ADAPTATION

INTRODUCTION

Two types of responses to climate change are available: mitigation and adaptation. The previous sections of the CAP have primarily addressed mitigation, or reducing GHG emissions to help limit future human activity-induced climate change. This section will address adaptation, or preparing for and managing risk associated with climate change effects.

The introduction summarizes the climate change effects that Yolo County could expect, based on current science and understanding. There is a large scientific consensus about general categories of climate change effects and their likely consequences over continent-scale geography. However, understanding of the magnitude, timing and region-scale geographic effects and the interrelationships between these effects is still evolving. Thus, there is some uncertainty in the exact assessments that are provided in this section, although the concepts being laid out are widely accepted in the scientific community.

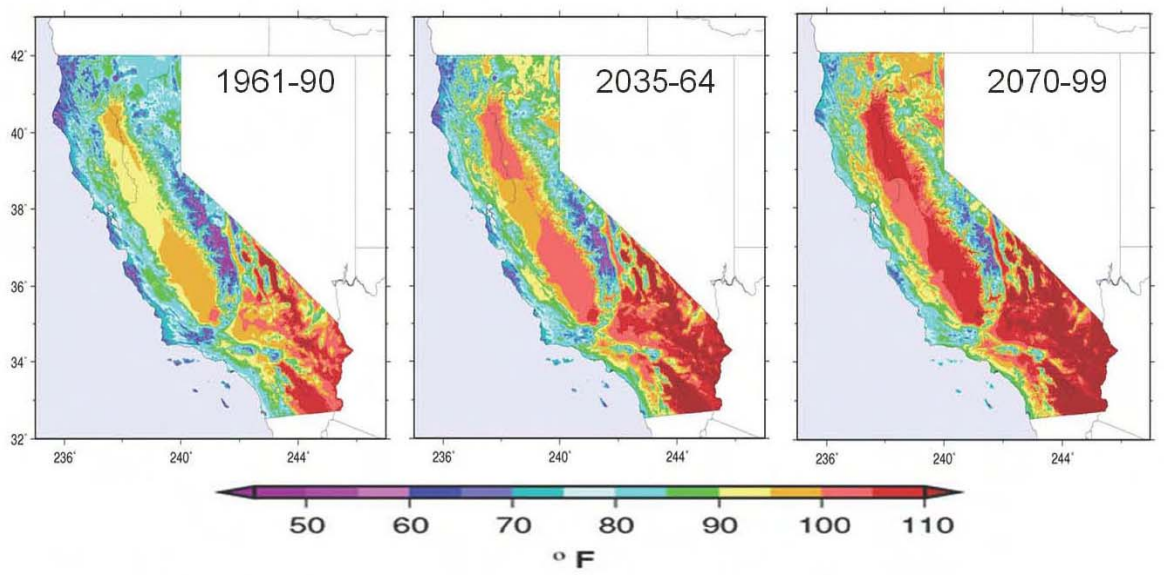


Figure 3-8: Average July Temperatures in California
Source: 2009 California Climate Adaptation Strategy

Following the introduction, the adaptation measures provide a basic framework for integrating climate change risk assessment and management into current planning processes, which culminates with a summary of an adaptation planning framework to help guide preparation for the effects of climate change in Yolo County. Where appropriate, the strategies also highlight mitigation measures for GHG

reduction in other sections of the CAP that also contribute to adaptation.

Climate Change Effects

Temperature
Increased concentrations of GHGs in the atmosphere result in increased air, surface, and ocean temperatures. Increased temperatures, in turn, drive most other climate change effects. Most regional climate model projections predict that annual average temperatures will increase in California during the next 100 years. The California Climate Action Team projects that temperatures in California will rise between 1.8° F and 5.4° F by mid century, and 3.6° F and 9° F by the end of the century (see Figure 3-8 for comparison of average July temperatures in the past and projected through the end of the 21st century). The exact level and timing of such a temperature increase in Yolo County is correspondingly uncertain.

Precipitation
Precipitation projections are more uncertain than those for temperature, because complex temporal variability is inherent in precipitation patterns. The International Panel on Climate Change (IPCC) predicts that increasing global surface temperatures are likely to result in changes in precipitation. Global climate models for a wide range of GHG emission scenarios also predict that average global precipitation will increase during the 21st century as a result of climate change. However, such models are generally not well-suited for predicting regional precipitation changes given that factors affecting precipitation vary by regional geography and meteorology. Thus, significant regional differences in precipitation trends are expected.

Some recent regional modeling efforts conducted for the western United States indicate that overall precipitation will increase, but considerable uncertainty remains. Projected precipitation increases are generally centered in Northern California in the winter months. However, various California climate models provide mixed results regarding changes in total annual precipitation in the State through the end of this century. One potential scenario of concern would be longer periods of drought punctuated by more intense storms during non-dr ought years. An IPCC review of multiple global models identifies much of California as an area where models generally did not agree on whether annual precipitation would increase or decrease; therefore, no firm conclusion on an increase or decrease can be provided, and the California climate could be either warmer-wetter or warmer-drier. Considerable uncertainties about the precise effects of climate change on California hydrology and water resources will remain until more precise and consistent information about how precipitation patterns, timing, and intensity will change is available. Given these uncertainties, regional conclusions regarding the potential effects of climate change on precipitation are speculative.

Yolo County must prepare for a future where competition for water resources between farming, cities, and the environment is greater than at the present time.

Water Supply
Several recent studies have shown that Yolo County's water supply systems are sensitive to climate change. However, experts are uncertain about what the overall effects will be on water supply.

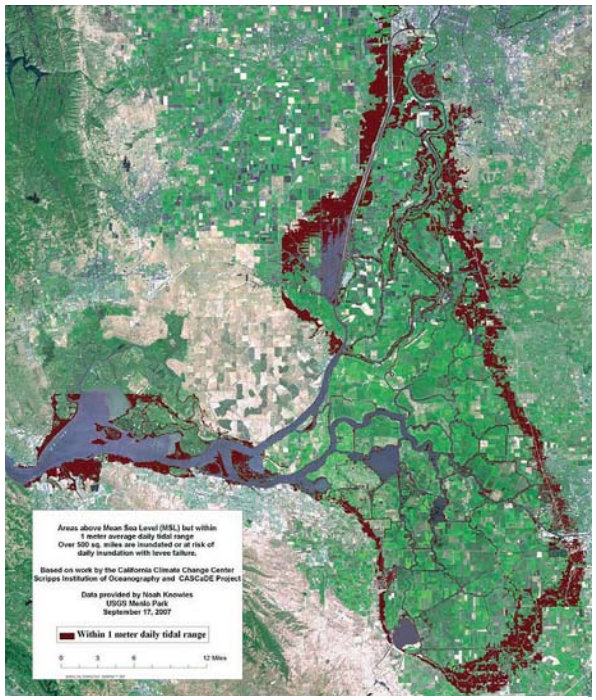


Figure 3-9: 1-meter Sea Level Rise Scenario in Yolo County
Source: Yolo County 2030 General Plan EIR

Some models indicate that drier conditions will cause decreased reservoir supplies and river flows. Other models predict wetter conditions with increased reservoir inflows and storage, and increased river flows.

Despite this uncertainty, it is still widely accepted that changes in water supply will occur and that water yields from reservoirs are expected to be unreliable. Yolo County must prepare for a future where competition for water resources between farming, cities, and the environment is greater than at the present time. Furthermore, climate change is also expected to result in more variable weather patterns, leading to longer and more severe droughts, which could lead to lower aquifer levels for those farmers dependent on groundwater.

Snowpack and Runoff
By delaying runoff during the winter months when precipitation is greatest, snow accumulation in the Sierra Nevada and Cascade Range to the east and the Coast Ranges and Klamath Mountains to the west of the Sacramento River acts as a massive natural reservoir for California. Snowpack typically accumulates from November though the end of March and melts from April through July. The length and timing of each year's snowpack accumulation and melting periods vary based on both temperature and precipitation.

Hydrologic models indicate that higher temperatures associated with global warming would affect the timing and magnitude of both snowmelt and runoff in Californa. Despite uncertainties surrounding climate change precipitation effects, there is very high confidence that higher temperatures will change both snowfall and snowmelt in many watersheds. This is particularly relevant to those areas in Yolo County that are dependent on the Sacramento River. These changes could diminish water supplies, increase flooding, and reduce summer soil moisture.

Sea Level Rise
Worldwide average sea level appears to have risen about 0.4 to 0.7 feet over the past century. Various tidal gauge stations along California's coast show a similar trend. Rising average sea level over the past century has primarily been attributed to warming oceans and related thermal expansion, and the addition of water from melting land-based glaciers and polar ice. Yolo County's location (more than 50 miles inland from the mouth of the Golden Gate) precludes significant effects from coastal processes, such as wave action. However, low-lying communities in or near the Delta, such as Clarksburg and Elkhorn (with elevation as low as five feet above sea level), would be more susceptible to flooding as sea level rise continues. Rising sea levels affecting the San Francisco Bay along the Napa, Solano, and Contra Costa County boarders may also worsen flooding in Yolo County and expand the county's floodplains. It is also possible that sea level rise could reduce the effectiveness of Delta and river levees within the county (reducing the levee freeboard and increasing levee stresses as a result of the rise in the base level of the adjacent water).

Heat-Related Illness
The most notable risk with heat waves is increased levels of heat stress and risk of health effects caused by extreme temperatures. This is particularly important for the elderly and infirm, as well as those with heart or respiratory problems and mental health issues. The percentage of Yolo County residents over the age of 65 was 9.6% in 2008. That number is expected to climb to 16.0% by 2030. With the prevalence of air-conditioner use during heat waves, demand for power could also increase putting more stress on power supply.

Air Quality
Throughout California, air quality is highly impaired compared to most of the nation. While predicting the effect of climate change on air quality is difficult due to complex physical, chemical, social, and policy variables, studies indicate that climate change could further worsen air quality throughout the State, including Yolo County. Higher temperatures may lead to increased ozone formation. Emissions of methane and nitrous oxide are projected to increase global ozone concentrations by 4% to 25% by 2100. If ozone levels rise to the high end of this range, attainment of ozone air quality standards could be impaired, which would have local effects in Yolo County. Highly air quality could result in increased incidence of respiratory disease and asthma.

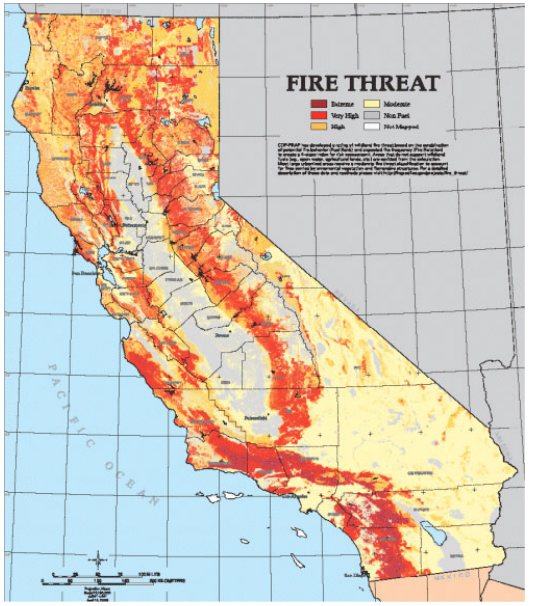


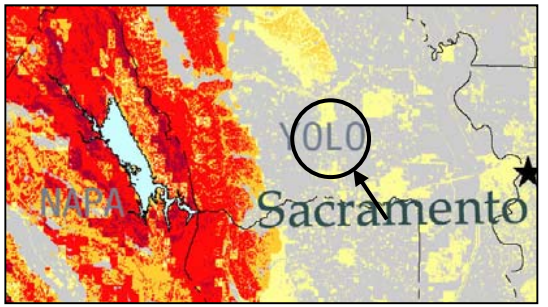
Figure 3-10: Fire Threat Zones in California and Yolo County
Source: 2009 California Climate Adaptation Strategy

Vector-borne Diseases
Temperature increases also could contribute to higher populations of mosquitoes and other disease-spreading organisms, or vectors. In California, three vector-borne diseases are of particular concern: human hantavirus cardiopulmonary syndrome, Lyme disease, and West Nile virus. Disease transmission, however, depends on additional factors such as the interaction of humidity and rainfall, the maturation cycles of both the vector and the pathogen, and human vector control activities. Yolo County's current low level of vector-borne disease is largely due to vector control measures. These measures would likely need to be enhanced and expanded, if vectors changed or risk of disease increased.

Wildfires
Warmer temperatures cause early runoff, which leads to longer and drier summer conditions, thus resulting in wildfires of greater frequency and duration. Hotter weather increases the incidence of lightning, which is the primary cause of wildfires in the United States. In addition, the increased prevalence of dry conditions provides greater opportunities for arson, which is another source of wildfire. As shown in Figure 3-10, much of the coast range hills of Yolo County are considered to have a moderate to high risk of wildfire.

Wildfire is a potentially significant risk to public health and safety. In addition to direct safety risks, wildfires can lead to immediate and long- term adverse public health problems due to smoke exposure. During wildfires, large populations can be exposed to a complex mixture of pollutant gases and particles, which can have both acute and chronic health effects. Smoke can irritate the eyes, harm the respiratory system, and worsen chronic heart and lung diseases, including asthma. People with existing cardiopulmonary diseases are generally at the greatest risk from smoke inhalation, with age being a complicating risk factor for the exposed population.

Extreme Weather Events
Climate change effects on weather patterns, storms, and extreme events in California are not well-understood at this time. Some models suggest increased variations in weather cycles and an increase in intense storms. Others point to increased potential for drought resulting from higher temperatures and evaporation with lower precipitation. Still others suggest that the west coast may have fewer extreme droughts than other areas while experiencing higher average annual rainfall. A separate study predicted higher risks of large storms and floods in California. These conflicting conclusions about climate variability and extreme weather events support the need for additional studies employing models that can provide region-scale predictions. Given uncertainties surrounding the type and extent of expected changes in climate variability and the speculative nature of predicting extreme weather events, effects of changing storm patterns and other extreme weather remain unclear.



MEASURE AD-1:
PREPARE FOR THE EFFECTS OF CLIMATE CHANGE ON AGRICULTURE

Measure Description

Yolo County represents many of the attributes of agricultural landscapes throughout California's Central Valley: irrigated row crops on alluvial plains; upland grazed grasslands; small towns and cities; and a changing mixture of urban, suburban, and farming-based livelihoods through the past few decades. The choice of crops can vary annually depending on a complex variety of market, economic, weather, soil condition, and other factors. Yolo County has a climate that is slightly cooler and wetter than the more productive agricultural counties further south. The most important crops are tomatoes, alfalfa hay, wine grapes, and almonds, but a diversity of crops can be produced, which ultimately may increase resilience for future environmental changes, extreme events, and market competition.

The degree to which climate change will affect agriculture depends on a variety of factors. Potential effects include reductions in water supply and reliability, increased evapotranspiration, changes in growing season, and altered crop choices. Productivity and profitability may be negatively or positively affected by changes to the growing season and altered crop choices, depending on choices made by farmers. Overall, crops that may be hard-hit include wine grapes and fruit and nut trees. Yolo County's fruit and nut orchards covered approximately 24,006 acres in 2008, producing a wide variety of crops including almonds, apples, apricots, blackberries, blueberries, cherries, chestnuts, citrus fruit, figs, kiwis, nectarines, olives, peaches, pears, pecans, persimmons, pistachios, pomegranates, prunes, strawberries, table grapes, and walnuts.

Crop Vulnerabilities

The effects of climate change on crop vulnerability are complex with many interrelationships that still need to be better understood. While increases CO_2 and temperature could accelerate the life cycles of grain and oilseed crops, only small yield increases are expected. However, many crops are susceptible to heat waves particularly during flowering, and prolonged extreme temperatures can reduce plant growth and productivity.

Many of Yolo County's row crops are warm-season horticultural crops (e.g., tomato, cucumber, sweet corn, and pepper) with a temperature optimum of 68°F to 77°F for yield, and an acceptable range of 53.6°F to 86°F, with a maximum tolerance of 95°F. Mean mid-summer maximum temperatures already slightly exceed this, suggesting that 1.8° F and 5.4° F temperature increase by mid-century may force a shift to hot-season crops such as melon and sweet potato which have higher acceptable temperature ranges (64°F to 95°F). Warmer winter temperatures, however, would favor cool-season crops, such as lettuce and broccoli, that are now grown in winter/early spring further south, and which have an acceptable range of 41°F to 77°F.

For field crops such as corn and rice, temperature extremes exceeding 41°F-95°F, respectively, decrease pollen viability and pollen production, and reduce yields.

For corn, kernel development is reduced at temperatures greater than 86°F. Corn, but is less vulnerable to heat waves during the reproductive phase than grains such as wheat, barley, and rice.

Fruit trees require 200 to 1,200 hours of winter chill to flower. Chill hours are computed on a daily basis relative to a reference temperature. Using climate predictions for the Central Valley, winter chill hours will decrease from a baseline of 1,000 hours, as observed in 1950, to about 500 hours by 2100. Under most climate scenarios, the winter climate in Yolo County will approach the critical thresholds for yield for many fruit tree species by the end of the century.

Crop Water Needs

Farmers in Yolo County rely on groundwater for almost 40% of their supply in a normal water supply year, and this is expected to increase under possible future drought and population growth conditions. According to the California Department of Water Resources, rice, pasture, and hay have the highest applied water, and

evapotranspiration (ET) of applied water, and are therefore most vulnerable to water shortages. The effect of climate change on water supply is uncertain, and thus the effect of variations in the water supply on agriculture is not fully understood.

Both groundwater overdraft and water transfers contribute to uncertainty in the quantity and sometimes the quality of irrigation water for agriculture. Intermittent periods of dry years may not permit an easy rebound for irrigated crops, especially if groundwater is not available and affordable. Perennial crops are particularly vulnerable, but even growers of annual crops are also vulnerable, and may need to shift crops or set aside land. The prognosis of a drier Western United States suggests high vulnerability for crops that are abundant water users, especially if their cash value is low.

Pests and Disease
Pest and disease problems are difficult to predict, and assessments often do not account for potential yield losses due to changes in pest dynamics and density under climate change. Even a 3.6°F temperature rise can result in one to five additional generations per year for a range of invertebrates such as insects, mites and nematodes. Many insect species will expand their geographical range in a warmer climate.

Adaptation Strategies
According to the California Climate Change Center study *Potential for Adaptation to Climate Change in an Agricultural Landscape in the Central Valley of California*, potential adaptation responses by growers include changes in crop mix, irrigation methods, fertilization practices, tillage practices, and land management. CAP GHG reduction measures that also serve as adaptation strategies are noted in *italics*.

Crop mix. Growers may need to shift toward hot-season species, with greater winter potential for cool-season crops such as lettuce and broccoli. Additional crops or varieties may become more prevalent in Yolo County by mid-century, especially if advances are made in second generation biofuels, such as those producing cellulose useful as fuel. A shift to greater crop diversity will offset some of the risks from weather variation due to climate change.

Irrigation. If water supply becomes threatened, growers may need to shift towards drip irrigation and crops that provide higher income per amount of applied water. In addition to reducing water use, drip irrigation has been shown to reduce GHGs such as carbon dioxide and nitrous oxide compared to furrow irrigation, with no difference in yields for tomatoes, a major crop in Yolo County. However, it is not useful for all crops and entails substantial investment, labor, and energy for pressurization. *Supporting Agriculture Measure: Reduce Agricultural Water Use through Alternative Irrigation Techniques.*

Preparation
The critical function for the County will be to work with the University of California Cooperative Extension, Yolo County Resource Conservation District, and other agricultural organizations to develop outreach programs to inform and assist

farmers in adopting practices to adapt to the effects of climate change (e.g., temperature and precipitation variation).

Note: As commodity prices are dependent on global production and demand, any assessment of the effects of climate change on California agriculture must be done in the context of both regional and global changes in yields and commodity markets. The magnitude and direction of these yields will be determined by climatic factors such as temperature, precipitation, and weather variability, and production factors such as biotic responses to elevated atmospheric CO_2 concentrations, the availability and application of nutrients, and the ability of producers to adapt to these changes. Furthermore, as global markets develop for carbon trading, opportunities may arise for California agricultural producers to mitigate GHGs (for example, through sequestration, reduction in fuel use and vehicle emissions, or biofuel production). Therefore, adjustments in global food and mitigation markets together will significantly influence Yolo County agricultural producers' responses to climate change.

ACTION		RESPONSIBILITY	TIMEFRAME
A	Work with UC Cooperative Extension, Yolo County Resource Conservation District, and other agricultural organizations to develop outreach programs to inform and assist farmers in changing cropping patterns and/or practices to adapt to the effects of climate change (e.g., temperature and rainfall variation, etc.).	Planning & Public Works	Medium-Term
B	Develop a program to monitor and summarize relevant studies pertinent to climate change effects on agriculture and potential adaptation strategies, as a part of the monitoring report for the CAP.	Planning & Public Works	Medium-Term

PROGRESS INDICATORS		TARGET YEAR
A	Implement coordinated risk assessment and management effort and outreach program to help farmers prepare for climate change effects on agriculture.	2015

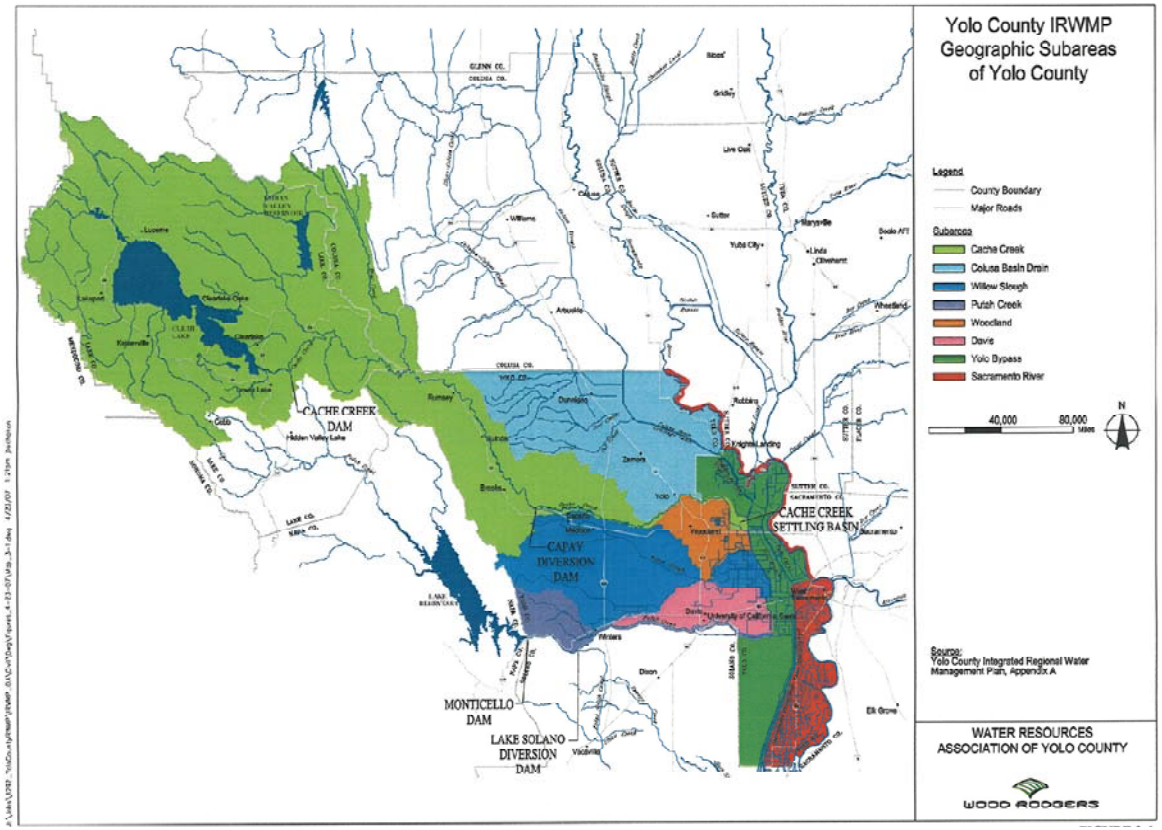
MEASURE AD-2:
PREPARE FOR CLIMATE CHANGE EFFECTS ON WATER RESOURCES

Measure Description

In the Integrated Regional Water Management Plan (IRWMP), the Water Resources Association of Yolo County (WRA) addressed such potential climate change effects as water supply and drought preparedness, variation in precipitation, water quality, flood management and storm drainage, and riparian and aquatic ecosystem enhancement. To prepare for climate change effects on water resources, this framework can be adapted to include increased variation in precipitation, changes in runoff patterns, changes in customer demand, and sea level rise effects on water supply and storage and distribution infrastructure.

Water supplies are most vulnerable to potential shifts in the timing of springtime runoff from the April-to-July period to winter months, and to decreases in annual runoff volumes. Water storage capacity would be moderately affected by shifts in seasonal runoff and increased customer demand, and very susceptible to decreases in annual precipitation volumes. To maximize

Figure 3-11: Geographic Subareas of Yolo County



Source: Water Resources Association of Yolo County – Integrated Regional Water Management Plan

supply reliability, the IRWMP should set in place plans to increase storage capacity and explore more diverse sources. These actions would provide flexibility and adaptability to unknown future conditions.

To prepare for these and other effects on water resources, the County will work with the WRA to update the IRWMP to monitor and respond to climate change effects on water resources. In particular, the update should focus on improving the compatibility of existing storm water and irrigation distribution systems with a groundwater banking program, to make the best use of extreme flooding and storm surges and variations in precipitation. CAP GHG reduction measures that also serve as adaptation strategies are noted in *italics* since they decrease the use of water for buildings and irrigated landscapes, conserving resources for other higher value uses.

Water Conservation: Implement best management practices for water use efficiency to reduce water and energy demand. *Measure E-6: Reduce Water Consumption in Existing Buildings through Increased Plumbing Efficiency; Measure E-7: Weather-based Irrigation and Water Efficient Turf Management; Energy Supporting Measure: Establish a Standard of No Net Increase In Water Demand For New Buildings.*

Water Reuse and Recycling: Expand water recycling and develop local water supplies that are more resilient to climate change. *Energy Supporting Measure: Promote Greywater and Rainwater Collection and Non-Potable Water Systems.*

ACTION		RESPONSIBILITY	TIMEFRAME
A	Work with the WRA to update the Integrated Regional Water Resource Management Plan to monitor and respond to climate change effects on water resources.	County Administrator WRA Planning & Public Works	Medium-Term

PROGRESS INDICATORS		TARGET YEAR
A	Update IRWMP with emphasis on summarizing and preparing for climate change effects on water supply.	2015

MEASURE AD-3:
RESPOND TO THE POTENTIAL THREAT OF SEA LEVEL RISE

Measure Description

To prepare for the likely effects of sea level rise, Yolo County will coordinate with the Federal Emergency Management Agency (FEMA), Central Valley Flood Protection Board, and Department of Water Resources (DWR) to ensure that the flood mapping for potentially affected areas is regularly updated to reflect changes in Base Flood Elevations and to account for potential sea level rise. In addition, the County will ensure that sea level rise assessment and risk management processes are incorporated into the Yolo Operational Area Multi-Hazard Mitigation Plan (Action B in AD-5) and WRA's Integrated Regional Water Management Plan (Action A in AD-2). Furthermore, the County will work with the University of California – Davis, Yolo County cities, and neighboring counties to identify areas that will be affected by sea-level rise and institute protection and adaptation measures. Though Yolo County does not contain any areas adjacent to the coast or San Francisco Bay, it is still susceptible to flooding effects of sea level rise in the Delta. As part of the National Flood Insurance Program (NFIP) Community Rating System (CRS) program, the County will expand outreach to inform residents of potentially affected areas regarding the need to plan for sea level rise. The County will also work to revise capital improvement plans for roads, levees, and other critical infrastructure in potentially affected areas to address the effects of future sea level rise.

ACTION		RESPONSIBILITY	TIMEFRAME
A	Coordinate with the FEMA and DWR to ensure that the flood mapping for potentially affected areas is regularly updated to reflect changes in Base Flood Elevations accounting for sea level rise.	Planning & Public Works Office of Emergency Services (OES)	Medium-Term
B	As part of the National Flood Insurance Program (NFIP) Community Rating System (CRS) program, expand outreach to inform residents of potentially affected areas regarding the need to plan for sea level rise.	Planning & Public Works OES	Medium-Term
C	Work with the University of California – Davis and Yolo County cities to identify areas that will be affected by sea-level rise and institute protection and adaptation measures.	Planning & Public Works OES UC Davis	Medium-Term
D	Revise capital improvement plans for roads, levees, and other critical infrastructure in potentially affected areas to address the effects of future sea level rise.	Planning & Public Works OES	Medium-Term

PROGRESS INDICATORS		TARGET YEAR
A	Complete updates and collaboration efforts in Actions A-D.	2015

MEASURE AD-4:
PROTECT THE PUBLIC FROM INCREASED HEALTH RISKS

Measure Description

Climate change may affect human health in a variety of ways, including direct heat-related health effects and increases in air pollution and mosquito-borne diseases. To prepare for potential health threats, the County will update and revise the Yolo Operational Area Multi-Hazard Mitigation Plan and the Yolo County Office of Emergency Services Standardized Emergency Management System to address the public health risks associated with climate change, including vector-borne disease, heat-related illness and urban heat islands, air quality, wildfire, sea-level rise, and flooding, which are addressed in other measures within the Adaptation Strategy. GHG reduction measures that also serve as adaptation strategies are noted in *italics*.

Urban Heat Island Effect: Improve building envelopes and encourage the application of green roof or cool roof technology, to reduce the need to cool buildings in hot weather. *Measure E-1: Reduce Energy Consumption in Existing Residential and Non-Residential Buildings; Measure E-2: Reduce Energy Consumption in New Residential and Non-Residential Buildings.*

Air Quality: Encourage energy conservation, implement energy efficiency strategies and facilitate renewable energy installation to reduce pressure on the electrical grid during heat waves and drought conditions. *Measure E-1: Pursue a Community Choice Aggregation Program; Measure E-4: Increase Onsite Renewable Energy Generation; Measure E-5: Promote On-farm Renewable Energy Facilities.*

ACTION		RESPONSIBILITY	TIMEFRAME
A	Update and revise the Yolo Operational Area Multi-Hazard Mitigation Plan and the Yolo County Office of Emergency Services' Standardized Emergency Management System to address the public health risks associated with climate change.	Health Department Office of Emergency Services	Medium-Term

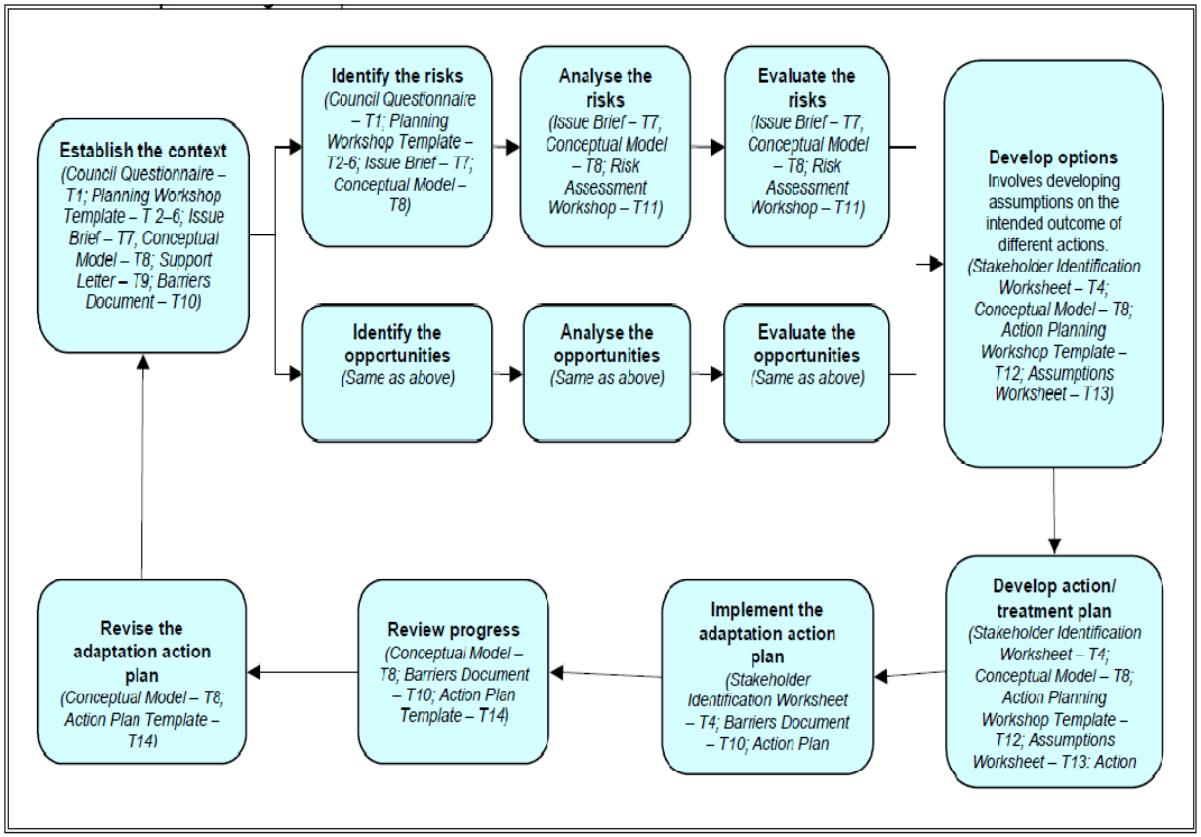
PROGRESS INDICATORS		TARGET YEAR
A	Update and revise the Yolo Operational Area Multi-Hazard Mitigation Plan and the Yolo County Office of Emergency Services' Standardized Emergency Management System.	2014

MEASURE AD-5: DEVELOP GOVERNANCE STRATEGIES TO ENSURE THAT YOLO COUNTY REMAINS RESILIENT TO CLIMATE CHANGE

Measure Description

Preparing to adapt to the effects of climate change requires addressing governmental structures, processes, and priorities that influence land use, resource management, infrastructure investment, and many other decisions made by County government and other agencies. Climate adaptation requires strong institutional **processes** and clear decision-making frameworks to fully integrate the appropriate risk assessments into the County's long-term plans, investments, and operations. This integrated risk assessment or "adaptive management" approach is critical to identify action priorities that can be incorporated into existing plans.

The following steps were developed and presented in ICLEI's *Local Government Climate Change Adaptation Toolkit*, and can be used as a guide for updating the County's Multi-Hazard Risk Mitigation Plan, Integrated Regional Water Management Plan, the Yolo County Office of Emergency Services' Standardized Emergency Management System, and the Yolo County General Plan:



Source: ICLEI's Local Government Climate Change Adaptation Toolkit

1) Establish the context – Define the objectives of the adaptive management process, identify stakeholders, establish success metrics, and identify climate change issues (i.e., temperature increase, precipitation volatility, water scarcity, sea level rise, flooding, wildfires, extreme weather events, heat-related illness, and air quality) as identified in this document.

2) Identify risks and opportunities – Examine the climate change issues facing Yolo County to identify potential risks and opportunities. This has been accomplished in part within the current Yolo Operational Area Multi-Hazard Mitigation Plan, and should include consideration of climate change scenarios developed by the California Climate Change Center and Climate Action Team (CAT), the California Natural Resources Agency, and the Pacific Council on International Policy.

3) Analyze risks and opportunities – Examine existing risk management practices employed within the Yolo Operational Area Multi-Hazard Mitigation Plan, the Integrated Regional Water Management Plan, and the Yolo County General Plan. This step involves consulting the California Natural Resources Agency, Office of Emergency Services (OEM), Department of Fish and Game, Department of Conservation, and Department of Food and Agriculture to obtain information regarding identified risks and opportunities.

4) Evaluate risks and opportunities – Evaluate the likelihood and consequence of identified risks and opportunities and establishing priorities.

5) Develop options – Examine priority risks and opportunities and develop assumptions regarding factors that would mitigate risks. Identify direct and indirect control over risks, as well as the effects of particular risk reduction actions.

6) Develop risk assessment and management updates to current plans – Develop updates to reduce risks and harness opportunities in, at minimum, the following plans: the Yolo Operational Area Multi-Hazard Mitigation Plan, the Integrated Regional Water Management Plan, and the Yolo County General Plan.

7) Implement the adaptation action plan – Implement the actions according to the schedule set out in plan updates.

8) Review progress – Monitor progress throughout implementation and review sections of the plan updates.

9) Revise the adaptation plan updates – Prepare progress reviews and additional plan revisions, and revisit key assumptions, as needed. This process should become a cycle. The priority of risks and opportunities may change over time, so institutionalizing this process will help ensure that the County and other agencies are prepared to implement effective climate adaptation actions.

ACTION		RESPONSIBILITY	TIMEFRAME
A	As a part of the biennial report to the Board of Supervisors regarding implementation of the CAP, provide an update on climate change adaptation science, policy, and legislation at the state, regional, and local level to guide future revisions.	Planning & Public Works	Short-Term
B	Update the Yolo Operational Area Multi-Hazard Mitigation Plan with an emphasis on assessing climate change related effects and risks in Yolo County and developing adaptation measures and processes.	Planning & Public Works	Medium-Term
C	Consult and coordinate with the California Natural Resources Agency, OES, Department of Fish and Game, Department of Conservation, and Department of Food and Agriculture regarding development of climate adaptation priorities.	Planning & Public Works	Medium-Term
D	Collaborate with researchers at the UC – Davis regarding regional climate data monitoring and risk modeling.	Planning & Public Works	Medium-Term

PROGRESS INDICATORS		TARGET YEAR
A	Maintain a summary of current state-of-the-art climate adaptation science, policy, and legislation at the state, regional, and local level, to be updated biennially for the CAP update report to the Board of Supervisors.	2013
B	Update the Yolo Operational Area Multi-Hazard Mitigation Plan.	2014