to support the threat evaluation due to a threat warning from unusual water quality or consumer complaints, or another type of threat warning in which water quality data or consumer complaints are used to support the evaluation. Note that in this form, water quality refers to both specific water quality parameters and the general aesthetic characteristics of the water that might result in consumer complaints.

Threat warning is based on: Water quality Consumer complaints Other

What is the water quality parameter or complaint under consideration?

Are unusual consumer complaints corroborated by unusual water quality data?

Is the unusual water quality indicative of a particular contaminant of concern? For example, is the color, odor, or taste associated with a particular contaminant?

Are consumers in the affected area experiencing any unusual health symptoms?

What is 'typical' for consumer complaints for the current season and water quality?

Number of complaints.

Nature of complaints.

Clustering of complaints

What is considered to be 'normal' water quality (i.e., what is the baseline water quality data or level of consumer complaints)?

What is reliability of the method or instrumentation used for the water quality analysis?

Are standards and reagents OK?

Is the method/instrument functioning properly?

Based on recent data, does the unusual water quality appear to be part of a gradual trend (i.e., occurring over several days or longer)?

Are the unusual water quality observations sporadic over a wide area, or are they clustered in a particular area?

What is the extent of the area? Pressure zone. Neighborhood. City block. Street. Building.

If the unusual condition isolated to a specific area:

Is this area being supplied by a particular plant or source water?

Have there been any operational changes at the plant or in the affected area of the system?

Has there been any flushing or distribution system maintenance in the affected area?

Has there been any repair or construction in the area that could impact water quality?

SIGNOFF

Name of person completing form:

Print name _____

Signature _____

Date/Time: _____

Source: EPA Response Protocol Toolbox Module 2, Section 8.7 – Interim Final December 2003

Witness Account Report Form

INSTRUCTIONS

The purpose of this form is to document the observations of a witness to activities that might be considered an incident warning. The individual interviewing the witness, or potentially the witness, should complete this form. This may be the WUERM or an individual designated by incident command to perform the interview. If law enforcement is conducting the interview (which may often be the case), then this form may serve as a prompt for "utility relevant information" that should be pursued during the interview. This form is intended to consolidate the details of the witness account that may be relevant to the threat evaluation process. This form should be completed for each witness that is interviewed.

BASIC INFORMATION

Date/Time of interview: _____

Name of person interviewing the witness: _____

Witness contact information

Full Name: _____

Address: _____

Day-time phone: _____

Evening phone: _____

E-mail address: _____

Reason the witness was in the vicinity of the suspicious activity: _____

WITNESS ACCOUNT

Date/Time of activity: _____

Location of activity:

Site Name: _____

Type of facility

- | | | |
|--|--|---|
| <input type="checkbox"/> Source water | <input type="checkbox"/> Treatment plant | <input type="checkbox"/> Pump station |
| <input type="checkbox"/> Ground storage tank | <input type="checkbox"/> Elevated storage tank | <input type="checkbox"/> Finished water reservoir |
| <input type="checkbox"/> Distribution main | <input type="checkbox"/> Hydrant | <input type="checkbox"/> Service connection |
| <input type="checkbox"/> Other _____ | | |

Address: _____

Additional Site Information: _____

Type of activity

- | | | |
|--------------------------------------|------------------------------------|--|
| <input type="checkbox"/> Trespassing | <input type="checkbox"/> Vandalism | <input type="checkbox"/> Breaking and entering |
| <input type="checkbox"/> Theft | <input type="checkbox"/> Tampering | <input type="checkbox"/> Surveillance |
| <input type="checkbox"/> Other _____ | | |

Additional description of the activity _____

Description of suspects

Were suspects present at the site? Yes No

How many suspects were present? _____

Describe each suspect's appearance:

Suspect #	Sex	Race	Hair color	Clothing	Voice
1					
2					
3					
4					
5					
6					

Were any of the suspects wearing uniforms? Yes No

If "Yes," describe the uniform(s): _____

Describe any other unusual characteristics of the suspects: _____

Did any of the suspects notice the witness? Yes No
 If "Yes," how did they respond: _____

Vehicles at the site

Were vehicles present at the site? Yes No
 Did the vehicles appear to belong to the suspects? Yes No
 How many vehicles were present? _____

Describe each vehicle:

Vehicle #	Type	Color	Make	Model	License plate
1					
2					
3					
4					

Where there any logos or distinguishing markings on the vehicles? Yes No
 If "Yes," describe: _____

Provide any additional detail about the vehicles and how they were used (if at all): _____

Equipment at the site

Was any unusual equipment present at the site? Yes No

<input type="checkbox"/> Explosive or incendiary devices	<input type="checkbox"/> Firearms
<input type="checkbox"/> PPE (e.g., gloves, masks)	<input type="checkbox"/> Containers (e.g., bottles, drums)
<input type="checkbox"/> Tools (e.g., wrenches, bolt cutters)	<input type="checkbox"/> Hardware (e.g., valves, pipe, hoses)
<input type="checkbox"/> Lab equipment (e.g., beakers, tubing)	<input type="checkbox"/> Pumps and related equipment
<input type="checkbox"/> Other _____	

Describe the equipment and how it was being used by the suspects (if at all): _____

Unusual conditions at the site

Were there any unusual conditions at the site? Yes No

<input type="checkbox"/> Explosions or fires	<input type="checkbox"/> Fogs or vapors	<input type="checkbox"/> Unusual odors
<input type="checkbox"/> Dead/stressed vegetation	<input type="checkbox"/> Dead animals	<input type="checkbox"/> Unusual noises
<input type="checkbox"/> Other _____		

Describe the site conditions: _____

Additional observations

Describe any additional details from the witness account: _____

SIGNOFF

Name of interviewer:
 Print name _____
 Signature _____ Date/Time: _____

Name of witness:
 Print name _____
 Signature _____ Date/Time: _____

Source: EPA Response Protocol Toolbox Module 2, Section 8.4 – Interim Final December 2003

Damage Assessment Form

INITIAL DAMAGE ASSESSMENT		DATE	PAGE OF
SITE ID	LOCATION (Use map location, address, etc.)		
DESCRIPTION OF DAMAGE			
IMPACT			COST ESTIMATE
SITE ID	LOCATION (Use map location, address, etc.)		
DESCRIPTION OF DAMAGE			
IMPACT			COST ESTIMATE
SITE ID	LOCATION (Use map location, address, etc.)		
DESCRIPTION OF DAMAGE			
IMPACT			COST ESTIMATE
SITE ID	LOCATION (Use map location, address, etc.)		
DESCRIPTION OF DAMAGE			
IMPACT			COST ESTIMATE
NAME OF INSPECTOR	DEPARTMENT	PHONE	

California Department of
Health Services
c/o CH2M Hill
Eva Plajzer, P.E.
402 West Broadway,
Suite 1450
San Diego, CA 92101

EPA Certification of Completion of an Emergency Response Plan

Public Water System ID Number: 2710008
System Name: CITY OF GREENFIELD
City where System is Located: GREENFIELD (MONTEREY COUNTY)
State: CALIFORNIA

Printed Name of Person Authorized
to Sign this Certification on Behalf of System: JOHN ALVES
Title: DEPUTY CITY MANAGER / PUBLIC WORKS DIRECTOR
Address: P.O. BOX 127, 45 EL CAMINO REAL
City: GREENFIELD
State: CALIFORNIA ZIP Code: 93927
Phone: 831-674-2635 FAX: 831-674-3259
Email: j.alves@ci.greenfield.ca.us

I certify to the Administrator of the U.S. Environmental Protection Agency that this community water system has completed an Emergency Response Plan that complies with Section 1433(b) of the Safe Drinking Water Act as amended by the Public Health Security and Bioterrorism Preparedness and Response Act of 2002 (Public Law 107-188, Title IV - Drinking Water Security and Safety).

I further certify that this document was prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information (Safe Drinking Water Act (42 U.S.C. 300f et seq.)).

The emergency response plan that this community water system completed incorporates the results of the vulnerability assessment completed for the system and includes "plans, procedures, and identification of equipment that can be implemented or utilized in the event of a terrorist or other international attack" on this community water system. The emergency response plan also includes "actions, procedures, and identification of equipment which can obviate or significantly lessen the impact of terrorist attacks or other intentional actions on the public health and the safety and supply of drinking water provided to communities and individuals."

This CWS has coordinated, to the extent possible, with existing Local Emergency Planning Committees established under the Emergency Planning and Community Right-to-Know Act (42 U.S.C. 11001 et seq) when preparing this emergency response plan.

Signed: John Alves Date: 12/30/2009

Primary Contact person that EPA can call if there are questions about this Certification:

Name: JOHN ALVES

Address (if different than that of the Authorized Representative): SAME

Phone: 831-674-2635 FAX: 831-674-3259

Email: j.alves@ci.greenfield.ca.us

Alternate Contact Person:

Name: MICHAEL RANKER, P.E. (CITY ENGINEER)

Address (if different than that of the Authorized Representative): 820 PARK ROW, #592
SALINAS, CA 93901-2406

Phone: 831-455-2344 FAX: 831-455-1921

Email: mranker@terraengr.com

A "FILL AND PRINT" VERSION OF THIS FORM IS AVAILABLE ONLINE AT:
<http://www.epa.gov/safewater/security/util-inst-app4.pdf>

Appendix G
ERP Certification Form

File copy

EPA Certification of Completion of an Emergency Response Plan

Public Water System ID Number: 2710008
System Name: CITY OF GREENFIELD
City where System is Located: GREENFIELD (MONTEREY COUNTY)
State: CALIFORNIA

Printed Name of Person Authorized
to Sign this Certification on Behalf of System: JOHN ALVES
Title: DEPUTY CITY MANAGER / PUBLIC WORKS DIRECTOR
Address: P.O. BOX 127, 45 EL CAMINO REAL
City: GREENFIELD
State: CALIFORNIA ZIP Code: 93927
Phone: 831-674-2635 FAX: 831-674-3259
Email: jalvas@ci.greenfield.ca.us

I certify to the Administrator of the U.S. Environmental Protection Agency that this community water system has completed an Emergency Response Plan that complies with Section 1433(b) of the Safe Drinking Water Act as amended by the Public Health Security and Bioterrorism Preparedness and Response Act of 2002 (Public Law 107-188, Title IV - Drinking Water Security and Safety).

I further certify that this document was prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information (Safe Drinking Water Act (42 U.S.C. 300f et seq.)).

The emergency response plan that this community water system completed incorporates the results of the vulnerability assessment completed for the system and includes "plans, procedures, and identification of equipment that can be implemented or utilized in the event of a terrorist or other international attack" on this community water system. The emergency response plan also includes "actions, procedures, and identification of equipment which can obviate or significantly lessen the impact of terrorist attacks or other intentional actions on the public health and the safety and supply of drinking water provided to communities and individuals."

This CWS has coordinated, to the extent possible, with existing Local Emergency Planning Committees established under the Emergency Planning and Community Right-to-Know Act (42 U.S.C. 11001 et seq) when preparing this emergency response plan.

Signed: John Alves Date: 12/30/2009

Primary Contact person that EPA can call if there are questions about this Certification:

Name: JOHN ALVES

Address (if different than that of the Authorized Representative): SAME

Phone: 831-674-2635 FAX: 831-674-3259

Email: j Alves@ci.greenfield.ca.us

Alternate Contact Person:

Name: MICHAEL RANKER, P.E. (CITY ENGINEER)

Address (if different than that of the Authorized Representative): 820 PARK ROW, #59Z
SALINAS, CA 93901-2406

Phone: 831-455-2344 FAX: 831-455-1921

Email: mranker@terraenr.com

A "FILL AND PRINT" VERSION OF THIS FORM IS AVAILABLE ONLINE AT:
<http://www.epa.gov/safewater/securit/util-inst-app4.pdf>

EPA Certification of Completion of an Emergency Response Plan

Public Water System ID Number: 2710008

System Name: CITY OF GREENFIELD

City where System is Located: GREENFIELD (MONTEREY COUNTY)

State: CALIFORNIA

Printed Name of Person Authorized
to Sign this Certification on Behalf of System: JOHN ALVES

Title: DEPUTY CITY MANAGER / PUBLIC WORKS DIRECTOR

Address: P.O. BOX 127, 45 EL CAMINO REAL

City: GREENFIELD

State: CALIFORNIA ZIP Code: 93927

Phone: 831-674-2635 FAX: 831-674-3259

Email: j.alves@ci.greenfield.ca.us

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Signed: John Alves

Date: 12/30/2009

Michael J. Ranker
820 Park Row
Salinas, CA 93901-2406



California Dept. of Health Services
C/O Eva Plajzer, P.E., *Water Resources*
CH2M Hill - Emerald Plaza
402 West Broadway, Suite 1450
San Diego, Ca 92101

Primary Contact person that EPA can call if there are questions about this Certification:

Name: JOHN ALVES

Address (if different than that of the Authorized Representative): SAME

Phone: 831-674-2635 FAX: 831-674-3259

Email: j.alves@ci.greenfield.ca.us

Alternate Contact Person:

Name: MICHAEL RANKER, P.E. (CITY ENGINEER)

Address (if different than that of the Authorized Representative): 820 PARK ROW, #592
SALINAS, CA 93901-2406

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