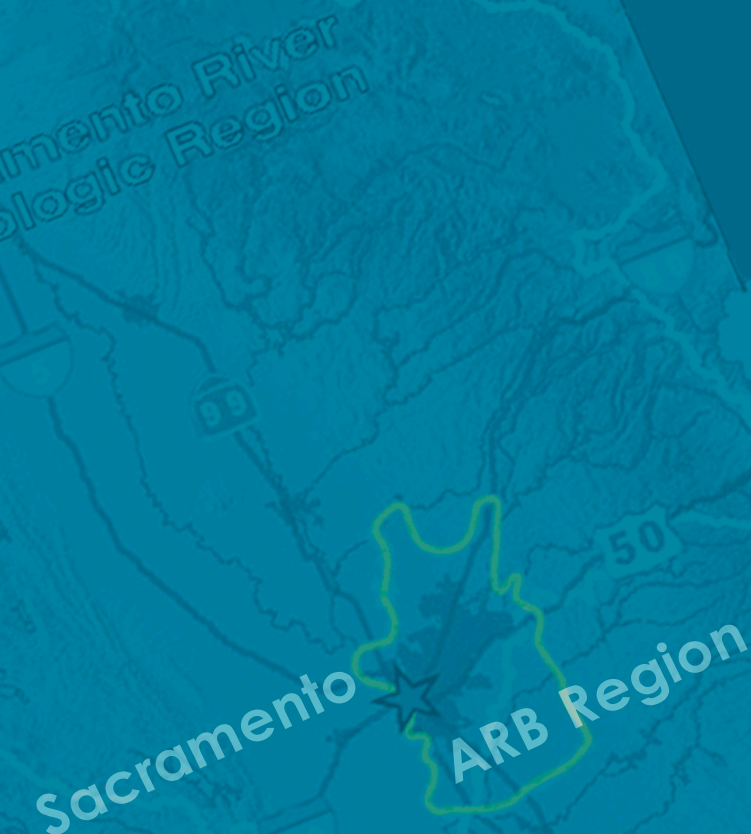
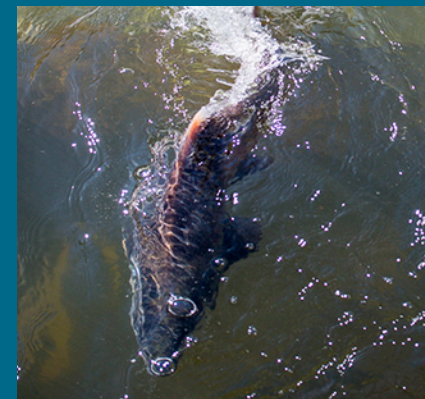


Appendix C Climate Change Vulnerabilities and Water and Land Use Agency Adaptation and Mitigation Actions



Appendix C. CLIMATE CHANGE VULNERABILITIES AND WATER AND LAND USE AGENCY ADAPTATION AND MITIGATION ACTIONS

Appendix C includes a checklist of climate change vulnerabilities and mitigation measures identified in the American River Basin (ARB) Region. The mitigation measures were identified through surveys conducted in 2013 and 2018 that involved water supply and sanitation agencies within the Region, as well as measures included in local climate action and sustainability plans. This appendix supports **Sections 2.10 and 5** of the main Integrated Regional Water Management Plan (IRWMP) document.

C.1. Vulnerability Checklist

The *Climate Change Handbook for Regional Water Planning* (EPA/DWR 2011) provides a useful checklist for qualitatively determining areas of potential vulnerability within the Region. Indicators of potential vulnerability include currently observable climate impacts, presence of climate sensitive features, and adaptive capacity of regional resources.

Prioritization of vulnerabilities was accomplished qualitatively, with issues assigned a low, medium, or high priority. Prioritization was conducted based on three factors:

1. Information on climate change mitigation and adaptation actions provided by stakeholders during development of the 2013 and 2018 ARB IRWMP Updates.
2. The assessed likelihood of vulnerabilities based on checklist responses.
3. ARB regional values, as represented by the vision and goals, principles, and objectives (see **Section 5**).

The results of applying the vulnerability checklist to the Region and prioritizing these identified vulnerabilities are presented in **Table C-1**.

This page left blank intentionally.

Table C-1. Climate Change Vulnerability Checklist and Prioritization

Question	Response	Priority	Justification	Vulnerability
I. Water Demand				
Are there major industries that require cooling/process water in your planning region?	Yes	Low	The largest water-intensive industry in the Region is agriculture.	Increased potential for summer water shortage.
Does water use vary by more than 50% seasonally in parts of your region?	Yes	High	Summer months are as much as 50% higher than the average month and winter months are as much as 50% lower than the average month. Warming temperatures and increased extreme events will likely exacerbate summer demand.	Increased potential for summer water shortage.
Are crops grown in your region climate sensitive? Would shifts in daily heat patterns, such as how long heat lingers before nighttime cooling, be prohibitive for some crops?	Yes	High	A variety of crop types are grown in the Region, including row crops, tree crops, and irrigated grains. Agricultural production in Sacramento County has a value of approximately \$300 million dollars (Sacramento County Department of Agriculture 2002). Many of these crops are sensitive to climate change (Sacramento County Climate Action Plan 2011).	Increased potential for summer water shortage.
Do groundwater supplies in your region lack resiliency after drought events?	No	Low	Groundwater supplies in the Region have proved resilient after past drought events.	N/A
Are water use curtailment measures effective in your region?	Yes	Low	Water conservation BMPs are used effectively throughout the Region, as detailed in various UWMPs.	Potential for demand hardening and limited opportunities for further conservation.
Are some in-stream flow requirements in your region either currently insufficient to support aquatic life, or occasionally unmet?	No	Low	Minimum in-stream flow requirements are generally met in both the American River and the Sacramento River. However, climate change is expected to place additional stress on summer low flows.	Reduced summer low flows.
II. Water Supply				
Does a portion of the water supply in your region come from snowmelt?	Yes	Medium	American River runoff from April through July is dominated by snowmelt. This provides water supply throughout the dry summer and fall.	Reduced water supply reliability. Constraints on conjunctive use and water transfers.
Does part of your region rely on water diverted from the Delta, imported from the Colorado River, or imported from other climate-sensitive systems outside your region?	No	N/A	Currently, there is no use of imported water in the Region, and use of this supply is not anticipated in the future.	N/A
Does part of your region rely on coastal aquifers? Has salt intrusion been a problem in the past?	No	N/A	There are no coastal aquifers within the Region.	N/A
Would your region have difficulty in storing carryover supply surpluses from year to year?	Yes	Medium	Current regional reservoir operating conditions limit storage opportunities during winter runoff season; increased winter runoff would not necessarily translate into increased storage of water leading into the spring season. In the Region, the ratio of storage to annual runoff is approximately 0.64, indicating that this is likely to be the case (Roos 2005). In addition, less spring snowmelt could make it more difficult to refill winter reservoir flood control space during late spring and early summer of many years, which could potentially reduce the amount of surface water available during the dry season (Roos 2005). Conversely, storage capture of snowmelt runoff has traditionally occurred during the late spring and early summer seasons. Reductions in runoff during these seasons likely would translate into reductions in storage capture and, likewise, reductions in water supply for warm season delivery.	Reduced water supply reliability. Constraints on conjunctive use and water transfers.
Has your region faced a drought in the past during which it failed to meet local water demands?	No	High	The Region has not failed to meet local water demands during drought years. However, the potential effects of climate change make this a possibility. The Region is projected to have more frequent, longer, and more-extreme heat waves and longer periods of drought (Sacramento County 2011).	Reduced water supply reliability. Constraints on conjunctive use and water transfers.
Does your region have invasive species management issues at your facilities, along conveyance structures, or in habitat areas?	Yes	Medium	Invasive species, including various nonnative fish and plant species, are an ongoing issue within the Region (Appendix B).	Invasive species impacts on infrastructure.

This page left blank intentionally.

Table C-1. Climate Change Vulnerability Checklist and Prioritization (contd.)

Question	Response	Priority	Justification	Vulnerability
III. Water Quality				
Are increased wildfires a threat in your region? If so, does your region include reservoirs with fire-susceptible vegetation nearby that could pose a water quality concern from increased erosion?	No	Low	Increased frequency of wildfires is a relatively low threat in this Region (CEC 2011). However, Folsom reservoir could be vulnerable to water quality impairments resulting from increased erosion.	Reduced beneficial use of water from degraded water quality.
Does part of your region rely on surface water bodies with current or recurrent water quality issues related to eutrophication, such as low dissolved oxygen or algal blooms? Are there other water quality constituents potentially exacerbated by climate change?	Yes	High	Surface water bodies in the Region do not have current water quality issues related to eutrophication. However, surface water temperature in the Region is highly likely to rise and adversely impact beneficial uses in the Region. Additionally, several water bodies have beneficial uses impaired by invasive species, which are likely to be exacerbated by climate change (State Water Resources Control Board 2012).	
Are seasonal low flows decreasing for some waterbodies in your region? If so, are the reduced low flows limiting the waterbodies' assimilative capacity?	No	Medium	Seasonal low-flows are not currently decreasing; however this is a potential impact from climate change.	
Are there beneficial uses designated for some water bodies in your region that cannot always be met due to water quality issues?	Yes	Low	Beneficial uses on surface water bodies throughout the Region are listed as impaired on the CWA 303 (d) list for various water quality constituents, including mercury and pesticides. Climate change may increase impairments of beneficial uses in the Region's surface water bodies.	
Does part of your region currently observe water quality shifts during rain events that impact treatment facility operation?	Yes	Medium	Disinfectant byproduct precursors tend to spike during storm events (DWR 2001). Storm events currently contribute to high turbidity in area rivers and streams (Sacramento County, et. al. 2010).	
IV. Sea-Level Rise				
Has coastal erosion already been observed in your region?	No	N/A	The Region does not contain any coastal areas.	N/A
Are there coastal structures, such as levees or breakwaters, in your region?	Yes	High	There are tidally influenced levees on the Sacramento River on the western boundary of the Region.	Increased tidal flood risk.
Is there significant coastal infrastructure, (such as residences, recreation, water and wastewater treatment, tourism, and transportation) at less than 6 feet above mean sea level in your region?	Yes	Medium	There is infrastructure adjacent to the lower Sacramento River that is at or near 6 feet above mean sea level, including transportation (Interstate 5), residences, and recreational facilities.	
Are there climate-sensitive low-lying coastal habitats in your region?	No	N/A	There are no coastal habitats within the Region.	N/A
Are there areas in your region that currently flood during extreme high tides or storm surges?	No	Medium	The areas adjacent to the lower Sacramento River do not currently flood during extreme high tides alone, but are threatened when extreme high tides occur in conjunction with extreme storm events.	Increased tidal flood risk.
Is there land subsidence in the coastal areas of your region?	Yes	Low	Land has subsided from 0 to 10 feet below mean sea level in limited areas along the lower Sacramento River in the southwestern portion of the Region (USGS 2000).	
Do tidal gauges along the coastal parts of your region show an increase over the past several decades?	Yes	Low	In recent decades, the mean sea level trend has been an increase of 2.08mm/year at the nearest tidal gage to the Region (Port Chicago, located in the San Francisco Bay) (NOAA 2012).	

This page left blank intentionally.

Table C-1. Climate Change Vulnerability Checklist and Prioritization (contd.)

Question	Response	Priority	Justification	Vulnerability
V. Flooding				
Does critical infrastructure in your region lie within the 200-year floodplain? DWR’s best available floodplain maps are available at: http://gis.bam.water.ca.gov/bam/ .	Yes	High	Major Infrastructure in floodplains includes major Interstate highways and water/wastewater infrastructure (DWR 2012b).	Increase riverine flood risk.
Does part of your region lie within the Sacramento-San Joaquin Drainage District?	Yes	High	The Region lies entirely within the Sacramento-San Joaquin Drainage District.	
Does aging critical flood protection infrastructure exist in your region?	Yes	High	Major metropolitan areas, small communities, and rural areas are protected by aging levees, weirs, bypasses, and other flood management infrastructure. An inventory of the infrastructure deficiencies is detailed in the Flood Control System Status Report (DWR 2011).	Increase riverine flood risk.
Have flood control facilities (such as impoundment structures) been insufficient in the past?	Yes	Medium	Portions of the Region are vulnerable to five flood types: localized flooding, riverine flooding, flash flooding, levee overtopping/failure, and dam failure.	
Are wildfires a concern in parts of your region?	Yes	Low	Wildfires are a low priority concern, and, per Cal-Adapt are not likely to become a substantially higher priority concern in the near future.	
VI. Ecosystem and Habitat Vulnerability				
Does your region include inland or coastal aquatic habitats vulnerable to erosion and sedimentation issues?	Yes	Medium	Wetland and riverine habitats are vulnerable to erosion and sedimentation issues.	Increased adverse impacts to habitats and species.
Does your region include estuarine habitats that rely on seasonal freshwater flow patterns?	Yes	Low	The Delta portion of the Region relies on seasonal freshwater flow patterns.	
Do climate-sensitive fauna or flora populations live in your region?	Yes	High	Climate sensitive populations include salmonid species, migratory bird species, and wetland species (CEC 2008)	
Do endangered or threatened species exist in your region? Are changes in species distribution already being observed in parts of your region?	Yes	High	Yes, a number of state-listed and federally listed threatened and endangered species exist in the Region (Appendix B). Changes in aquatic and terrestrial ecosystems have already been observed (DWR 2009).	
Does the region rely on aquatic or water-dependent habitats for recreation or other economic activities?	Yes	Low	Boating, hunting, fishing, and bird watching are important recreational and economic activities that rely on aquatic or water-dependent habitats in the Region.	
Are there rivers in your region with quantified environmental flow requirements or known water quality/quantity stressors to aquatic life?	Yes	High	The American River and the Lower Sacramento River have quantified environmental flow requirements. The majority of waters in the Region are listed on the CWA 303(d) list for impairments to aquatic habitat beneficial uses.	
Do estuaries, coastal dunes, wetlands, marshes, or exposed beaches exist in your region? If so, are coastal storms possible/frequent in your region?	Yes	Low	The Bay-Delta estuary, marshes, and seasonal and emergent wetland habitats exist in the Region, particularly in the southwestern portion. However, coastal storms are not frequent in the Region.	
Does your region include one or more of the habitats described in the Endangered Species Coalition’s Top 10 habitats vulnerable to climate change (http://www.itsgettinghotoutthere.org/)?	Yes	High	The Region contains portions of two Endangered Species Coalition’s Top 10 vulnerable habitats: the Bay-Delta and the Sierra Nevada.	
Are there areas of fragmented estuarine, aquatic, or wetland wildlife habitat within your region? Are there movement corridors for species to naturally migrate? Are there infrastructure projects planned that might preclude species movement?	Yes	Medium	The combined effect of various stressors has fragmented and/or eliminated extensive areas of wetland and riparian habitat and impeded movement corridors (DWR 2012b).	

This page left blank intentionally.

Table C-1. Climate Change Vulnerability Checklist and Prioritization (contd.)

Question	Response	Priority	Justification	Vulnerability
VI. Hydropower				
Is hydropower a source of electricity in your region?	Yes	Low	Folsom Lake and Camp Far West Reservoir provide hydroelectric power for the Region.	Potential decrease in hydropower potential.
Are energy needs in your region expected to increase in the future? If so, are there future plans for hydropower generation facilities or conditions for hydropower generation in your region?	Yes	Low	Based on data collected by SACOG in 2012, the Region's population is expected to continue to grow significantly between now and 2025. Sacramento County is expected to grow about 37% between 2008 and 2035, Placer County is expected to grow about 49%, and El Dorado County is expected to grow about 24%. As a whole, the three-county Region (excluding the Tahoe basin) is expected to grow about 38%, with the most aggressive growth occurring between 2020 and 2035 (Section 2.5.2).	

Key:
ARB = American River Basin
Bay-Delta = Sacramento-San Joaquin River Delta and San Francisco Bay
BMP = Best Management Practices
CEC = California Energy Commission
CWA = Clean Water Act
Delta = Sacramento-San Joaquin River Delta
DWR = California Department of Water Resources
IRWMP = Integrated Regional Water Management Plan
N/A = not available/ not applicable
NOAA = National Oceanic and Atmospheric Administration
SACOG = Sacramento Area Council of Governments
USGS = U.S. Geological Survey
UWMP = Urban Water Management Plan

This page left blank intentionally.

C.2. ARB Water and Land Use Agency Mitigation and Adaptation Actions

Many counties and cities in the Region have developed climate change mitigation and adaptation plans, as described in **Section 2.10**. While not specific to the water-use, these plans recognize the important role that water management and water system stewardship play in mitigating the impacts of climate change. In addition, several water supply and wastewater treatment agencies have also been engaged in climate change mitigation efforts due to the heavy energy use and greenhouse gas emissions associated with water supply and treatment systems.

Cities, counties, and water management agencies were sent a survey to document the existing and future efforts for inventorying and reducing GHG emissions from water and wastewater operations. Eleven agencies filled out the survey, the results of which are presented in **Table C-2**. In addition, **Table C-3** identifies water management or efficiency measures from local climate action and sustainability plans. This list of mitigation and adaptation actions is not exhaustive, but rather highlights some of the major components of the Region's efforts, in terms of GHG inventories, reduction in energy consumption, renewable energy, carbon offsets, water conservation, and other actions.

This page left blank intentionally.

Table C-2. Survey Responses Regarding Mitigation Actions Within the Region

Agency	GHG Inventory	Reduction in Energy Consumption	Renewable Energy	Carbon Offsets	Other Mitigation-Related Actions
Citrus Heights Water District	N/A	<p>Past Actions:</p> <ul style="list-style-type: none"> Groundwater Production Facilities Operational Changes – The groundwater wells only operate outside of the Peak Time demand to reduce peak electrical load. Variable Frequency Drive motors have been installed on various Groundwater Production Facilities to provide a more efficient motor speed and to reduce the electrical loads. CHWD has been switching all lighting at the facilities to energy-smart lighting to reduce the energy consumption and to promote a safer and more ergonomic workplace. CHWD replaces its fleet vehicles on a 10-year replacement cycle. The new fleet vehicles meet California’s higher emissions standards. In 2018, CHWD completed a Corporation Yard Improvement Project that has reduced the work crew’s daily operational trips, to and from the field, by approximately 30 minutes. This reduces the fuel consumption from idling vehicles and increasing work efficiency. <p>Planned Actions:</p> <ul style="list-style-type: none"> Variable Frequency Drive motors are planned to be installed at various Groundwater Production Facilities to provide for a more efficient pump and motor use and to reduce the overall electrical load. CHWD plans on replacing/remodeling the operations building to a more space and energy efficiency facility in the coming years. The design of this facility is planned for in 2019. 	<p>Past Actions:</p> <ul style="list-style-type: none"> CHWD has studied the feasibility of installing in-conduit hydroelectric generation equipment to provide “Green Energy.” CHWD has collaborated with SMUD on the feasibility of an in-conduit hydroelectric power generation equipment. <p>Planned Actions:</p> <p>CHWD will study the placement and feasibility of an in-conduit hydroelectric power generation equipment within the Distribution system. This study will incorporate system-wide pressure reduction facility placement assessments.</p>	N/A	<p>Planned Actions:</p> <p>In 2018, CHWD is creating a Hazard Mitigation Plan. The purpose of the Hazard Mitigation Plan will be to identify and minimize the potential hazards that CHWD might be faced with, currently or in the future. This plan will include Climate Change and the Energy Reliability.</p>
City of Folsom	N/A	<p>Past Actions:</p> <ul style="list-style-type: none"> Time of day pumping during low demand hours. Installed variable frequency drives for various pumps within the distribution system. Street median and streetscape turf removal projects to replace turf with low water use and drought tolerant materials. Smart irrigation controllers installed on various City facilities to improve water use efficiency. Water flow sensors installed on various City facilities to detect irrigation pipe leaks or breaks. Water-wise house calls to improved water use efficiency at the customer level. The City completed a pilot study with SMUD for the use of hybrid utility trucks. <p>Planned Actions:</p> <p>The City is working with Honeywell to conduct an energy efficiency analysis of water and wastewater operations and will develop potential projects to improve energy efficiency.</p>	N/A	N/A	N/A

This page left blank intentionally.

Table C-2. Survey Responses Regarding Mitigation Actions Within the Region (contd.)

Agency	GHG Inventory	Reduction in Energy Consumption	Renewable Energy	Carbon Offsets	Other Mitigation-Related Actions
City of Lincoln	<ul style="list-style-type: none"> The City does not have a Climate Action Plan but has adopted various Goals and Policies within the 2008 General Plan Update in conjunction with the Placer County Air Pollution Control District and the state. Depending on the specific project, the environmental review may require certain mitigation and/or conditions pertaining to reduction of GHG. 	<p>Past Actions:</p> <ul style="list-style-type: none"> Used PG&E's Peak Day Pricing Program for energy efficiency and cost savings. Purchased and installed LED Streetlights within the City for reduced energy consumption and financial savings. Installed lighting timers at various locations reduce electrical use <p>Planned Actions:</p> <ul style="list-style-type: none"> There are plans to put a new water storage tank in the City which would provide additional energy savings. 	<p>Planned Actions:</p> <ul style="list-style-type: none"> Currently working on installation of Citywide Solar Panels for all City Facilities. Currently working on installation of Solar Panels at the Waste Water Treatment Reclamation Facility. In compliance with California's Organic Recycling Law (AB 1826), the City will be collecting organic waste for use in fuel production in an anaerobic digester. The biogas produced is a source of renewable energy producing electricity in power plants. 	N/A	<p>Past Actions:</p> <ul style="list-style-type: none"> Fleet staff tested an electric vehicle for a two-week period to determine if a "green" vehicle would be a viable option for Public Works staff through GHG reductions and cost savings. Recycled water is being provided to the City's largest industrial consumer (Sierra Pacific Industries) and is connected to a few landscaped medians within the City. Purple pipe has been installed in other various park locations with plans to start pumping recycled water to the city's larger park sites later this year. Installation of a diesel fuel tank at one fire station will reduce trips across town for daily fueling. Estimated annual 1,000 gallon reduction in fuel consumption. City trees, parks, and open spaces serve as carbon sinks by storing GHG emissions. The purchase of new garbage trucks equipped with SCR systems reduce NOx emissions, a contributor to GHG emissions. The wastewater treatment plant and the fleet division use electric golf carts for short trips.
City of Sacramento	<p>Past Actions:</p> <ul style="list-style-type: none"> The Sacramento Climate Action Plan was adopted February 14, 2012. The CAP included GHG reduction targets, strategies, and identified strategies and specific actions which Sacramento can take to adapt to the effects of climate changes in the water resource management. The Sacramento Climate Action Plan was incorporated into the 2035 General Plan and adopted on March 3, 2015. <p>Planned Actions:</p> <ul style="list-style-type: none"> The Climate Action Plan and 2035 General Plan will go through an update soon along with GHG inventory of water resource management. 	<p>Past Actions:</p> <ul style="list-style-type: none"> Variable Frequency Drive replacement projects at Sump stations at 101 and 141. LED Lighting retrofit projects at all Sump Stations. <p>Planned Actions:</p> <ul style="list-style-type: none"> The Climate Action Plan and 2035 General Plan will go through an update soon. LED Lighting upgrades at Sacramento Treatment Plant. Defer pumping at drainage stations to off-peak hours. 	<p>Past Actions:</p> <ul style="list-style-type: none"> Solar PV Installation of 115Kw at Department of Utilities Main Office building located at 1395 35th Ave Solar PV Installation of 1,114Kw at Fairbairn Water Treatment Plant City partnered up with SMUD to participate in SolarShares program. SMUD will operate a 13-megawatt (MW) solar photovoltaic (PV) system installation on the City's behalf. <p>Planned Actions:</p> <ul style="list-style-type: none"> Review use of battery storage systems at Utilities. City is participating in a research project for the Water Research Foundation titled; Battery Storage System Guidance for Water and wastewater Utilities. 	<p>Past Actions:</p> <ul style="list-style-type: none"> City partnered up with SMUD to participate in SolarShares program, which will provide approximately half the electricity needs for 103 of the largest City accounts, offsetting approximately 35% of total municipal electricity use. Utilities' has some of the biggest accounts and will benefit from this program. 	<p>Past Actions:</p> <ul style="list-style-type: none"> In 2017, City of Sacramento adopted 2016 Sacramento County Local Hazard Mitigation Plan (Plan). The last Plan update was adopted by the City Council on June 7, 2012. The purpose of the Plan is to guide hazard mitigation planning to protect people and property from the effects of hazard events. The City of Sacramento acted as a lead agency in preparation of this countywide plan.

This page left blank intentionally.

Table C-2. Survey Responses Regarding Mitigation Actions Within the Region

Agency	GHG Inventory	Reduction in Energy Consumption	Renewable Energy	Carbon Offsets	Other Mitigation-Related Actions
El Dorado Irrigation District	Registered for California Climate Action Registry in 2007. Developed and reported GHG Inventory for a few years but the District discontinued this effort in 2010.	<p>Past Actions:</p> <ul style="list-style-type: none">• Participate in PG&E Demand Response Programs for El Dorado Hills' raw water pump station and El Dorado Hills Wastewater Treatment Plant.• Constructed additional water storage at Oak Ridge Tanks to reduce energy costs (pumping) during peak demands.• Purchased and operate several hybrid vehicles as part of fleet. <p>Planned Actions:</p> <ul style="list-style-type: none">• Continue PG&E Demand Response Programs.• Implement plan to develop gravity water supplies to eliminate additional pumping costs from Folsom Lake as water demands increase.	<p>Past Actions:</p> <ul style="list-style-type: none">• Operate a 20 MW hydroelectric power plant (FERC Project 184)• Installed and operate a 1 MW solar photovoltaic (PV) system at the El Dorado Hills Water Treatment Plant since 2004.• Participated in study to evaluate in-conduit hydroelectric options within the water system. <p>Planned Actions:</p> <ul style="list-style-type: none">• 370 kW in-conduit hydroelectric facility at Reservoir 7 under construction.• Evaluation of expansion of solar PV systems at EDHWWTP and Deer Creek Wastewater Treatment Plant underway• Evaluation of expansion of in-conduit hydroelectric facilities at Jenkinson Lake dam	N/A	N/A

This page left blank intentionally.

Table C-2. Survey Responses Regarding Mitigation Actions Within the Region (contd.)

Agency	GHG Inventory	Reduction in Energy Consumption	Renewable Energy	Carbon Offsets	Other Mitigation-Related Actions
Elk Grove Water District	N/A	<p>Past Actions:</p> <ul style="list-style-type: none">Replaced office lighting in the Administration Building with energy efficient lighting.Replaced a conventional drive with an efficient variable frequency drive on the primary booster pump at the Railroad Water Treatment Plant. This pump supplies treated drinking water to the District's water distribution system.Replaced conventional drives on two (2) 200 hp well pump motors with efficient variable frequency drives.Purchased two (2) hybrid vehicles as part of the District's fleet.The District replaces its work trucks on an ongoing basis every 10 – 12 years. The new trucks meet California's higher emissions and efficiency standards.Installed soft starts to well pump motors at two (2) well sites reducing the electrical consumption during motor starts.Installed motion sensors on light switches in all offices at the water treatment plant. <p>Planned Actions:</p> <ul style="list-style-type: none">Replace a 75 hp vertical turbine pump with an efficient 75 hp variable frequency drive submersible pump.The District replaces its work trucks on an ongoing basis every 10 – 12 years. The new trucks meet California's higher emissions standards.	N/A	N/A	N/A
Golden State Water Company	N/A	<p>Past Actions:</p> <ul style="list-style-type: none">Use high-efficiency motors.Use variable-speed drives.Use motion light switches in offices. <p>Planned Actions:</p> <ul style="list-style-type: none">Install double-paned windows at Rancho Cordova office.	<p>Planned Actions:</p> <ul style="list-style-type: none">Install solar panels at Coloma WTP (CPUC approval required).	N/A	N/A
Placer County	Placer County participated in the Updated GHG inventory in 2015 that included 2005 data as a baseline. However, the Sheridan WWTP was not itemized. Rather, energy use and emissions for Sheridan WWTP and the Placer County percentage of the regional WWTPs were lumped together.	<p>Past Actions:</p> <ul style="list-style-type: none">Installed energy-smart (LED) lighting on all fixtures at the WWTP to reduce energy use. <p>Planned Actions:</p> <ul style="list-style-type: none">Replace all motors at the WWTP with energy efficient motors, when needed.	<p>Past Actions:</p> <ul style="list-style-type: none">Installed solar panels on the aerators on two of the aeration ponds.	N/A	N/A

This page left blank intentionally.

Table C-2. Survey Responses Regarding Mitigation Actions Within the Region (contd.)

Agency	GHG Inventory	Reduction in Energy Consumption	Renewable Energy	Carbon Offsets	Other Mitigation-Related Actions
Placer County Water Agency	<p>The PCWA Board of Directors has a strong interest in being a regional leader among water agencies on the issues of climate change, carbon footprint, greenhouse gas emissions, and energy efficiency, just as it has been with water use efficiency. In late 2007 and early 2008, the PCWA Board of Directors had discussions concerning energy efficiencies and cost containment strategies which led to funding efforts for PCWA's <i>Energy and Greenhouse Gas Benchmark Study</i>. PCWA officials wanted to gain a more thorough understanding of the energy use by PCWA, the energy costs that are embedded in the costs of water delivery, and the implications of climate change to PCWA. This study was completed in July 2009 and gave background information, benchmarked PCWA's energy use, inventoried GHG emissions, and developed energy and GHG emissions options.</p> <p>Since that time, PCWA has voluntarily reported years 2006—2008 GHG emissions to the California Climate Action Registry. In 2009, the Climate Action Reserve became the parent company of the California Climate Action Registry. PCWA began reporting GHG emissions for years 2009—present to its sister company, The Climate Registry, which tracks entity-wide GHG emissions inventory reporting and verification for all of North America.</p>	<p>Past Actions: This is a summary of the existing energy conservation measures currently being used at PCWA. These measures include the use of efficient motors, electrical load management, and water storage, and the practice of a conservation ethic within PCWA.</p> <ul style="list-style-type: none"> Premium efficient motors and right sizing pumps are being used at several facilities. PCWA currently uses Variable Frequency Drive (VFD) motors at many of the major water treatment plants (WTPs) and pump stations. The use of VFD technology allows an electric controller to adjust the speed of an electrical motor by modulating the frequency of electrical power being delivered. VFD's provide continuous controls, matching motor speed to the specific demands of the amount of pumping being performed. VFD's have "soft start" capability that gradually ramp up the motor to operating speed, which lessens the startup electrical load. Energy efficient motors are used at the Auburn and Foothills WTP. Energy efficient motors, also called premium or high-efficiency motors, are on average up to 8% more efficient than standard motors. These motors meet or exceed the efficiency levels listed in the National Electric Manufacturers Associations MG1-1993 publication. PCWA implements vehicle fuel efficiency measures for example: retires old and under-used vehicles, purchases fuel efficient (e.g., hybrid) and/or smaller fleet vehicles, implements engine idling reduction programs and installs automatic idle shut-offs. Energy smart lighting and electrical load management are being used to reduce energy consumption during peak demand periods. Electrical load management has also been used in shifting electrical loads to off-peak schedules. Reducing operational functions, unnecessary lighting, heat, ventilation and air conditioning (HVAC), and pumping during peak hours are ways PCWA has performed electrical load management to reducing electrical energy consumptions. Electrical load management is being performed at the staff level. PCWA staff is making a conscious effort in electricity conservation awareness. Staff members are making sure lights in office complexes and other buildings are turned off when there is no occupancy. Use of HVAC is minimized when building space is unoccupied. HVAC and lighting use is minimized for nominal usage during working hours. Electricity use at the PCWA Business Complex, the Auburn, Bowman, and Foothill WTPs, and unoccupied or partial use facilities benefit from conservation awareness. Water storage and gravity flow operations are used to reduce energy consumption. Water storage is currently being used throughout PCWA water systems providing raw and treated water storage for providing adequate system pressure and eliminating the need for numerous booster pump stations. Water storage provides PCWA the ability to pump and store water during off-peak hours. Gravity flow operations allow PCWA to capture water from high elevations and transport the water through canal systems to water storage or WTPs without the assistance of pumps. <p>Planned Actions:</p> <ul style="list-style-type: none"> Electricity, gasoline, and diesel use account for approximately 95% of PCWA GHG emissions. Consequently, PCWA planned efforts to reduce energy include electricity conservation measures and solar photovoltaic installation. Vehicle efficiency and operational efficiency can be increased in the future by converting to new, more efficient technologies as they become available. Construction of a new corporation yard in West Placer County to reduce number of truck trips for Agency vehicles during maintenance and construction in the West Placer County region. American River Basin Study will analyze effects of climate change to the region and evaluate a variety of mitigation strategies. 	<p>Past Actions:</p> <ul style="list-style-type: none"> PCWA currently has solar panels on three facilities to offset energy usage. In-conduit hydroelectric facilities have been constructed at various PCWA facilities. <p>Planned Actions:</p> <ul style="list-style-type: none"> PCWA is considering small hydroelectric electricity generation facilities at various sites. The incorporation of hydroelectric generation equipment in pipelines and other PCWA sites will provide PCWA with a source of "Green Energy." There are plans to install additional small hydroelectric facilities at several PCWA facilities in the future. 	<p>PCWA has been a member of The Climate Registry, and that organization may adopt verification standards in the future for offsets.</p>	<p>Past Actions:</p> <ul style="list-style-type: none"> PCWA generates electricity at five hydropower facilities, generating electricity without emitting GHG into the atmosphere. Electricity generated by PCWA hydropower is used by PCWA and other PG&E electrical customers. If PG&E were to replace PCWA generated hydropower from another source, the other source could have associated GHG emissions. <p>Planned Actions:</p> <ul style="list-style-type: none"> PCWA will continue to investigate energy efficiency funding opportunities such as utility rebates and government programs.

This page left blank intentionally.

Table C-2. Survey Responses Regarding Mitigation Actions Within the Region (contd.)

Agency	GHG Inventory	Reduction in Energy Consumption	Renewable Energy	Carbon Offsets	Other Mitigation-Related Actions
San Juan Water District	GHG Inventory has not been completed to date.	<p>Past Actions: SJWD continuously looks for opportunities to reduce energy consumption. Design and maintenance opportunities are reviewed and implemented on every available occasion. Representative projects have included the following:</p> <ul style="list-style-type: none"> • Time of day operational changes at booster pump stations resulting in significant peak electrical load reduction associated with pump operation. • Replacement of climate/AC units with higher efficiency units. • Replacement of lighting fixtures and bulbs with higher efficiency units. • Implementation of enhanced SCADA systems to facilitate remote monitoring and thereby reduce driving to perform site visits. • Review and modification of equipment control programming to enhance energy savings. • Installation of motion sensing light switches in various rooms in buildings to automatically shut off lighting when rooms are not occupied. • Use of passive techniques in the maintenance areas to allow for space cooling and heating. • Replacement of motors on pumps, fans, and other devices with high-efficiency units to reduce energy demand. • Use of rechargeable electrical vehicles for meter reading and corporation yard transportation, and performing recharging during off-peak demand periods. • Implementation of leak detection and pipeline and service repair and replacement projects to eliminate water loss, thereby reducing energy demand. • Application on new motors, and conversion of existing motors, to incorporate VFDs to reduce overall energy demand and peak time loading. • Expansion of gravity supplied pressure zone boundaries into pressure zone areas to reduce the need for pumping to supply. • Reduction of system pressures in pumped pressure zones to reduce overall energy demand. • Off-peak time filling of storage reservoirs. • Use of propane-powered rather than gasoline- or diesel-powered forklifts. • Replacement of older standby and emergency generators with higher efficiency units. • Replacement of electronic devices such as computers and monitors with higher efficiency units. • Application of soft start systems on electrical motors to reduce high amperage start-up loads. <p>Planned actions:</p> <ul style="list-style-type: none"> • Periodically re-evaluate installation of turbine power generation units in gravity pipelines to recover available energy normally “burned” as lost head. Implement if/when benefit to cost ratio exceeds one. • Application of LEED into new/future building designs. • Investigation of applicability of alternative fuel and electrical powered vehicles. • Investigation and application of other energy-saving techniques and equipment as new opportunities arise. • Installed a reflective white roofing system on the Water Treatment Plant and Administration Building to decrease in-door temperature management expenses. 	<p>Past Actions:</p> <ul style="list-style-type: none"> • SJWD installed a 795 kW solar power field that became operational in 2010. • Contracted with SMUD for their Solarshares Pilot Program that allocates a portion of SJWD’s energy to SMUD’s photovoltaic energy facilities in the amount of 661,356 kWh/year. • SJWD had a consultant complete an evaluation of the District’s power consumption, water rates, possible solar power installations, and water loss to determine where efficiency improvements may exist. The conclusion of the evaluation was that there is no significant cost energy savings noted for recommendation. 	N/A	<p>Past Actions:</p> <ul style="list-style-type: none"> • Recycling of paper products, waste chemicals and lubricating oils, and e-waste. • SJWD continues to work with other interested parties and stakeholders to investigate and implement energy reduction and renewable energy sources whenever the opportunity is presented. <p>Planned Actions:</p> <ul style="list-style-type: none"> • SJWD intends to comply with energy and GHG regulatory mandates. • SJWD is Installing a reflective white roofing system on the Field Services Maintenance Building to decrease in-door temperature management expenses. • The District is participating in the American River Basin Study (ARBS) which will present a holistic examination of water management practices to address significant recent changes in conditions and regulatory requirements.

This page left blank intentionally.

Table C-2. Survey Responses Regarding Mitigation Actions Within the Region (contd.)

Agency	GHG Inventory	Reduction in Energy Consumption	Renewable Energy	Carbon Offsets	Other Mitigation-Related Actions
Sacramento Regional County Sanitation District	A draft GHG inventory for 2010 was created following the <i>Local Government Operations Protocol for the quantification and reporting of GHG emissions inventories</i> guidance.	<p>Past Actions: Numerous energy optimization projects and process improvements have been made at the Sacramento Regional Wastewater Treatment Plant (SRWWTP). A few examples include the following:</p> <ul style="list-style-type: none"> • Energy use monitoring, trending and analysis. • Audits identify energy saving projects. • Maintenance procedures that provide guidelines for repair and replacement of inefficient equipment and systems. Cost savings examples include: (1) Utility/Service air leak reduction program; (2) Influent pump coating application and wear ring replacement; (3) Primary Odor Removal Tower exhaust fan removal; (4) Digester circulation pump replacement; (5) Tunnel lighting reduction. • New control strategies and standard operating procedures for energy efficient operation under various conditions (e.g., winter/summer, wet/dry weather, in-service and out of service equipment, on or off peak). Cost savings examples include: (1) Grit Pump runtime reduction; (2) Digester mixers runtime reduction; (3) Solids Storage Basin mixer runtime reduction; (4) Influent Pump run-order change; (5) Oxygen plant compressor run-order change; (6) Digester mixed sludge feed pump/control valve replacement. <p>Planned Actions:</p> <ul style="list-style-type: none"> • The District is implementing an Energy Master Plan that will govern all projects associated with the new EchoWater projects. Every piece of equipment that uses electricity will be examined in detail to make sure it conforms to the District's energy requirements. As part of the equipment selection process, business case evaluations were performed that compared electrical consumption of various technologies, with the goal of selecting the lowest life cycle cost. Due to the business case evaluations' span of 60 years energy was heavily weighted. 	<p>Past Actions:</p> <ul style="list-style-type: none"> • Investigation of solar, wind and biofuel. The only cost effective technology evaluated to date was wind energy. However, due to the sensitive environmental habitats and species that exist in the 2,400 acres of Bufferlands that surround the SRWWTP, the SRCSD Board of Directors declined the wind energy proposal in March 2012. • The digestion of solid waste, which is part of the sewer treatment process at the SRWWTP, creates methane gas, which is sold to the Sacramento Municipal Utilities District (SMUD) and used at their cogeneration facility at the SRWWTP site. The methane is used as fuel in the gas turbine duct burner, which uses the methane to generate steam and electricity. The electricity is used by SMUD and the steam is used by the SRWWTP and the Glacier Ice Production Company. • Recently, SRCSD and SMUD finished the Biogas Enhancement Project. This project built a facility to directly inject Fats, Oils, and Grease and Soda Pop wastes directly into the anaerobic digesters, bypassing the sewer collection system and the primary treatment processes, producing methane gas more efficiently and resulting in greater methane production. Overall, this project will 1) generate enough renewable energy for up to 700 homes, 2) reduce the fuel and fleet costs associated with transporting the waste to distant disposal sites such as Oakland, CA and 3) reduce greenhouse gas emissions associated with organic waste in landfills. <p>Planned Actions:</p> <ul style="list-style-type: none"> • Continue in a partnership with SMUD regarding cogeneration with methane and continue to monitor and evaluate solar, biofuel, and other renewable energy technologies that may be more compatible with our site than wind. 	N/A	<p>Past Actions: N/A</p> <p>Planned Actions:</p> <ul style="list-style-type: none"> • The new EchoWater project will employ state-of-the-art electrical consumption monitoring equipment for the purpose of fine tuning and decreasing plant energy usage.

This page left blank intentionally.

Table C-2. Survey Responses Regarding Mitigation Actions Within the Region (contd.)

Agency	GHG Inventory	Reduction In Energy Consumption	Renewable Energy	Carbon Offsets	Other Mitigation-Related Actions
Sacramento Suburban Water District	In 2009, the District contracted with Kennedy/Jenks Consultants (KJC) to create a greenhouse gas (GHG) inventory/carbon footprint calculation for calendar year 2008, consistent with the District's Sustainability Policy. To create the GHG inventory, KJC used the General Reporting Protocol developed by the California Climate Action Registry (CCAR). The spreadsheets prepared and used by KJC were provided to SSWD so that District staff could update the GHG inventory calculations in subsequent years. Using the spreadsheet templates originally prepared by KJC, District staff has now completed GHG inventories for 2009, 2010 and 2011.	<p>Past Actions:</p> <ul style="list-style-type: none">In 2008, the District hired HDR Engineering to prepare a Strategic Energy Management Plan. This study looked at the District's water system and facilities, including buildings, and recommended specific energy conservation measures. HDR's final report was completed in February 2009. As a result of this study, various energy saving measures have been implemented at the District's office buildings (Administration Building and Corporation Yard) including: installation of programmable thermostats, installation of occupancy sensors to control lights, purchase of a hybrid fleet vehicle, all indoor office lighting converted to fluorescent T8, installation of a cool roof at the Administration Building, and a reduction in the number of diesel fleet vehicles.The District is certified as a Sacramento Area Sustainable Business. This program promotes businesses that take voluntary actions to prevent pollution and conserve resources.Purchased one hybrid vehicle.Converted all administrative facilities to LED lighting. <p>Planned Actions:</p> <ul style="list-style-type: none">Proposed purchase of another hybrid vehicle.	<p>Past Actions:</p> <ul style="list-style-type: none">In 2007, the District looked at the feasibility of installing solar panels on the roofs of buildings or on the ground at unused properties. However, the project was not found to be economically feasible with a payback period approaching 30 years.More recently, the District has looked at the feasibility of in-conduit hydro project which would install a small turbine inside a pressurized water pipeline to create electricity. This included a pre-design study, negotiations with SMUD, and economic analyses. At this time the project does not appear to be economically feasible. <p>Planned Actions:</p> <p>N/A</p>	N/A	N/A

Key:
ASCE = American Society of Civil Engineers
CA = California
CCAR = California Climate Action Registry
CHWD= Citrus Heights Water District
GHG = Greenhouse Gas
KJC = Kennedy/Jenks Consultants
kW = kilowatt
LED = Light-emitting diode
LEED = Leadership in Energy and Environmental Design
PACE = Property Assessed Clean Energy Program
PCWA = Placer County Water Agency
PG&E = Pacific Gas and Electric
PV = Photovoltaic
SMUD = Sacramento Municipal Utility District
SJWD = San Juan Water District
SRCSD = Sacramento Regional County Sanitation District
SRWWTP = Sacramento Regional Wastewater Treatment Plant
VFD = Variable Frequency Drive
WTP = Water Treatment Plant
WWTP = Wastewater Treatment Plant

This page left blank intentionally.

Table C-3. Water Management and Efficiency Mitigation and Adaptation Measures from Local Climate Action Plans

Agency	Plan	Summary of Water Management and Efficiency Mitigation and Adaptation Measures
City of Citrus Heights	2011 City of Citrus Heights Greenhouse Gas Reduction Plan	<ul style="list-style-type: none"> • Work with the water agencies to develop plans to implement SB 7 to achieve a 20% reduction in urban water demand by 2020. • Continue to provide a free irrigation review program for residential and commercial buildings and implement a monitoring plan to evaluate if program users are effectively using the irrigation review report to reduce water demand by 20%. • Adopt a landscape ordinance for new development, consistent with Department of Water Resources' guidance. • Work with the water agencies to investigate potential for a gray water and rainwater collection program to encourage use of systems in new residential and commercial uses. • Develop an outreach program to educate residents and business owners on ways to minimize wastewater generation and reuse techniques. • Develop water-sensitive urban design guidelines for new construction and retrofit of existing urban environment. • Reduce municipal landscape irrigation water consumption by 50% by 2020. • Reduce municipal potable water consumption by 40% by 2020. • Convert 25% of impervious parking surfaces on City-owned properties to permeable parking surfaces.
City of Elk Grove	2013 City of Elk Grove Climate Action Plan	<ul style="list-style-type: none"> • Implement the City's Water Conservation Ordinance. • Actively encourage water conservation by both agricultural and urban water users. • Work with urban and agricultural water purveyors to establish long-range conservation plans which set specific conservation objectives and use, to the extent possible, a common planning horizon, plan framework, and estimating/forecasting procedures. • Promote the use of drought-tolerant vegetation to minimize water consumption by providing information to developers and designers. • Encourage use of drought-tolerant planting and grading/improvement design to maximize runoff into designated planter areas. • Update the municipal code to allow for residential greywater systems. • Investigate the feasibility of using recycled water for public landscaping. • Improve the efficiency of municipal water use through retrofits and employee education.
City of Folsom	2017 City of Folsom Sustainability Action Plan	<ul style="list-style-type: none"> • Continue to refine irrigation applications to maximize water conservation and minimize water consumption, including the retrofit of sprinkler nozzles to low-volume models when and where appropriate. Continuous Measurable reductions in annual water usage. • Identify additional opportunities to incorporate water wise, native landscaping into City facilities and parks grounds. • Implement cost-effective water efficiency upgrades at City facilities including: water smart fixtures, low-flow toilets, and water flow sensors. • Install central control irrigation systems where feasible. Central control systems allow managers to control irrigation systems from a personal computer, tablet, or mobile device. • Repair, restore, and add water flow sensors to all irrigation systems operated and maintained by the City that are currently equipped with central control systems. • Perform large landscape irrigation audits for City facilities, parks and streetscapes. • Provide training and education to City staff on water efficient irrigation and sustainable landscape practices. • Consider partnering with local residents and/or businesses to create a water efficient demonstration garden in a location easily accessible to the public.
City of Galt	2017 Compilation and Analysis of Local Climate Action Plan Measures	N/A
City of Rancho Cordova	Yes, in progress	N/A, plan in progress.

This page left blank intentionally.

Table C-3. Water Management and Efficiency Mitigation and Adaptation Measures from Local Climate Action Plans (contd.)

Agency	Plan	Summary of Water Management and Efficiency Mitigation and Adaptation Measures
City of Sacramento	2012 City of Sacramento Climate Action Plan	<ul style="list-style-type: none"> Remove barriers related to the implementation of green building strategies and to include incentives that are not currently in the City Code. Update and/or establish criteria and standards to require water efficiency upgrades as a condition of issuing permits for renovations or additions of existing buildings that involve plumbing fixtures consistent with SB 407 to upgrade noncompliant plumbing fixtures to water- efficient models at transfer of property. Establish a limit on area of impervious surface allowable and require the use of pervious surface materials in new developments to improve groundwater recharge and limit saltwater intrusion. The City shall support the development of joint-use water, drainage, and other utility facilities as appropriate in conjunction with schools, parks, golf courses, and other suitable uses to achieve economy and efficiency in the provision of services and facilities. The City shall maintain a surface water/groundwater conjunctive use program, which uses more surface water when it is available and more groundwater when surface water is limited. The City shall achieve a 20 percent reduction in per-capita water use by 2020 consistent with the state’s 20x2020 Water Conservation Plan. The City shall implement conservation programs that increase water use efficiency, including providing incentives for adoption of water efficiency measures. The City shall continue to enforce City ordinances that prohibit the waste or runoff of water, establish limits on outdoor water use, and specify applicable penalties. The City shall continue to investigate the feasibility of using recycled water where appropriate, cost effective, safe, and environmentally sustainable. The City shall promote the use of rain barrels and rain gardens to conserve water, while not increasing the occurrence of disease vectors. The City shall continue to require the use of water-efficient and river-friendly landscaping in all new development, and shall use water conservation gardens (e.g., Glen Ellen Water Conservation Office) to demonstrate and promote water conserving landscapes. The City shall promote “River Friendly Landscaping” techniques which include the use of native and climate appropriate plants; sustainable design and maintenance; underground (water-efficient) irrigation; and yard waste reduction practices. The City shall continue providing public education (e.g., Bluethumb Program) and conducting outreach campaigns to promote water conservation efforts. The City shall ensure that public facilities and infrastructure are designed to meet ultimate capacity needs. The City shall support the efforts of the Sacramento Regional County Sanitation District (SRCSD) to develop and maintain methane recovery facilities and coordinate efforts to evaluate methane emissions and potential capture at primary and secondary clarifiers and force system mains; maintain methane recovery systems and digester gas combustion systems at wastewater treatment plants; develop waste-to-energy projects at 50 percent of wastewater treatment plants; and evaluate potential for biofuel production at the Sacramento Regional Wastewater Treatment Plant. Identify facilities needed to prevent 10-year event street flooding and 100-year event structure flooding. Ensure that public facilities and infrastructure are designed pursuant to approved basin master plans. Ensure that adequate land area and any other elements are provided for facilities subject to incremental sizing (e.g., detention basins and pump stations). Consider the use of “green infrastructure” and Low Impact Development (LID). The City shall encourage “green infrastructure” design and Low Impact Development (LID) techniques for stormwater facilities (i.e., using vegetation and soil to manage stormwater) to achieve multiple benefits (e.g., preserving and creating open space, improving runoff water quality). The City shall require proponents of new development to submit drainage studies that adhere to City stormwater design requirements and incorporate measures, including “green infrastructure” and Low Impact Development (LID) techniques, to prevent on- or off-site flooding. The City shall review and update its Water Distribution System Master Plan every 5 years. As part of the next Urban Water Management Plan update, the City shall explore the economic costs and benefits associated with recycled water, and identify areas appropriate for additional piping infrastructure. The City shall continue to install water meters in residential units constructed before 1992 and in new developments, and shall incorporate and use automated meter infrastructure (AMI) in both commercial and residential water metering. The City shall seek funding for pilot green infrastructure and Low Impact Development (LID) techniques in the CSS system and incorporate into CSS rehabilitation projects. The City shall conserve and where feasible create or restore areas that provide important water quality benefits such as riparian corridors, buffer zones, wetlands, undeveloped open space areas, levees, and drainage canals for the purpose of protecting water resources in the city’s watershed, creeks, and the Sacramento and American rivers. The City shall continue ongoing Sacramento and American River source water protection efforts (e.g., Keep Our Waters Clean), based on watershed sanitary survey recommendations. The City shall protect open space areas that are currently used for recharging groundwater basins, have the potential to be used for recharge, or may accommodate floodwater or stormwater. The City shall encourage the conservation and restoration of rivers and creeks within the urbanized area as multi-functional open space corridors that complement adjoining development and connect the city’s parks and recreation system to the Sacramento and American rivers.
	City of Sacramento General Plan Update – Sustainability Element	

This page left blank intentionally.

Table C-3. Water Management and Efficiency Mitigation and Adaptation Measures from Local Climate Action Plans (contd.)

Agency	Plan	Summary of Water Management and Efficiency Mitigation and Adaptation Measures
Sacramento County	2011 Climate Action Plan Strategy and Framework 2012 Sacramento County Climate Action Plan – County Government Operations Climate Action Plan – Communitywide Greenhouse Gas Reduction and Climate Change Adaptation (in-progress)	<ul style="list-style-type: none"> • Achieve 20% reduction in per capita water use levels by 2020. • Emphasize water use efficiency as a way to reduce energy consumption. • Increase energy efficiency related to water system management. • Strive to reduce uncertainties in water reliability and quality by increasing the flexibility of the water allocation and distribution system to respond to drought conditions and encouraging redundancy in water storage, supply, and treatment systems. • Elevate the importance of floodplain and open space protection as a means of protecting water quality and habitat, sequestering carbon, and providing groundwater recharge opportunities. • Conduct audits of County institutions (e.g., Corrections) and implement necessary water conservation measures. • Conduct landscape audit and install River Friendly Landscaping in Public Spaces in-lieu of turf. River-Friendly Landscape" embodies the value of reduced resource use (water, energy and nutrients) and practices the guidelines developed in the local "River Friendly Landscape Program" by the Sacramento Stormwater Quality Partnership.
City of Auburn	N/A	N/A
City of Lincoln	Yes, in progress	N/A, plan in progress
City of Rocklin	Yes, in progress	N/A, plan in progress
City of Roseville	City-operations Climate Action Plan, 2009 2010 City of Roseville Community-wide Sustainability Action Plan	<ul style="list-style-type: none"> • Evaluate the current four-tier residential rate structure and establish a structure that further encourages water savings in residential use and implement in FY 2011/2012. • Encourage model lease provisions that would encourage commercial landlords and tenants to share the liabilities and benefits of water-saving measures. • Establish a conservation rate structure (based on water budget billing) for commercial landscapes based on the water budget submitted with original landscape plans or a water budget based on actual planting material and irrigation design. • Continue to implement a community outreach program in partnership with the water districts to educate residents and business owners regarding how to reduce water bills by implementing various water-sensitive urban design strategies and water needs. • Continue to promote the availability of water-efficient products and fixtures at local stores. • Continue to promote the availability of water-efficient and climate-appropriate plants at local nurseries and stores. • Continue to co-market Placer County's POWER program to fund large-scale residential and commercial efficiency retrofits. • Develop a dedicated and consistent funding source for water conservation incentive programs. • Identify parks with creeks running through them to implement low impact development programs to enhance water quality, achieve flood control benefits and provide public education. • Provide guidance to homeowners that wish to build rain gardens. • The City shall investigate providing incentives to encourage existing residential owners to reroute rainwater from rain gutters into landscapes for infiltration.
Town of Loomis	N/A	N/A
Placer County	Yes, in progress	N/A, plan in progress
El Dorado County	N/A	N/A

This page left blank intentionally.