



2024 Hazard Mitigation Plan

Contra Costa County,
California

West County
Wastewater
District Annex

DRAFT





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1. INTRODUCTION

This Annex details the hazard mitigation elements specific to West County Wastewater District, a participating jurisdiction to the 2024 Contra Costa County Hazard Mitigation Plan update. This Annex is not intended to be a standalone document but supplements the information contained in **Volume 1 (Planning Area-wide Elements)**. Therefore, all sections of **Volume 1** including the planning process, hazard identification and risk assessment, mitigation strategy, and plan maintenance apply to and were met by the District. This Annex provides additional information specific to the District, with a focus on providing additional details on the hazard risk assessment and mitigation strategy (i.e., mitigation actions) for this community.

2. LOCAL PLANNING TEAM

The West County Wastewater District Local Planning Team was comprised of the members listed on **Table 1**.

Table 1. West County Wastewater District Local Planning Team Members

Name	Title	Department
Judy Chen	Planning and Support Services Manager	West County Wastewater District (Infrastructure and Planning)
Aaron Winer	Director of Water Quality and Resource Recovery	West County Wastewater District (Water Quality and Resource Recovery)

3. JURISDICTION PROFILE

West County Wastewater District (WCW) is a self-governing local service agency that services an area consisting of the City of San Pablo, northern subdivisions of the City of Richmond, designated sectors of the City of Pinole, the unincorporated areas of Tara Hills, East Richmond Heights, El Sobrante, Rollingwood, Bayview, and other parts of Unincorporated Contra Costa County.

WCW is responsible for wastewater collection, treatment, and disposal to prevent the spread of disease, ensuring a healthy community, and preventing raw sewage from entering the environment and San Francisco Bay. Additionally, WCW ensures sewage or wastewater is flowing effectively from homes and businesses by maintaining and monitoring the sewer system and providing emergency response to sewer overflows in the service area.

WCW owns, operates, and maintains a wastewater collection system with 253 miles of gravity sewer pipelines, 17 lift stations, six (6) miles of pressure force mains, and a Water Quality and Resource Recovery Plant (WQRRP) with a capacity of 12.5 million gallons per day (mgd) average dry weather flow. The service area covers 16.9 square miles. In addition to the owned assets listed here, WCW provides contract maintenance and a base level of operation for two (2) sewer lift stations and one (1) storm water pump station. This work is done for Contra Costa County and Crockett Community Services District.

WCW treats large volumes of storm water from ponds at the Chevron Refinery located in the area, non-contact storm water runoff from Republic Services' (formerly West County) Landfill composting operation adjacent to the treatment facility, alum discharge from EBMUD's Sobrante Water Treatment Plant, and RO reject from EBMUD's RARE plant mentioned previously. These services are all done under permits with prescribed monitoring and control requirements.



3.1. Population

WCW provides services to approximately 34,000 residences and 900 commercial and industrial businesses, with a total population of a little over 100,000 residents.

3.1.1. Underserved Population

The 2023 California State Hazard Mitigation Plan identifies the Centers for Disease Control and Prevention (CDC) Social Vulnerability Index (SVI) as the most appropriate and authoritative dataset to identify areas where efforts can be prioritized to ensure equitable outcomes from mitigation planning and actions.

CDC’s SVI combines 16 social factors, within four (4) themes (i.e., socioeconomic status, household characteristics, racial and ethnic minority status, and housing type and transportation), to identify areas of social vulnerability. **Table 2** outlines the SVI information for the WCW planning area boundary.

Note: ArcGIS mapping analysis was performed utilizing Census Tract data by overlaying Census Tracts with the WCW planning area boundary. The information outlined in this section includes data from the Census Tracts that intersect the jurisdiction.

Table 2. Social Vulnerability Index (2020)

Theme	Social Factors	Percent
Socioeconomic Status	People below 150% poverty estimate	17.9%
	Unemployed <i>(Civilian 16 years old and older)</i>	3.1%
	Housing Cost Burden	11.0%
	No High School Diploma	13.4%
	No Health Insurance	8.8%
Household Characteristics	65 years old and older	14.9%
	17 years and younger	22.0%
	Civilian with a Disability	12.9%
	Single-Parent Household	2.6%
	English Language Proficiency	12.0%
Racial and Ethnic Minority Status	<ul style="list-style-type: none"> • Hispanic or Latino (of any race) • Black or African American • Asian • American Indian or Alaska Native • Native Hawaiian or Pacific Islander • Two or More Races • Other Races 	83.0%



Theme	Social Factors	Percent
Housing Type and Transportation	Multi-Unit Structures	6.2%
	Mobile Homes	0.4%
	Crowding	2.9%
	No Vehicle	1.9%
	Group Quarters	1.5%

3.2. Brief History

WCW was created in 1921 to serve 15,000 residents in the City of San Pablo and North Richmond, and a 24-inch outfall to Castro Creek was built. In 1955, WCW built a six (6) million mgd primary treatment plant and between 1972 and 1975 a secondary treatment expansion to 12.5 mgd was completed. Wet weather equalization facilities, additional sludge drying lagoons, and maintenance shop expansion was completed in 1985. A major remodel of the operations/lab building, and conversion from chlorine gas to sodium hypochlorite disinfection was completed in 1998. Additionally, in 2007, one (1) megawatt (MW) of solar panels and two (2) MW emergency generators were installed on WCW property.

In collaboration with the East Bay Municipal Utility District (EBMUD), upgrades to WCW’s secondary processes have been implemented and improved the reliability and consistent quality of treated secondary effluent produced. Since around 1980, WCW and EBMUD have partnered on a recycled water program. Originally, this effort provided irrigation source water for the Richmond Country Club. Over the past 25 to 30 years however, EBMUD has constructed two (2) reclaimed water plants (North Richmond Water Reclamation Plant and the Richmond Advanced Recycled Expansion or RARE facility) which take, and polish WCW effluent and sends it to the Chevron Refinery for use in boilers and cooling towers. This process allows the use of reclaimed water in place of potable water.

For the past four (4) years, WCW has embarked on planning and implementing its Clean and Green Project (C&G). C&G objectives include improving operability and general reliability of treatment plant processes, modernizing critical process units, rebuilding/replacing most solids treatment, handling and disposal components, reducing greenhouse gas emissions by an estimated 90% and, producing most of its electrical power needs by installing solar generation and electrical cogeneration. This last item, electrical cogeneration, takes methane gas produced onsite, and uses it to power engines that generate electricity. Heat from the process is also captured and utilized for digester heating. C&G is expected to be substantially complete by the end of 2024 except for a battery energy storage system (BESS). The BESS component is scheduled to be completed in 2025 and will provide two (2) hours of backup power to run the treatment facility. This will avoid the need for running diesel generators during short term PG&E or internal grid power interruptions, thereby improving air quality.

3.3. Governing Body Format

WCW is governed by a five (5) member Board of Directors, elected by local citizens to serve four (4) year terms. Each Board member represents the geographic area in which they live. The Board assumes responsibility for the adoption of this Plan and the General Manager will oversee its implementation.



4. DEVELOPMENT TRENDS

WCW has begun to see an increase in development in landslide areas (potential for land shifting that could damage infrastructure), as well as areas that are susceptible to high groundwater (potential for inflow and infiltration that could lead to capacity-related infrastructure issues).

5. CAPABILITY ASSESSMENT

Federal regulations require hazard mitigation plans to identify goals for reducing long-term vulnerabilities to the identified hazards in the planning area (Section 201.6(c)(3)(i)). A critical step in the development of specific hazard mitigation actions and projects is assessing existing authorities, policies, programs, and resources and capabilities to use or modify local tools to reduce losses and vulnerability from profiled hazards.

A capability assessment was conducted for WCW and participating jurisdictions' authorities, policies, programs, and resources. Goals and mitigation actions were developed using input from this assessment.

The Local Planning Team assessed WCW's capabilities that can contribute to the reduction of long-term vulnerabilities to hazards. The capabilities include the following categories:

- Planning and Regulatory Capabilities
- Administrative and Technical Capabilities
- Financial Capabilities
- Education and Outreach Capabilities

Additionally, ways to expand on and improve these existing policies and programs to integrate hazard mitigation into the day-to-day activities and programs of WCW were considered.

5.1. Planning and Regulatory Capabilities

These include local ordinances, policies, and laws to manage growth and development (e.g., land use plans, capital improvement plans, transportation plans, emergency preparedness and response plans, building codes, and zoning ordinances). The description section of each Planning and Regulatory Capability includes a paragraph on expansion, implementation, and improvement. **Table 3** contains a list of legal and regulatory capabilities.



Table 3. Planning and Regulatory Capabilities

Emergency Response Plans			
<p>The State Emergency Response Plan (SERP) satisfies the State Water Board Order No WQ 2022-0103-DWQ. The purpose of the SERP is to support a prompt, orderly, and effective response to sanitary sewer spills, reduce spill volumes, and collect information for prevention of future spills. Spills are the discharge of sewage from any portion of a sanitary sewer system due to system overflow, operational failure, or infrastructure failure. The SERP provides guidelines for personnel to follow in responding to, cleaning up, reporting, and properly documenting spills.</p> <p>The Overflow Emergency Response Plan (OERP) supports an orderly and effective response to Sanitary Sewer Overflows (SSOs). The OERP provides guidelines for District personnel to follow in responding to, cleaning up, and reporting SSOs that may occur within WCW's service area. This OERP satisfies the California State Water Resources Control Board (SWRCB) General Waste Discharge Requirements, which require wastewater collection agencies to have an OERP.</p> <p>Expansion, Implementation, and Improvement: This Hazard Mitigation Plan will be used as an essential tool to update the SERP and OERP. Mitigation actions that are preparedness and response in nature will be analyzed for applicability and inclusion in the description of the SERP and OERP processes and procedures.</p>			
Updated	2023	Hazards Addressed	Climate Change, Dam and Levee Failure, Drought, Earthquake, Flood, Landslide, Sea Level Rise, Severe Weather, Tsunami, Wildfire, Hazard Materials Incident
West County Wastewater District Code			
<p>West County Wastewater operates under a variety of ordinances and codes including Board of Directors meetings and procedures, personnel, solid waste collections, connections and fees, uniform plumbing code, sewage and discharge regulations, and an ordinance list.</p> <p>Expansion, Implementation, and Improvement: The WCW Code will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses.</p>			
Updated	2023	Hazards Addressed	Climate Change, Dam and Levee Failure, Drought, Earthquake, Flood, Landslide, Sea Level Rise, Severe Weather, Tsunami, Wildfire
Capital Improvement Plan			
<p>The 10-Year Capital Improvement Plan (CIP) is a living document subject to adjustment. The Plan consists of projections based on current information, including condition and needs assessments as well as regulatory requirements. From the CIP, staff develops the five (5) Year Expenditure Plan which includes more detailed proposed spending. Staff also brings a two (2) year budget to the Board for adoption. During the presentation of the budget for adoption, staff will make plan adjustments where necessary to accommodate changing operational needs and regulatory requirements.</p> <p>Expansion, Implementation, and Improvement: The CIP should include mitigation measures that will be funded by WCW such as improvements to sanitary sewer collection system and strengthening of structures.</p>			
Updated	2023	Hazards Addressed	Climate Change, Dam and Levee Failure, Drought, Earthquake, Flood, Landslide, Sea Level Rise, Severe Weather, Tsunami, Wildfire



Strategic Plan			
<p>The Strategic Plan maps out a path to guide WCW over the next five (5) years, ensuring ongoing reliable service, while continuing to protect public health and the environment. Additionally, the Plan reflects the WCW's direction as an agency, supporting a vision for a future of collaboration, innovation, and trust.</p> <p>Expansion, Implementation, and Improvement: This Hazard Mitigation Plan will be used as an essential tool to update the Strategic Plan. Mitigation actions will be analyzed for applicability and inclusion in the next reiteration of the Strategic Plan.</p>			
Updated	2023	Hazards Addressed	Climate Change, Dam and Levee Failure, Drought, Earthquake, Flood, Landslide, Sea Level Rise, Severe Weather, Tsunami, Wildfire
GIS Strategic Plan			
<p>The Geographic Information System (GIS) Strategic Plan delves into WCW's GIS ecosystem, examining software and hardware requirements, data management protocols, training needs, and budget considerations. It highlights the potential benefits of a GIS program, including enhanced data accuracy, improved visualization capabilities, and streamlined decision-making processes.</p> <p>Expansion, Implementation, and Improvement: This Hazard Mitigation Plan will be used as an essential tool to update the GIS Strategic Plan.</p>			
Updated	2023	Hazards Addressed	Climate Change, Drought
Sewer System Management Plan			
<p>The Sewer System Management Plan (SSMP) reflects sewer collection system operations and maintenance programs, processes, and documents. WCW is responsible for updating and implementing the Overflow Emergency Response Plan; Fats, Oils, and Grease (FOG) Control Program; legal authority; measures and activities; design and construction standards; capacity management; Sanitary Sewer Overflows (SSO) monitoring; measurement and program modifications; and audits.</p> <p>Expansion, Implementation, and Improvement: This Hazard Mitigation Plan will be used as an essential tool to update the SSMP. Mitigation actions that are preparedness and response in nature will be analyzed for applicability and inclusion in the description of SSMP processes and procedures.</p>			
Updated	2023	Hazards Addressed	Climate Change, Dam and Levee Failure, Drought, Earthquake, Flood, Landslide, Sea Level Rise, Severe Weather, Tsunami, Wildfire
Climate Action Plan			
<p>The Climate Action Plan guides WCW in reaching its environmental goals, including becoming a carbon-neutral organization. It supports WCW's commitment to environmental stewardship, conservation, recycling/reuse of resources, environmentalism, and sustainable practices.</p> <p>Expansion, Implementation, and Improvement: This Hazard Mitigation Plan will support mitigation measures compatible with the District's Climate Action Plan to reduce the impact of hazards caused or worsened by a changing climate including, but not limited to, severe heat, drought, and wildfire smoke.</p>			
Updated	2019	Hazards Addressed	Climate Change, Dam and Levee Failure, Drought, Earthquake, Flood, Landslide, Sea Level Rise, Severe Weather, Tsunami, Wildfire



5.2. Administrative and Technical Capabilities

The administrative and technical capabilities include community (i.e., public and private) staff and their skills and tools, which can be used for mitigation planning and implementation. This capability includes engineers, planners, emergency managers, GIS analysts, building inspectors, grant writers, and floodplain managers. Small communities may rely on other government entities, such as counties or special districts, for resources. These capabilities may be used to support mitigation activities. **Table 4** lists administrative and technical capabilities.

Table 4. Administrative and Technical Capabilities

Geographic Information System	
Geographic Information Systems (GIS) provide complex mapping and data management of WCW facilities, land use and potential hazards. Supports visualization of complex data sets using geo-location and data correlation.	
Expansion and Improvement: Acquire and conduct training for GIS technicians on the latest versions of ArcGIS.	
Department	West County Wastewater District (Planning and Support Services Division)
Planners, Engineers	
The planners and engineers are trained in building and/or infrastructure construction practice, natural hazards, and can respond in an emergency. Additionally, planners and engineers are capable of implementing or working with engineering professionals to implement projects identified in the Hazard Mitigation Plan.	
Expansion and Improvement: Provide opportunities for continued education to planners and engineers to maintain state of the art knowledge of new code and regulatory requirements. Continue to have WCW engineers and other Planning and Support Services staff provide input to support the analysis of potential losses due to hazards and mitigation actions.	
Department	West County Wastewater District (Planning and Support Services Division)
Grant Writers	
Grant writers provide grant research, writing, legislative advocacy, post-award management for WCW, and training in benefit/cost analysis.	
Expansion and Improvement: Provide opportunities for continued education to staff to maintain state of the art knowledge of all grant programs and opportunities regarding hazard mitigation.	
Department	West County Wastewater District (Admin Services Department)
Public Information Officer	
The Public Information Officer (PIO) provides public and media information regarding WCW's disaster response, mitigation, and recovery efforts.	
Expansion and Improvement: Continue to use PIOs to promote awareness of this Hazard Mitigation Plan and activities associated with individual mitigation projects as they are implemented.	
Department	West County Wastewater District (Office of the General Manager)

5.3. Financial Resources

Table 5 contains a list of financial capabilities available to WCW. These financial resources may be used to support mitigation activities based on procedures for each resource.



Table 5. Financial Resources

General Fund	
<p>WCW's General Fund Consists of sewer service charges, property tax, and fees, as applicable, that can be used for general purposes.</p> <p>Expansion and Improvement: Hazard mitigation projects may be considered during the annual budgeting process for funding from the General Fund.</p>	
Administrator	West County Wastewater District (Finance Division)
Capital Improvement Fund	
<p>The capital improvement fund is used for capital rehabilitation, renovation, improvement, and/or maintenance of assets at the discretion of the WCW's Board of Directors.</p> <p>Expansion and Improvement: Focus capital improvement funds on projects that provide mitigation to natural hazards.</p>	
Administrator	West County Wastewater District (Finance Division)
Sewer Service Charge Fees	
<p>The Sewer Service Charge (SSC) is the primary source of revenue for operating and capital expenditures for the collection and treatment of wastewater. WCW sets SSC rates based on the reasonable cost of providing service to WCW customers. This SSC charge is collected from all customers along with property taxes on each parcel's property tax, and it is essential to protect the public health and safety of the community and water and wildlife of the San Pablo Bay.</p> <p>Expansion and Improvement: Focus SSC funds on projects that provide mitigation to natural hazards.</p>	
Administrator	West County Wastewater District (Finance Division)
General Obligation Bonds	
<p>General Obligation Bonds are a form of long-term borrowing in which the State issues municipal securities and pledges its full faith and credit to their repayment. Bonds are repaid over many years through semi-annual debt service payments. The California Constitution requires that General Obligation Bonds be approved by a majority vote of the public and sets repayment of General Obligation Bonds debt before all other obligations of the state except those for the public school system and public institutions of higher education.</p> <p>Expansion and Improvement: Hazard mitigation projects may be considered during the annual budgeting process for funding from the General Obligation Bonds.</p>	
Administrator	West County Wastewater District (Finance Division)
Revenue Bonds	
<p>Revenue Bonds, a type of municipal bond, are typically repaid with revenues of WCW, primarily with sewer service charges. It is a security that provide capital for WCW</p> <p>Expansion and Improvement: Revenue Bonds can be used on projects that provide mitigation to natural hazards.</p>	
Administrator	West County Wastewater District (Finance Division)



Community Development Block Grant	
<p>The Community Development Block Grant (CDBG) Program provides funding for eligible senior activities such as in-home care, art classes, counseling, and home-delivered meals. The United States Department of Housing and Urban Development (HUD) also provides Disaster Recovery Assistance in the form of flexible grants to help cities, counties, and states recover from Presidentially Declared Disasters, especially in low-income areas, subject to the availability of supplemental appropriations.</p> <p>Expansion and Improvement: Where applicable, CDBG should be used to fund mitigation projects that enhance the resiliency of low-income and underserved communities.</p>	
Administrator	United States Department of Housing and Urban Development, West County Wastewater District (Finance Division)
Hazard Mitigation Grant Program	
<p>The Hazard Mitigation Grant Program (HMPG) provides support for post-disaster mitigation plans and projects.</p> <p>Expansion and Improvement: Train staff on notice of intent (NOI) procedures and track opportunities on the Cal OES mitigation website to initiate applications for grant funding.</p>	
Administrator	Federal Emergency Management Agency, West County Wastewater District (Finance Division)
Building Resilient Infrastructure and Communities	
<p>Building Resilient Infrastructure and Communities (BRIC) provides support for pre-disaster mitigation plans and projects.</p> <p>Expansion and Improvement: Train staff on notice of intent (NOI) procedures and track opportunities on the Cal OES mitigation website to initiate applications for grant funding.</p>	
Administrator	Federal Emergency Management Agency, West County Wastewater District (Finance Division)
Flood Mitigation Assistance Grant Program	
<p>The Flood Mitigation Assistance (FMA) Grant Program mitigates structures and infrastructure with repetitive losses.</p> <p>Expansion and Improvement: Train staff on notice of intent (NOI) procedures and track opportunities on the California OES mitigation website to initiate applications for grant funding.</p>	
Administrator	Federal Emergency Management Agency, West County Wastewater District (Finance Division)

5.4. Education and Outreach Capabilities

Table 6 lists WCW's education and public outreach capabilities. These capabilities include fire safety programs, hazard awareness campaigns, public information, and communications offices. Education and outreach capabilities can be used to inform the public about current and potential mitigation activities.



Table 6. Education and Outreach Resources

WCW Social Media Accounts	
Facebook: https://www.facebook.com/WestCountyWD/ X (formerly Twitter): https://twitter.com/WestCountyWD/ LinkedIn: https://www.linkedin.com/company/west-county-wastewater-district	
WCW uses its social media accounts to post information to collect input on updating this Hazard Mitigation Plan. These social media accounts can have links to other WCW webpages that provide details on mitigation projects and activities. They can also provide information and links to County, State and Federal emergency preparedness sites that provide information on individual and family preparedness.	
Expansion and Improvement: Develop a comprehensive program to utilize social media to reach out to communities in WCW’s service area to provide information on emergency preparedness and response, and mitigation activities.	
Lead Organization	West County Wastewater District (Office of the General Manager)

6. HAZARD MITIGATION PLAN INTEGRATION

The information on hazards, risk, vulnerability, and mitigation contained in this Hazard Mitigation Plan is based on the best available data at the time of the Plan update. Plan integration consists of the incorporation of hazard mitigation into other relevant planning mechanisms (e.g., general planning and capital improvement planning). It includes the integration of natural hazard information and mitigation policies, principles, and actions into local planning mechanisms and vice versa. Additionally, plan integration is achieved through the involvement of key staff and community officials in collaborative hazard mitigation planning.

6.1. Existing Plan Integration

WCW did not participate in the previous iteration of the Contra Costa County Hazard Mitigation Plan.

6.2. Potential Future Integration

As the Hazard Mitigation Plan is implemented, WCW will use information from the Plan as the best available science and data on hazards. The capability assessment presented in Section 5 of this Annex identifies codes, plans, and programs that provide opportunities for integration. The countywide and local action plans developed for this Hazard Mitigation Plan are related to plan integration. The capability assessment identified plans and programs, listed in **Table 7**, that do not currently integrate goals and recommendations of this Plan but provide opportunities to do so in the future.

Table 7. Potential Future Integration

Planning Initiative	Description
2024 Master Plan	10-year plan projecting long-term capital needs, considers risk reduction, operational optimization, environmentally sustainable operations, and regulatory compliance. The Plan is currently under development and information from this Hazard Mitigation Plan will be incorporated, as appropriate.

7. SIGNIFICANT HAZARD PAST EVENTS

A complete risk assessment, including past incidents, for each identified hazard of concern can be found in **Volume 1** of this Plan.



8. NATIONAL FLOOD INSURANCE PROGRAM

As a special district, the WCW is not eligible to participate in FEMA’s National Flood Insurance Program (NFIP). Further information on Contra Costa County’s NFIP and Community Rating System (CRS) participation is available on **Volume 1** of this Plan.

9. HAZARD VULNERABILITY AND IMPACT ASSESSMENT

Exposure and vulnerability to certain hazards affect the entire County and others are geographically defined. Although the entire County may be vulnerable to these hazards, their impacts may vary based on existing community conditions (e.g., underserved, or functional access needs populations may be more susceptible based on certain conditions, vulnerabilities, or needs).

A complete risk assessment for each identified hazard of concern is in **Volume 1** of this Plan. **Table 8** provides information on a several key vulnerabilities for WCW.

Table 8. Hazard Vulnerability and Impact Assessment

Hazards	Vulnerabilities and Impacts
<p>Climate Change</p>	<p>WCW faces unique vulnerabilities exacerbated by the impacts of climate change. Extreme weather events pose a significant threat, potentially overwhelming WCW’s wastewater infrastructure capacity and functionality. Severe storms, intense rainfall, and flooding can strain systems, leading to potential overflow or contamination risks.</p> <p>Moreover, the influence of climate change on wildfires directly impacts WCW’s infrastructure. Wildfires, driven by changing climate patterns, threaten facilities, pipelines, and treatment plants, disrupting operations and potentially compromising WCW’s ability to manage wastewater effectively.</p> <p>Additionally, rising sea levels present a direct threat to WCW’s treatment plants and low-lying facilities. As sea levels continue to increase, critical infrastructure faces the risk of inundation and damage, jeopardizing their operational integrity and resilience.</p> <p>Addressing these vulnerabilities requires proactive strategies, resilient infrastructure planning, and adaptable measures to mitigate the evolving risks posed by climate change. It is important to invest in resilient infrastructure and implement robust adaptation measures to ensure the continued functionality and reliability of WCW’s wastewater systems in the face of these climate-induced challenges.</p>



Hazards	Vulnerabilities and Impacts
<p>Dam and Levee Failure</p>	<p>WCW faces distinctive vulnerabilities when confronted with dam and levee failure events. These vulnerabilities significantly impact WCW's ability to maintain seamless wastewater treatment and management. The following factors highlight the specific risks we encounter:</p> <ol style="list-style-type: none"> 1. Dependency on Waterways: Many wastewater treatment facilities are situated near water bodies. A dam or levee failure upstream could result in a sudden influx of water, overwhelming treatment facilities and causing potential contamination or disruption of services. 2. Infrastructure Proximity: Treatment plants, pump stations, or storage facilities may be located in low-lying areas, making them susceptible to flooding in the event of dam or levee failure. This could damage critical equipment and disrupt operations, leading to service interruptions. 3. Risk of Contamination: Dam or levee failures can result in the mixing of untreated water with the wastewater system, causing potential contamination of treated water intended for discharge or reuse. This poses significant health and environmental risks. 4. Disruption to Operations: Any structural damage caused by a dam or levee failure can lead to significant downtime for repair and maintenance. This downtime could impact the treatment capacity, causing a backlog of untreated wastewater and potential environmental hazards. 5. Community Impact: Given the essential nature of wastewater treatment services, any disruption can have far-reaching consequences on public health, the environment, and local communities, amplifying the stakes of a dam or levee failure for WCW.
<p>Drought</p>	<p>WCW operates in a region prone to drought and faces unique susceptibility due to its heavy reliance on consistent water resources. Drought conditions directly impact District operations, leading to reduced water availability for processing and treatment purposes. This scarcity not only strains WCW's ability to effectively manage wastewater but also heightens the risk of environmental contamination due to the potential inadequacy of treatment processes under limited water conditions.</p> <p>Drought can also negatively impact Collection System Cleaning as some sewer cleaning equipment uses water. Regularly or inadequately cleaning the sewers can lead to sewer spills that contaminate the environment.</p> <p>Moreover, droughts exacerbate secondary risks such as the drying of vegetation and the accumulation of dry fuel supplies around WCW facilities. This circumstance significantly amplifies the threat of wildfires, endangering both WCW's infrastructure and surrounding communities. The potential for wildfires poses a severe risk to operational continuity and the safety of personnel, making drought conditions particularly concerning for WCW.</p>



Hazards	Vulnerabilities and Impacts
Earthquake	<p>WCW faces unique vulnerabilities when confronted with earthquakes, primarily due to the intricate network of underground assets, such as pipes and infrastructure, susceptible to displacement and damage during seismic activity. The seismic waves generated during an earthquake can cause significant movement and shifting of the underground pipes, leading to disruptions, leaks, and potential breaks in the system.</p> <p>Moreover, WCW's geographical location poses an added risk, with some of the critical assets positioned along earthquake fault lines. This proximity amplifies the threat to the treatment plants and facilities, making them more susceptible to direct impact or secondary damage caused by seismic disturbances.</p>
Flooding	<p>WCW's Treatment Plant is a vital infrastructure hub located at 2377 Garden Tract Road, Richmond, CA. It is strategically positioned between two (2) prominent water bodies, San Pablo Creek and Wildcat Creek, heightening WCW's vulnerability to flooding. This geographical centrality, while advantageous for accessibility, leaves us uniquely susceptible to the overflow and accumulation of water and debris during severe storms.</p> <p>The surrounding watershed, encompassing both San Pablo and Wildcat Creeks, serves as a primary catchment area for rainfall. However, during episodes of heavy and persistent rain, this watershed can quickly become inundated. The influx of excessive water coupled with debris accumulation poses a significant risk to the system's functionality and integrity.</p> <p>Moreover, the proximity of the nearby San Pablo Dam (San Pablo Reservoir) further exacerbates WCW's susceptibility to flooding events. In times of extreme weather, the dam's management and potential discharge of water increases the threat of overwhelming the infrastructure, disrupting service operations, and, in severe instances, leading to flooding. These factors combine to create a scenario where heavy, sustained rainfall in the watershed above San Pablo and Wildcat Creeks can easily overload WCW's system, resulting in service disruption and, at its most severe, posing a threat of flooding.</p>
Landslides	<p>WCW faces a distinctive vulnerability to landslides due to the geographic placement of critical infrastructure. Managing a network of 17 lift stations and maintaining approximately 253 miles of sewer pipe, a significant portion of WCW's essential assets rests upon hillsides, significantly heightening exposure to landslide risks during periods of intense rainfall.</p> <p>The precarious nature of these locations, coupled with the inherent instability caused by soil saturation, poses a substantial threat to the infrastructure. When heavy rainfall saturates the soil, it triggers a heightened risk of landslides. In turn, this instability endangers WCW's sewer pipes, substantially increasing the likelihood of pipe breaks. Such incidents could result in significant sewage spills, leading to environmental hazards and potential health risks to the community WCW serves.</p> <p>The combination of hillside placement and soil saturation renders WCW's infrastructure uniquely susceptible to the detrimental consequences of landslides.</p>



Hazards	Vulnerabilities and Impacts
<p>Sea Level Rise</p>	<p>Located at the heart of a delicate ecosystem between two (2) creeks and adjacent to the San Francisco Bay shoreline, the WCW Treatment Plant faces a distinctive susceptibility to the impending rise in sea levels. The imminent elevation of sea levels poses an imminent threat, significantly impacting the immediate shoreline, thereby triggering coastal flooding, erosion, and the gradual deterioration of vital infrastructure and pipelines.</p> <p>The proximity to these water bodies and the shoreline, integral to WCW's operations, unfortunately amplifies the vulnerability of the facility. As sea levels surge, the heightened risk of flooding and erosion becomes a critical concern, potentially compromising WCW's ability to sustain efficient wastewater treatment processes and maintain the integrity of the infrastructure.</p> <p>The joint ocean outfall shared between WCW and the City of Richmond stands as a critical infrastructure point yet faces an increasingly pressing vulnerability due to the escalating threat of sea level rise. Situated at the convergence of environmental responsibility and community welfare, this outfall plays a pivotal role in managing wastewater disposal, but its unique positioning renders it acutely susceptible to the encroaching impacts of rising sea levels. As ocean levels continue to surge, the infrastructure faces heightened risk, posing potential challenges to its operational efficiency and long-term viability. Recognizing and addressing this vulnerability is paramount, demanding proactive measures and collaborative efforts to fortify and adapt this essential infrastructure in the face of a changing climate.</p>



Hazards	Vulnerabilities and Impacts
<p>Severe Weather</p>	<p>WCW faces distinctive vulnerabilities when confronted with severe weather events. These vulnerabilities significantly impact WCW’s ability to maintain seamless wastewater treatment and management. The following factors highlight the specific risks we encounter:</p> <ol style="list-style-type: none"> 1. Heavy Rainfall Overloading Treatment Facilities and Sewer Pipes: Heavy rain poses a significant threat by overloading the treatment facilities. Excessive rainfall can inundate systems, leading to a surge in wastewater volume that exceeds WCW’s treatment capacity. This overload can strain the functionality of facilities and compromise the efficiency of treatment processes, potentially causing environmental issues. When sewer pipes are overloaded, the excess untreated sewage can overflow out of manholes and other sewer appurtenances and contaminate the surrounding environment. 2. Power Disruptions Caused by Wind: Strong winds have the potential to disrupt the power supply. WCW treatment facilities rely on electricity to function optimally. Any interruption in power could hinder WCW’s ability to treat wastewater effectively, leading to operational delays and potential environmental hazards. 3. Severe Wind Exacerbating Wildfire Risks: Severe wind not only poses a direct threat but also exacerbates the risk of wildfires. In such events, access to critical infrastructure, such as lift stations and sewer systems, becomes compromised. Wildfires can damage or block access to these essential components of WCW’s wastewater management, causing service interruptions and hindering the ability to conduct necessary maintenance and repairs. 4. Unique Vulnerable Population: WCW serves diverse communities, including underserved populations and areas with a high concentration of manufactured homes. These groups may be uniquely vulnerable during severe weather events, compromising their health and well-being.
<p>Tsunami</p>	<p>In the event of a tsunami, portions of WCW’s service area stand uniquely vulnerable due to its geographic positioning. The potential impact stems from the geographical layout of its facilities, notably the WCW Treatment Plant situated in proximity to the San Pablo shoreline.</p> <p>The vulnerability arises from the possibility of a substantial tsunami wave traversing into the San Francisco Bay beneath the Golden Gate Bridge. This occurrence could pose a direct threat to the critical infrastructure of WCW’s Treatment Plant. Given its proximity to the shoreline, the plant faces heightened exposure to the force and reach of such a wave, potentially leading to severe damage or disruption in operations.</p>



Hazards	Vulnerabilities and Impacts
<p>Wildfire</p>	<p>WCW serves as a critical pillar within the community's infrastructure, yet its unique vulnerability to wildfires presents a pressing concern. With ownership of 17 strategically positioned lift stations, several of which are nestled amidst grasslands and remote wooded hillsides, WCW's infrastructure faces a heightened risk during wildfire events.</p> <p>The potential impact on the community and essential infrastructure cannot be understated. Accessibility poses a primary challenge during wildfires, as these remote locations may become inaccessible to emergency response teams and maintenance crews. The threat of damaged equipment looms large, as the intense heat and flames can compromise the functionality of lift stations, impeding the crucial role in managing wastewater flow.</p> <p>This vulnerability places the continuity of WCW's services at risk, potentially leading to service disruptions that directly impact the community. The aftermath of a wildfire could result in prolonged service outages, hampering the quality of life for residents and posing environmental risks. Contaminated waterways and compromised sanitation systems could lead to widespread health hazards and environmental degradation.</p>
<p>Active Shooter Incident</p>	<p>Despite being a public agency primarily focused on managing wastewater, it's important to acknowledge the potential vulnerability WCW faces concerning an active shooter incident. While the likelihood of such an occurrence remains low, the nature of WCW operations—often in remote or less populated areas—poses unique challenges.</p> <p>Unlike traditional office settings, WCW's facilities encompass vast territories, including treatment plants, pipelines, and remote operational sites. These expansive areas, often unmanned or with limited personnel, could potentially offer an opportunity for an individual with malicious intent.</p> <p>Furthermore, WCW's commitment to public service mandates that sites remain accessible, allowing necessary community access. While this accessibility is fundamental to WCW's mission, it also presents a challenge in terms of security measures and control, potentially making certain areas more susceptible.</p> <p>Given the critical nature of WCW's operations and the presence of hazardous materials, an active shooter incident could lead to significant environmental and public health risks, amplifying the potential consequences.</p>



Hazards	Vulnerabilities and Impacts
<p>Cybersecurity Threats</p>	<p>As a public agency managing wastewater, WCW’s operational systems and databases contain a wealth of critical and sensitive information vital to community health and safety. WCW’s unique position involves the stewardship of intricate electronic information networks, rendering WCW a prominent target for cyber attacks. The potential ramifications of such breaches are profound and multifaceted.</p> <p>Any infiltration into WCW’s systems could result in severe consequences, including but not limited to the compromise of essential networks, theft of sensitive data, and disruption to crucial wastewater management processes. The aftermath of a cyber attack extends beyond immediate damage, imposing substantial recovery and rebuilding costs, both in terms of financial resources and organizational credibility.</p> <p>Given the inherent interconnectedness of WCW’s systems and the significance of the data it safeguards, any breach could not only disrupt operations but also pose potential risks to the larger community and environmental welfare.</p>
<p>Hazardous Materials Incidents</p>	<p>At WCW’s Treatment Plant, operations involve the storage and utilization of various chemicals integral to the treatment processes. This reliance on chemicals presents a unique vulnerability as any inadvertent spill or release could pose significant hazards to the well-being of employees, the surrounding community, and the environment at large. The potential impact of such incidents not only jeopardizes the safety and health of the workforce but also extends to the local ecosystem, water sources, and the broader community.</p>
<p>Terrorism</p>	<p>As a public agency focused on wastewater treatment, the organization faces unique vulnerabilities to potential terrorist activities. While the likelihood of such attacks remains low, the implications of a disruption to wastewater treatment operations due to a deliberate act of terrorism are substantial.</p> <p>WCW’s role in managing and treating wastewater for the community puts WCW at the nexus of critical infrastructure, making WCW a potential target for those seeking to disrupt public services. A terrorist attack on WCW Treatment Plant could result in severe consequences, including the contamination of water supplies, environmental damage, and significant disruptions in essential services to the public.</p>
<p>Utility Interruptions</p>	<p>WCW’s wastewater infrastructure operates on a delicate balance, highly reliant on uninterrupted utility services. Extended disruptions in these utilities could trigger a domino effect, resulting in critical equipment and process failures within the system. This, in turn, could precipitate a severe consequence - the potential for sewage backflow into residential and commercial properties.</p> <p>Furthermore, it poses an imminent risk of untreated sewage discharge into adjacent water bodies, compromising environmental integrity and public health. WCW’s unique vulnerability to utility interruptions underscores the urgent need to safeguard against such disruptions to prevent catastrophic repercussions on both community welfare and environmental sustainability.</p>

9.1. FEMA National Risk Index

In the National Risk Index (NRI), risk is defined as the potential for negative impacts as a result of a natural hazard. The Risk Index is based on three (3) components – a natural hazards component (Expected Annual Loss), a consequence enhancing component (Social Vulnerability), and a consequence reduction component (Community Resilience). Using these components, the composite



and hazard type Risk Index values are calculated for each community (county and Census Tract). Risk Index values form an absolute basis for measuring Risk within the NRI and are used to generate Risk Index percentiles and ratings across communities.¹ **Table 9** illustrates the Risk Index rating and score for the WCW planning area boundary.

Note: ArcGIS mapping analysis was performed utilizing Census Tract data by overlaying Census Tracts with the WCW planning area boundary. The information outlined in this section includes data from the Census Tracts that intersect the jurisdiction.

Table 9. Risk Index Score (FEMA National Risk Index)

Jurisdiction	Rating	Score
West County Wastewater District	Very High	88.4

Risk Index scores are calculated using an equation that combines scores for Expected Annual Loss due to natural hazards, Social Vulnerability and Community Resilience (Expected Annual Loss x Social Vulnerability / Community Resilience = Risk Index).

9.1.1. Expected Annual Loss

The FEMA NRI Expected Annual Loss (EAL), the natural hazards component of the NRI, represents the average economic loss in dollars resulting from natural hazards each year. It is calculated for each hazard type and quantifies loss for relevant consequence types – buildings, people, and agriculture. The EAL score and rating represent a community's relative level of expected losses each year when compared to all other communities at the same level. Since the score is associated to a community's risk; the higher EAL score results in a higher Risk Index score.² **Table 10** illustrates each hazard EAL for the WCW planning area boundary.

Table 10. Expected Annual Loss (FEMA National Risk Index)

Hazard	Population Equivalence	Building Value	Agriculture Value	Total Expected Annual Loss	Expected Annual Loss Score	Rating
Coastal Flooding (Sea Level Rise)	\$1	\$709	n/a	\$711	15.4	Very Low
Drought	n/a	n/a	\$18	\$18	3.9	Very Low
Earthquake	\$773,552	\$1.5 Million	n/a	\$2.2 Million	96.3	Very High
Hail (Severe Weather)	\$25	\$71	\$0	\$96	16.7	Very Low
Heat Wave (Severe Weather)	\$11,298	\$1	\$0	\$11,300	54.9	Relatively Moderate
Landslide	\$67	\$371	n/a	\$437	44.5	Relatively Moderate
Riverine Flooding (Flood)	\$28,354	\$15,950	\$0	\$44,304	48.6	Relatively Moderate

¹ Federal Emergency Management Agency. (2023). Determining Risk. Retrieved from <https://hazards.fema.gov/nri/determining-risk>.

² Federal Emergency Management Agency. (2023). Expected Annual Loss. Retrieved from <https://hazards.fema.gov/nri/expected-annual-loss>.



Hazard	Population Equivalence	Building Value	Agriculture Value	Total Expected Annual Loss	Expected Annual Loss Score	Rating
Strong Winds (Severe Weather)	\$60	\$16	\$0	\$76	5.0	Very Low
Tornado (Severe Weather)	\$1,033	\$1,832	\$0	\$2,865	8.5	Very Low
Tsunami	\$0	\$49	n/a	\$50	9.0	Very Low
Wildfire	\$178	\$4,217	\$0	\$4,395	43.9	Relatively Moderate

Expected annual loss scores are calculated utilizing an equation that combines values for exposure, annualized frequency, and historic loss ratios (Expected Annual Loss = Exposure x Annualized Frequency x Historic Loss Ratio).

An EAL score and rating is calculated independently for each consequence type (i.e., buildings, population, and agriculture) for each county and Census Tract. The population EAL is measured in fatalities and injuries while the building and agriculture values are measured in dollars. However, for consistency in the unit of measurement, the population EAL was monetized into population equivalence using a value of statistical life (VSL) approach where each fatality or 10 injuries is treated as \$11.6 Million of economic loss.

9.1.2. Social Vulnerability

Social vulnerability, the consequence enhancing risk component of the NRI, measures the susceptibility of social groups to the adverse impacts of natural hazards, including disproportionate death, injury, loss, or disruption of livelihood. The Social Vulnerability score and rating represent the relative level of a community’s social vulnerability compared to all other communities at the same level. A higher Social Vulnerability score results in a higher Risk Index score.³ **Table 11** illustrates the Social Vulnerability rating and score for the WCW planning area boundary.

Table 11. Social Vulnerability (FEMA National Risk Index)

Jurisdiction	Rating	Score
West County Wastewater District	Relatively High	72.9

Social Vulnerability is measured using the Social Vulnerability Index (SoVI) published by the University of South Carolina’s Hazards and Vulnerability Research Institute (HVRI).

9.1.3. Community Resilience

Community resilience, the consequence reduction risk component, measures the ability of a community to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions. The Community Resilience score and rating represent the relative level of a community’s resilience compared to all other communities at the same level. Since the score is inversely proportional to a community’s risk; the higher Community Resilience score results in a lower Risk Index score.⁴ **Table 12** illustrates the Community Resilience rating and score for the WCW planning area boundary.

³ Federal Emergency Management Agency. (2023). Social Vulnerability. Retrieved from <https://hazards.fema.gov/nri/social-vulnerability>.

⁴ Federal Emergency Management Agency. (2023). Community Resilience. Retrieved from <https://hazards.fema.gov/nri/community-resilience>.



Table 12. Community Resilience (FEMA National Risk Index)

Jurisdiction	Rating	Score
West County Wastewater District	Relatively High	66.4

Community Resilience is measured using the Baseline Resilience Indicators for Communities (HVRI BRIC) published by the University of South Carolina's Hazards and Vulnerability Research Institute (HVRI).

9.1.4. Annualized Frequency

Annualized frequency is defined as the expected frequency or probability of a hazard occurrence per year. It is a natural hazard incidence factor for Expected Annual Loss, the natural hazards component of the National Risk Index. A higher annualized frequency value results in higher Expected Annual Loss and Risk Index scores. The annualized frequency is derived from either the number of recorded hazard occurrences each year over a given period or the modeled probability of a hazard occurrence each year (e.g., earthquake).⁵ **Table 13** outlines the annualized frequency for each hazard, based on FEMA NRI data, for the WCW planning area boundary.

Table 13. Hazard Annualized Frequency (FEMA National Risk Index)

Hazard	Period of Record	Events on Record	Annualized Frequency
Coastal Flooding (Sea Level Rise)	Various datasets	n/a	0.3 events per year
Drought	22 years	988	44.9 events per year
Earthquake	2021 dataset	n/a	0.010% chance per year
Hail (Severe Weather)	34 years	1	0.0 events per year
Heat Wave (Severe Weather)	16 years	26	1.7 events per year
Landslide	12 years	0	0.0 events per year
Riverine Flooding (Flood)	24 years	31	1.0 events per year
Strong Winds (Severe Weather)	34 years	2	0.0 events per year
Tornado (Severe Weather)	72 years	0	0.0 events per year
Tsunami	222 years	0	0.0 events per year
Wildfire	2021 dataset	n/a	0.0% events per year

10. HAZARD RISK RANKING

Table 14 presents the local hazard ranking for WCW of all hazards of concern listed in **Volume 1** of this Plan. This ranking summarizes how hazards vary for this jurisdiction. As described in detail in **Volume 1**, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property, and the economy.

⁵ Federal Emergency Management Agency. (2023). Annualized Frequency. Retrieved from <https://hazards.fema.gov/nri/annualized-frequency>.



Table 14. Hazard Risk Ranking

Hazard Event	Probability Factor	Sum of Weighted Extent Factors	Sum of Weighted Vulnerability Factors	Sum of Weighted Impact Factors	Consequence Score	Total Risk Score (Probability x Consequence)
Earthquake	2	18	17	36	71	68
Landslide	3	9	9	23	41	60
Dam and Levee Failure	2	12	14	33	59	58
Heavy Rainfall (Severe Weather)	3	9	14	16	39	57
Flood (Riverine/Creek)	2	15	12	31	58	57
Flood (Urban/Flash Flood)	2	15	12	30	57	56
Utility Interruptions	3	9	7	22	38	56
Wildfire	2	12	12	31	55	54
Severe Thunderstorm (Severe Weather)	3	6	16	14	36	54
High Winds/ Damaging Winds (Severe Weather)	3	9	11	16	36	54
Hazardous Materials Incidents	2	15	14	25	54	54
Heat Wave/Extreme Heat	3	9	10	15	34	51
Drought	2	6	12	20	38	40
Climate Change	2	9	12	15	36	38
Cybersecurity Threats	2	12	7	13	32	34
Sea Level Rise	2	12	5	13	30	32
Terrorism (Weapons of Mass Destruction)	1	18	14	27	59	32
Active Shooter Incidents	2	9	5	15	29	32
Tsunami	1	12	5	16	33	20



Hazard Event	Probability Factor	Sum of Weighted Extent Factors	Sum of Weighted Vulnerability Factors	Sum of Weighted Impact Factors	Consequence Score	Total Risk Score (Probability x Consequence)
Tornado (Severe Weather)	1	6	6	14	26	16

Consequence: Sum of all weighted factors.
Extent: Sum of the weighted Extent factors.
Vulnerability: Sum of the weighted Vulnerability factors.

Impact: Sum of the weighted Impact factors.
Total Risk Score* = Probability x Consequence
 * Normalized to 100

Total Risk Score Legend

Classification	Probability Factor	Extent	Vulnerability	Impact	Consequence Score	Total Risk Score
Low (L)	1	0 – 6	0 – 6	0 – 12	0 – 24	0 – 24
Medium (M)	2	7 – 12	7 – 12	13 – 26	25 – 50	25 – 54
High (H)	3	13 – 18	13 – 18	27 – 39	51 – 75	55 and above

The **legend**—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The **Consequence Score** represents the sum of the Extent, Vulnerability, and Impact Factors. The **Total Risk Score** is a measure of Probability and Consequence.



11. MITIGATION ACTIONS

This section includes the mitigation actions that were developed to address identified risks and vulnerabilities to hazards identified in this Plan. This Plan serves only to recommend mitigation measures based on the potential for risk reduction and available funding. Implementation of mitigation actions is dependent on risk reduction priorities, feasibility, and available funding. It is also dependent on the cooperation and support of the jurisdiction and/or department responsible for each action item.

WCW agreed upon **28** mitigation actions that apply to the jurisdiction’s properties where they have jurisdictional responsibility and authority. WCW did not participate in the previous reiteration of the Contra Costa County Hazard Mitigation Plan; therefore, all mitigation actions are new. A summary of WCW’s mitigation actions status is listed in **Table 15**.

Table 15. West County Wastewater District Mitigation Actions Summary

Status		Mitigation Action Total	
Ongoing		0	
In Progress/In Work		0	
Not Started		0	
Delayed/Deferred		0	
New		28	
TOTAL		28	
Completed		0	
Deleted/No Longer Needed		0	
Mitigation Actions per Hazard			
Climate Change	19	Landslide	11
Dam and Levee Failure	4	Sea Level Rise	9
Drought	6	Severe Weather	21
Earthquake	23	Tsunami	4
Flood	13	Wildfire	4
Other Hazards of Concern: Active Shooter Incidents (1), Cybersecurity Threats (2), Hazardous Materials Incidents (1), Terrorism (1), Utility Interruptions (1)			

These shared actions, some of which address all hazards, help to meet the following requirements:

- Does the Plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure?
- Does the Plan include one (1) or more action(s) per jurisdiction for each hazard identified within the risk assessment?

A detailed explanation of the Mitigation Strategy can be found in Chapter 5 of **Volume 1**.

2024 Hazard Mitigation Plan **(DRAFT)**
 Contra Costa County, California



Mitigation Action	Plan, design, and implement nature-based shoreline infrastructure, and an associated environmental center supporting environmental education and public outreach programs. The effort is looking at placing a horizontal levee at Wildcat Marsh, adjacent to the Bay Trail in partnership with WCW and the San Francisco Bay Restoration Authority.				
Action Number	WCW-1	Year Initiated	2025	Prioritization Score	32/40
Goal(s) / Objective(s) Addressed	Goals: 1, 2, 3, 4, 5		Hazard(s) Mitigated	Climate Change, Dam and Levee Failure, Flood, Sea Level Rise	
Project Status	New	If Deleted/No Longer Needed, provide reason.		N/A	
Benefits <i>(Loss Avoided)</i>	High				
Lead Agency / Organization	West County Wastewater District (Environmental Compliance, Planning and Support Services)		Supporting Agency / Organization <i>(If applicable)</i>	N/A	
Additional Participating Jurisdictions <i>(If applicable)</i>	N/A				
Project Duration	Long Term		Estimated Cost	High	
Potential Funding Source	State Special Funds, Other		If <i>Other</i> , you must identify a funding source.	Environmental Protection Agency (EPA) Funds, NOAA Fund (through the State Coastal Conservancy), United States Army Corp of Engineers (USACE) Fund	
			Please provide further detail on Potential Funding Source.	San Francisco Bay Restoration Authority (SFBRA) Measure AA Fund	
Implementation Priority	High	Integration Ideas <i>(Optional)</i>			

2024 Hazard Mitigation Plan **(DRAFT)**
 Contra Costa County, California



Mitigation Action	Design and build influent pump upgrades, improve grit system, dual gravity belt thickeners, electric blowers, digester construction, sludge dewatering, cogeneration improvements, thermal sludge drying system, solar generation at the Water Quality and Resource Recovery Plant (WQRRP) and lift stations, LED upgrades at Hilltop and the WQRRP, electric vehicle charging stations, and expansion of equalization basins.				
Action Number	WCW-2	Year Initiated	2024	Prioritization Score	34/40
Goal(s) / Objective(s) Addressed	Goals: 1, 2, 3, 4, 5		Hazard(s) Mitigated	Climate Change, Earthquake, Severe Weather, Tsunami, Sea Level Rise	
Project Status	New	If Deleted/No Longer Needed, provide reason.		N/A	
Benefits <i>(Loss Avoided)</i>	Medium				
Lead Agency / Organization	West County Wastewater District	Supporting Agency / Organization <i>(If applicable)</i>		N/A	
Additional Participating Jurisdictions <i>(If applicable)</i>	N/A				
Project Duration	Short Term	Estimated Cost		Medium	
Potential Funding Source	Local Budgeted Funds	If Other, you must identify a funding source.		N/A	
		Please provide further detail on Potential Funding Source.		General Fund (Staff Time)	
Implementation Priority	High	Integration Ideas <i>(Optional)</i>			



Mitigation Action	Evaluate the Hilltop main office facilities for maintenance, repairs, and space optimization to guarantee structural integrity. Continual updates and maintenance are essential to create a clean, professional, and secure workspace for WCW's staff.				
Action Number	WCW-3	Year Initiated	2026	Prioritization Score	32/40
Goal(s) / Objective(s) Addressed	Goals: 1, 2, 3, 5		Hazard(s) Mitigated	Earthquake	
Project Status	New	If Deleted/No Longer Needed, provide reason.		N/A	
Benefits <i>(Loss Avoided)</i>	Medium				
Lead Agency / Organization	West County Wastewater District	Supporting Agency / Organization <i>(If applicable)</i>		N/A	
Additional Participating Jurisdictions <i>(If applicable)</i>	N/A				
Project Duration	Short Term	Estimated Cost		Medium	
Potential Funding Source	Local Budgeted Funds	If Other, you must identify a funding source.		N/A	
		Please provide further detail on Potential Funding Source.		General Fund (Staff Time)	
Implementation Priority	High	Integration Ideas <i>(Optional)</i>			



Mitigation Action	Enhance and preserve spaces to ensure a hygienic, professional, and secure work environment for WCW's staff in the New Maintenance Building for the Water Quality and Resource Recovery Department's Maintenance Division.				
Action Number	WCW-4	Year Initiated	2024	Prioritization Score	32/40
Goal(s) / Objective(s) Addressed	Goals: 1, 2		Hazard(s) Mitigated	Climate Change, Earthquake, Flood	
Project Status	New	If Deleted/No Longer Needed, provide reason.		N/A	
Benefits <i>(Loss Avoided)</i>	Medium				
Lead Agency / Organization	West County Wastewater District		Supporting Agency / Organization <i>(If applicable)</i>	N/A	
Additional Participating Jurisdictions <i>(If applicable)</i>	N/A				
Project Duration	Long Term		Estimated Cost	Medium	
Potential Funding Source	Local Budgeted Funds		If <i>Other</i> , you must identify a funding source.	N/A	
			Please provide further detail on Potential Funding Source.	General Fund (Staff Time)	
Implementation Priority	High	Integration Ideas <i>(Optional)</i>			

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 Contra Costa County, California



Mitigation Action	Design and build an innovative Training Facility at the Water Quality and Resource Recovery Plant (WQRRP), dedicated to an Environmental Center. The purpose of this establishment is to educate the public about energy conservation initiatives and the wastewater treatment process implemented at the WQRRP.				
Action Number	WCW-5	Year Initiated	2030	Prioritization Score	32/40
Goal(s) / Objective(s) Addressed	Goals: 1, 2, 3, 4, 5		Hazard(s) Mitigated	Earthquake, Drought, Earthquake, Flood, Sea Level Rise, Severe Weather, Tsunami	
Project Status	New	If Deleted/No Longer Needed, provide reason.		N/A	
Benefits <i>(Loss Avoided)</i>	Medium				
Lead Agency / Organization	West County Wastewater District	Supporting Agency / Organization <i>(If applicable)</i>		N/A	
Additional Participating Jurisdictions <i>(If applicable)</i>	N/A				
Project Duration	Long Term	Estimated Cost		Medium	
Potential Funding Source	Local Budgeted Funds	If Other, you must identify a funding source.		N/A	
		Please provide further detail on Potential Funding Source.		General Fund (Staff Time)	
Implementation Priority	High	Integration Ideas <i>(Optional)</i>			



Mitigation Action	The proposed Lakeside Force Main Replacement Project involves replacing the current 1,578 8-inch ductile iron pipe with two (2) parallel force mains. The purpose of this Project is to enhance the reliability of WCW's collection system by minimizing inflow and infiltration issues, thereby significantly reducing the risk of critical infrastructure failures.				
Action Number	WCW-6	Year Initiated	2026	Prioritization Score	32/40
Goal(s) / Objective(s) Addressed	Goals: 1, 2, 3, 4, 5		Hazard(s) Mitigated	Climate Change, Drought, Earthquake, Flood, Landslide	
Project Status	New	If Deleted/No Longer Needed, provide reason.		N/A	
Benefits <i>(Loss Avoided)</i>	High				
Lead Agency / Organization	West County Wastewater District	Supporting Agency / Organization <i>(If applicable)</i>		N/A	
Additional Participating Jurisdictions <i>(If applicable)</i>	N/A				
Project Duration	Long Term	Estimated Cost		Medium	
Potential Funding Source	Local Budgeted Funds	If Other, you must identify a funding source.		N/A	
		Please provide further detail on Potential Funding Source.		General Fund (Staff Time)	
Implementation Priority	High	Integration Ideas <i>(Optional)</i>			



Mitigation Action	The proposed Hilltop Green Force Main Replacement Project involves designing and construction of a new 1,000 linear feet force mains to fortify the existing connections. The purpose of this Project is to enhance the reliability of WCW’s collection system by minimizing inflow and infiltration issues, thereby significantly reducing the risk of critical infrastructure failures.				
Action Number	WCW-7	Year Initiated	2030	Prioritization Score	32/40
Goal(s) / Objective(s) Addressed	Goals: 1, 2, 3, 4, 5		Hazard(s) Mitigated	Climate Change, Earthquake, Flood, Landslide	
Project Status	New	If Deleted/No Longer Needed, provide reason.		N/A	
Benefits <i>(Loss Avoided)</i>	High				
Lead Agency / Organization	West County Wastewater District	Supporting Agency / Organization <i>(If applicable)</i>		N/A	
Additional Participating Jurisdictions <i>(If applicable)</i>	N/A				
Project Duration	Long Term	Estimated Cost		Medium	
Potential Funding Source	Local Budgeted Funds	If <i>Other</i> , you must identify a funding source.		N/A	
		Please provide further detail on Potential Funding Source.		General Fund (Staff Time)	
Implementation Priority	High	Integration Ideas <i>(Optional)</i>			



Mitigation Action	The proposed force main assessment and replacement, covering approximately 26,200 linear feet across up to 13 locations. The locations to include, but are not limited to, Tara Hills, Atlas, Pinole Center, Fitzgerald, Carriage Hills, La Honda, D'Avila, Parchester, and Point Pinole. This initiative is aimed at enhancing the reliability of WCW's collection system by minimizing inflow and infiltration issues, thereby significantly reducing the risk of critical infrastructure failures.				
Action Number	WCW-8	Year Initiated	2024	Prioritization Score	32/40
Goal(s) / Objective(s) Addressed	Goals: 1, 2, 3, 4, 5		Hazard(s) Mitigated	Climate Change, Dam and Levee Failure, Drought, Earthquake, Landslide, Sea Level Rise, Severe Weather, Wildfire	
Project Status	New		<i>If Deleted/No Longer Needed, provide reason.</i>	N/A	
Benefits <i>(Loss Avoided)</i>	Medium				
Lead Agency / Organization	West County Wastewater District		Supporting Agency / Organization <i>(If applicable)</i>	N/A	
Additional Participating Jurisdictions <i>(If applicable)</i>	N/A				
Project Duration	Long Term		Estimated Cost	Medium	
Potential Funding Source	Local Budgeted Funds		<i>If Other, you must identify a funding source.</i>	N/A	
			Please provide further detail on Potential Funding Source.	General Fund (Staff Time)	
Implementation Priority	High	Integration Ideas <i>(Optional)</i>			



Mitigation Action	The Foster Lane Sewer Realignment Project involves the demolition of the Foster Lane lift station and the installation of 360 linear feet of 8-inch gravity sewer pipe. The purpose of this Project is to mitigate odor concerns within the local community by decommissioning a temporary lift station that has been in operation for approximately 30 years.				
Action Number	WCW-9	Year Initiated	2024	Prioritization Score	32/40
Goal(s) / Objective(s) Addressed	Goals: 1, 2, 3, 4, 5		Hazard(s) Mitigated	Climate Change, Earthquake, Landslide, Severe Weather, Wildfire	
Project Status	New	If Deleted/No Longer Needed, provide reason.		N/A	
Benefits <i>(Loss Avoided)</i>	Medium				
Lead Agency / Organization	West County Wastewater District	Supporting Agency / Organization <i>(If applicable)</i>		N/A	
Additional Participating Jurisdictions <i>(If applicable)</i>	N/A				
Project Duration	Long Term	Estimated Cost		Medium	
Potential Funding Source	Local Budgeted Funds	If <i>Other</i> , you must identify a funding source.		N/A	
		Please provide further detail on Potential Funding Source.		General Fund (Staff Time)	
Implementation Priority	High	Integration Ideas <i>(Optional)</i>			



Mitigation Action	The Sewer Replacement Project on Chesley, Giaramita, and Rumrill, involves replacing approximately 21,000 linear feet of pipes in public streets and easements. The purpose of this Project is to enhance the condition and reliability of the collection system, effectively reducing the risk of sanitary sewer overflows and minimizing inflow and infiltration into the collection system.				
Action Number	WCW-10	Year Initiated	2025	Prioritization Score	32/40
Goal(s) / Objective(s) Addressed	Goals: 1, 2, 3, 4, 5		Hazard(s) Mitigated	Climate Change, Earthquake, Flood	
Project Status	New	If Deleted/No Longer Needed, provide reason.		N/A	
Benefits <i>(Loss Avoided)</i>	Medium				
Lead Agency / Organization	West County Wastewater District	Supporting Agency / Organization <i>(If applicable)</i>		N/A	
Additional Participating Jurisdictions <i>(If applicable)</i>	N/A				
Project Duration	Short Term		Estimated Cost	Medium	
Potential Funding Source	Local Budgeted Funds		If <i>Other</i> , you must identify a funding source.	N/A	
			Please provide further detail on Potential Funding Source.	General Fund (Staff Time)	
Implementation Priority	High	Integration Ideas <i>(Optional)</i>			

2024 Hazard Mitigation Plan **(DRAFT)**
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Mitigation Action	Enhance the gravity sewer system which involves targeting unidentified high inflow and infiltration pipes. This initiative focuses on replacing pipes situated in public streets and easements. The goal with this project is to enhance the overall state and reliability of the collection system, thereby minimizing the chances of sanitary sewer overflows.				
Action Number	WCW-11	Year Initiated	2024	Prioritization Score	32/40
Goal(s) / Objective(s) Addressed	Goals: 1, 2, 3, 4, 5		Hazard(s) Mitigated	Earthquake, Flood, Sea Level Rise	
Project Status	New	If Deleted/No Longer Needed, provide reason.		N/A	
Benefits <i>(Loss Avoided)</i>	Medium				
Lead Agency / Organization	West County Wastewater District	Supporting Agency / Organization <i>(If applicable)</i>		N/A	
Additional Participating Jurisdictions <i>(If applicable)</i>	N/A				
Project Duration	Short Term		Estimated Cost	Medium	
Potential Funding Source	Local Budgeted Funds		If Other, you must identify a funding source.	N/A	
			Please provide further detail on Potential Funding Source.	General Fund (Staff Time)	
Implementation Priority	High	Integration Ideas <i>(Optional)</i>			

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Mitigation Action	The San Pablo Sewer Replacement Project aims to replace approximately 4,465 linear feet of gravity line sewers. The purpose of this Project is to enhance the condition and dependability of the collection systems, ultimately decreasing the likelihood of sanitary sewer overflows, and reducing inflow and infiltration into the collection system.				
Action Number	WCW-12	Year Initiated	2024	Prioritization Score	32/40
Goal(s) / Objective(s) Addressed	Goals: 1, 2, 3, 4, 5		Hazard(s) Mitigated	Earthquake, Severe Weather	
Project Status	New	If Deleted/No Longer Needed, provide reason.		N/A	
Benefits <i>(Loss Avoided)</i>	Medium				
Lead Agency / Organization	West County Wastewater District	Supporting Agency / Organization <i>(If applicable)</i>		N/A	
Additional Participating Jurisdictions <i>(If applicable)</i>	N/A				
Project Duration	Short Term	Estimated Cost		Medium	
Potential Funding Source	Local Budgeted Funds	If <i>Other</i> , you must identify a funding source.		N/A	
		Please provide further detail on Potential Funding Source.		General Fund (Staff Time)	
Implementation Priority	High	Integration Ideas <i>(Optional)</i>			

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Mitigation Action	The Road 20 and Standard Avenue project involves the replacement of approximately 2,000 linear feet of gravity line sewers. The purpose of this Project is to elevate the condition and reliability of collection systems while minimizing the risks associated with sanitary sewer overflows, as well as inflow and infiltration into the collection system.				
Action Number	WCW-13	Year Initiated	2024	Prioritization Score	32/40
Goal(s) / Objective(s) Addressed	Goals: 1, 2, 3, 4, 5		Hazard(s) Mitigated	Climate Change, Earthquake, Severe Weather	
Project Status	New	If Deleted/No Longer Needed, provide reason.		N/A	
Benefits <i>(Loss Avoided)</i>	Medium				
Lead Agency / Organization	West County Wastewater District	Supporting Agency / Organization <i>(If applicable)</i>		N/A	
Additional Participating Jurisdictions <i>(If applicable)</i>	N/A				
Project Duration	Short Term		Estimated Cost	Medium	
Potential Funding Source	Local Budgeted Funds		If Other, you must identify a funding source.	N/A	
			Please provide further detail on Potential Funding Source.	General Fund (Staff Time)	
Implementation Priority	High	Integration Ideas <i>(Optional)</i>			

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Mitigation Action	Replacement of approximately 5,122 linear feet of El Sobrante's gravity line sewers. The purpose of this project is to enhance the condition and reliability of the collection systems, thereby mitigating the risk of sanitary sewer overflows and reducing inflow and infiltration into the collection system.				
Action Number	WCW-14	Year Initiated	2024	Prioritization Score	32/40
Goal(s) / Objective(s) Addressed	Goals: 1, 2, 3, 4, 5		Hazard(s) Mitigated	Earthquake, Landslide, Severe Weather	
Project Status	New	If Deleted/No Longer Needed, provide reason.		N/A	
Benefits <i>(Loss Avoided)</i>	Medium				
Lead Agency / Organization	West County Wastewater District	Supporting Agency / Organization <i>(If applicable)</i>		N/A	
Additional Participating Jurisdictions <i>(If applicable)</i>	N/A				
Project Duration	Short Term	Estimated Cost		Medium	
Potential Funding Source	Local Budgeted Funds	If Other, you must identify a funding source.		N/A	
		Please provide further detail on Potential Funding Source.		General Fund (Staff Time)	
Implementation Priority	High	Integration Ideas <i>(Optional)</i>			



Mitigation Action	La Paloma Odor Mitigation Project involves a comprehensive study to identify odors and flows, design engineered solutions for their elimination, and the assessment, design, and construction of a secondary force main alignment. The purpose of this Project is to pinpoint and eliminate any odors stemming from WCW's infrastructure on and near La Paloma Road, significantly reducing their impact on the surrounding community.				
Action Number	WCW-15	Year Initiated	2024	Prioritization Score	32/40
Goal(s) / Objective(s) Addressed	Goals: 1, 2, 3, 4, 5		Hazard(s) Mitigated	Earthquake, Landslide, Severe Weather	
Project Status	New	If Deleted/No Longer Needed, provide reason.		N/A	
Benefits <i>(Loss Avoided)</i>	Medium				
Lead Agency / Organization	West County Wastewater District	Supporting Agency / Organization <i>(If applicable)</i>	N/A		
Additional Participating Jurisdictions <i>(If applicable)</i>	N/A				
Project Duration	Short Term	Estimated Cost	Medium		
Potential Funding Source	Local Budgeted Funds	If Other, you must identify a funding source.	N/A		
		Please provide further detail on Potential Funding Source.	General Fund (Staff Time)		
Implementation Priority	High	Integration Ideas <i>(Optional)</i>			

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Mitigation Action	The D'Avila Lift Station is scheduled for electrical, mechanical, and/or structural upgrades, including the installation of a generator. These enhancements aim to improve the functionality and reliability of the lift station, minimize service disruptions, and lower the risks associated with equipment and infrastructure emergency failures.				
Action Number	WCW-16	Year Initiated	2024	Prioritization Score	32/40
Goal(s) / Objective(s) Addressed	Goals: 1, 2, 3, 4, 5		Hazard(s) Mitigated	Climate Change, Earthquake, Landslide, Severe Weather	
Project Status	New	If Deleted/No Longer Needed, provide reason.		N/A	
Benefits <i>(Loss Avoided)</i>	Medium				
Lead Agency / Organization	West County Wastewater District	Supporting Agency / Organization <i>(If applicable)</i>		N/A	
Additional Participating Jurisdictions <i>(If applicable)</i>	N/A				
Project Duration	Short Term		Estimated Cost	Medium	
Potential Funding Source	Local Budgeted Funds		If <i>Other</i> , you must identify a funding source.	N/A	
			Please provide further detail on Potential Funding Source.	General Fund (Staff Time)	
Implementation Priority	High	Integration Ideas <i>(Optional)</i>			



Mitigation Action	The Tara Hills Lift Station is set for electrical, mechanical, and/or structural upgrades, while retaining the existing generator. These improvements are intended to enhance the functionality and reliability of the lift station, minimize service disruptions and, lower the risks associated with equipment and infrastructure emergency failures.				
Action Number	WCW-17	Year Initiated	2026	Prioritization Score	32/40
Goal(s) / Objective(s) Addressed	Goals: 1, 2, 3, 4, 5		Hazard(s) Mitigated	Climate Change, Drought, Earthquake, Landslide, Severe Weather	
Project Status	New	If Deleted/No Longer Needed, provide reason.		N/A	
Benefits <i>(Loss Avoided)</i>	Medium				
Lead Agency / Organization	West County Wastewater District	Supporting Agency / Organization <i>(If applicable)</i>	N/A		
Additional Participating Jurisdictions <i>(If applicable)</i>	N/A				
Project Duration	Short Term	Estimated Cost	Medium		
Potential Funding Source	Local Budgeted Funds	If <i>Other</i> , you must identify a funding source.	N/A		
		Please provide further detail on Potential Funding Source.	General Fund (Staff Time)		
Implementation Priority	High	Integration Ideas <i>(Optional)</i>			

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Mitigation Action	The La Honda Lift Station will undergo electrical, mechanical, and/or structural upgrades, including the installation of a generator. These improvements are intended to enhance the functionality and reliability of the lift station, minimize service disruptions and, lower the risks associated with equipment and infrastructure emergency failures.				
Action Number	WCW-18	Year Initiated	2024	Prioritization Score	32/40
Goal(s) / Objective(s) Addressed	Goals: 1, 2, 3, 4, 5		Hazard(s) Mitigated	Climate Change, Earthquake, Landslide, Severe Weather	
Project Status	New	If Deleted/No Longer Needed, provide reason.		N/A	
Benefits <i>(Loss Avoided)</i>	Medium				
Lead Agency / Organization	West County Wastewater District	Supporting Agency / Organization <i>(If applicable)</i>		N/A	
Additional Participating Jurisdictions <i>(If applicable)</i>	N/A				
Project Duration	Short Term		Estimated Cost	Medium	
Potential Funding Source	Local Budgeted Funds		If <i>Other</i> , you must identify a funding source.	N/A	
			Please provide further detail on Potential Funding Source.	General Fund (Staff Time)	
Implementation Priority	High	Integration Ideas <i>(Optional)</i>			



Mitigation Action	Conduct comprehensive master planning and feasibility studies for capital projects which will assist in the development of specific and targeted capital projects.				
Action Number	WCW-19	Year Initiated	2024	Prioritization Score	32/40
Goal(s) / Objective(s) Addressed	Goals: 1, 2, 3, 4, 5		Hazard(s) Mitigated	Climate Change, Dam and Levee Failure, Drought, Earthquake, Flood, Landslide, Sea Level Rise, Severe Weather, Tsunami, Wildfire, Active Shooter Incidents, Cybersecurity Threats, Hazardous Materials Incidents, Terrorism, Utility Interruptions	
Project Status	New	If Deleted/No Longer Needed, provide reason.		N/A	
Benefits <i>(Loss Avoided)</i>	Medium				
Lead Agency / Organization	West County Wastewater District	Supporting Agency / Organization <i>(If applicable)</i>		N/A	
Additional Participating Jurisdictions <i>(If applicable)</i>	N/A				
Project Duration	Short Term		Estimated Cost	Medium	
Potential Funding Source	Local Budgeted Funds		If <i>Other</i> , you must identify a funding source.	N/A	
			Please provide further detail on Potential Funding Source.	General Fund (Staff Time)	
Implementation Priority	High	Integration Ideas <i>(Optional)</i>			



Mitigation Action	The Water Quality and Resource Recovery Plant (WQRRP) Effluent Valve Replacement Project involves upgrading aged, damaged, and leaking valves in the effluent pumping area. The purpose of this Project is to enhance the reliability and efficiency of the effluent structure, thereby improving the overall dependability of plant processes at WQRRP.				
Action Number	WCW-20	Year Initiated	2030	Prioritization Score	32/40
Goal(s) / Objective(s) Addressed	Goals: 1, 2, 3, 4, 5		Hazard(s) Mitigated	Climate Change, Dam and Levee Failure, Drought, Earthquake, Flood, Sea Level Rise, Severe Weather, Tsunami	
Project Status	New		<i>If Deleted/No Longer Needed, provide reason.</i>	N/A	
Benefits <i>(Loss Avoided)</i>	Medium				
Lead Agency / Organization	West County Wastewater District		Supporting Agency / Organization <i>(If applicable)</i>	N/A	
Additional Participating Jurisdictions <i>(If applicable)</i>	N/A				
Project Duration	Short Term		Estimated Cost	Medium	
Potential Funding Source	Local Budgeted Funds		<i>If Other, you must identify a funding source.</i>	N/A	
			Please provide further detail on Potential Funding Source.	General Fund (Staff Time)	
Implementation Priority	High	Integration Ideas <i>(Optional)</i>			

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Mitigation Action	The Water Quality and Resource Recovery Plant (WQRRP) effluent electrical system upgrades entail organizing, relocating, and enhancing electrical equipment within the effluent and headworks buildings. The purpose of these upgrades is to boost the reliability of plant processes and decreasing the risk of electrical failures at WQRRP.				
Action Number	WCW-21	Year Initiated	2027	Prioritization Score	32/40
Goal(s) / Objective(s) Addressed	Goals: 1, 2, 3, 4, 5		Hazard(s) Mitigated	Climate Change, Earthquake, Flood, Severe Weather	
Project Status	New	If Deleted/No Longer Needed, provide reason.		N/A	
Benefits <i>(Loss Avoided)</i>	Medium				
Lead Agency / Organization	West County Wastewater District	Supporting Agency / Organization <i>(If applicable)</i>		N/A	
Additional Participating Jurisdictions <i>(If applicable)</i>	N/A				
Project Duration	Short Term		Estimated Cost	Medium	
Potential Funding Source	Local Budgeted Funds		If <i>Other</i> , you must identify a funding source.	N/A	
			Please provide further detail on Potential Funding Source.	General Fund (Staff Time)	
Implementation Priority	High	Integration Ideas <i>(Optional)</i>			

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Mitigation Action	The Return Activated Sludge (RAS) Rehabilitation Project encompasses a comprehensive study, design, and construction phases aimed at improving RAS processes. This purpose of this Project is to enhance the efficiency of plant processes through identified improvements in RAS operations.				
Action Number	WCW-22	Year Initiated	2026	Prioritization Score	32/40
Goal(s) / Objective(s) Addressed	Goals: 1, 2, 3, 4, 5		Hazard(s) Mitigated	Earthquake, Flood, Sea Level Rise, Severe Weather	
Project Status	New	If Deleted/No Longer Needed, provide reason.		N/A	
Benefits <i>(Loss Avoided)</i>	Medium				
Lead Agency / Organization	West County Wastewater District	Supporting Agency / Organization <i>(If applicable)</i>		N/A	
Additional Participating Jurisdictions <i>(If applicable)</i>	N/A				
Project Duration	Long Term	Estimated Cost		Medium	
Potential Funding Source	Local Budgeted Funds	If <i>Other</i> , you must identify a funding source.		N/A	
		Please provide further detail on Potential Funding Source.		General Fund (Staff Time)	
Implementation Priority	High	Integration Ideas <i>(Optional)</i>			



Mitigation Action	The Side Streams Monitoring Station near the headworks involves a thorough study, design, and construction at the Water Quality and Resource Recovery Plant (WQRRP). The monitoring system positioned at the headworks role is to detect and measure digester supernatants and filtrates that could potentially affect secondary treatment systems and energy consumption, ensuring better management and control.				
Action Number	WCW-23	Year Initiated	2030	Prioritization Score	32/40
Goal(s) / Objective(s) Addressed	Goals: 1, 2, 3, 4, 5		Hazard(s) Mitigated	Severe Weather	
Project Status	New	If Deleted/No Longer Needed, provide reason.		N/A	
Benefits <i>(Loss Avoided)</i>	Medium				
Lead Agency / Organization	West County Wastewater District	Supporting Agency / Organization <i>(If applicable)</i>		N/A	
Additional Participating Jurisdictions <i>(If applicable)</i>	N/A				
Project Duration	Long Term	Estimated Cost		Medium	
Potential Funding Source	Local Budgeted Funds	If Other, you must identify a funding source.		N/A	
		Please provide further detail on Potential Funding Source.		General Fund (Staff Time)	
Implementation Priority	High	Integration Ideas <i>(Optional)</i>			



Mitigation Action	Conduct a comprehensive study, design, and construction of side streams at the Water Quality and Resource Recovery Plant (WQRRP). The monitoring system positioned at the headworks role is to detect and measure digester supernatants and filtrates that could potentially affect secondary treatment systems and energy consumption, ensuring better management and control.				
Action Number	WCW-24	Year Initiated	2030	Prioritization Score	32/40
Goal(s) / Objective(s) Addressed	Goals: 1, 2, 3, 4, 5		Hazard(s) Mitigated	Severe Weather	
Project Status	New	If Deleted/No Longer Needed, provide reason.		N/A	
Benefits <i>(Loss Avoided)</i>	Medium				
Lead Agency / Organization	West County Wastewater District	Supporting Agency / Organization <i>(If applicable)</i>		N/A	
Additional Participating Jurisdictions <i>(If applicable)</i>	N/A				
Project Duration	Long Term	Estimated Cost		Medium	
Potential Funding Source	Local Budgeted Funds	If Other, you must identify a funding source.		N/A	
		Please provide further detail on Potential Funding Source.		General Fund (Staff Time)	
Implementation Priority	High	Integration Ideas <i>(Optional)</i>			

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Mitigation Action	The Secondary Sedimentation Project encompasses a thorough study, design, and construction of a secondary sedimentation basin at the Water Quality and Resource Recovery Plant (WQRRP). The purpose of this Project is to address issues in the secondary sedimentation basin aiming to prevent overflows at WQRRP.				
Action Number	WCW-25	Year Initiated	2024	Prioritization Score	32/40
Goal(s) / Objective(s) Addressed	Goals: 1, 2, 3, 4, 5		Hazard(s) Mitigated	Climate Change, Severe Weather	
Project Status	New	If Deleted/No Longer Needed, provide reason.		N/A	
Benefits <i>(Loss Avoided)</i>	Medium				
Lead Agency / Organization	West County Wastewater District	Supporting Agency / Organization <i>(If applicable)</i>	N/A		
Additional Participating Jurisdictions <i>(If applicable)</i>	N/A				
Project Duration	Short Term	Estimated Cost	Medium		
Potential Funding Source	Local Budgeted Funds	If Other, you must identify a funding source.	N/A		
		Please provide further detail on Potential Funding Source.	General Fund (Staff Time)		
Implementation Priority	High	Integration Ideas <i>(Optional)</i>			



Mitigation Action	Phase 1 of the Odor Control Project involves conducting a comprehensive study, design, and construction improvements aimed at reducing odors at the Water Quality and Resource Recovery Plant (WQRRP). The purpose of this Project is to refine processes and minimizing odors within the WQRRP facility.				
Action Number	WCW-26	Year Initiated	2030	Prioritization Score	32/40
Goal(s) / Objective(s) Addressed	Goals: 1, 2, 3, 4, 5		Hazard(s) Mitigated	Climate Change, Severe Weather	
Project Status	New	If Deleted/No Longer Needed, provide reason.		N/A	
Benefits <i>(Loss Avoided)</i>	Medium				
Lead Agency / Organization	West County Wastewater District	Supporting Agency / Organization <i>(If applicable)</i>		N/A	
Additional Participating Jurisdictions <i>(If applicable)</i>	N/A				
Project Duration	Long Term	Estimated Cost		Medium	
Potential Funding Source	Local Budgeted Funds	If Other, you must identify a funding source.		N/A	
		Please provide further detail on Potential Funding Source.		General Fund (Staff Time)	
Implementation Priority	High	Integration Ideas <i>(Optional)</i>			



Mitigation Action	The Gravity Sewer Replacement Program involves replacing pipes in public streets and easements to enhance the condition and reliability of the collection system. The purpose of this Project is to minimize the risk of sanitary sewer overflows into the collection system.				
Action Number	WCW-27	Year Initiated	2025	Prioritization Score	32/40
Goal(s) / Objective(s) Addressed	Goals: 1, 2, 3, 4, 5		Hazard(s) Mitigated	Climate Change, Dam and Levee Failure, Earthquake, Flood, Landslide, Sea Level Rise, Severe Weather, Wildfire	
Project Status	New	If Deleted/No Longer Needed, provide reason.		N/A	
Benefits <i>(Loss Avoided)</i>	Medium				
Lead Agency / Organization	West County Wastewater District	Supporting Agency / Organization <i>(If applicable)</i>		N/A	
Additional Participating Jurisdictions <i>(If applicable)</i>	N/A				
Project Duration	Long Term	Estimated Cost		High	
Potential Funding Source	Local Budgeted Funds	If Other, you must identify a funding source.		N/A	
		Please provide further detail on Potential Funding Source.		General Fund (Staff Time)	
Implementation Priority	High	Integration Ideas <i>(Optional)</i>			



Mitigation Action	Upgrade the supervisory control and data acquisition (SCADA) system across multiple existing lift stations to enhance operational efficiency. The purpose of these upgrades is to enable notifications to the Water Quality and Resource Recovery Plant (WQRRP) Department's Maintenance and Operations divisions staff, facilitating timely maintenance actions. Ultimately, this will enhance the reliability of lift stations, minimizing the risk of emergencies.				
Action Number	WCW-28	Year Initiated	2026	Prioritization Score	32/40
Goal(s) / Objective(s) Addressed	Goals: 1, 2, 3, 4, 5		Hazard(s) Mitigated	Climate Change, Earthquake, Flood, Severe Weather, Cybersecurity Threats	
Project Status	New	If Deleted/No Longer Needed, provide reason.		N/A	
Benefits <i>(Loss Avoided)</i>	Medium				
Lead Agency / Organization	West County Wastewater District	Supporting Agency / Organization <i>(If applicable)</i>		N/A	
Additional Participating Jurisdictions <i>(If applicable)</i>	N/A				
Project Duration	Short Term		Estimated Cost	Medium	
Potential Funding Source	Local Budgeted Funds		If Other, you must identify a funding source.	N/A	
			Please provide further detail on Potential Funding Source.	General Fund (Staff Time)	
Implementation Priority	High	Integration Ideas <i>(Optional)</i>			



APPENDIX A. PUBLIC ENGAGEMENT

[This section will be populated after the Public Comment Period ends.]



APPENDIX B. PLAN ADOPTION

[Placeholder for adoption documentation after State and FEMA Approval]