East Contra Costa County
Integrated Regional Water Management Plan

Update 2013 Highlights and Executive Summary

November 2013

East County Water Management Association

CONTRA COSTA WATER DISTRICT

City of Pittsburg

Delta Diablo Sanitation District

CITY OF ANTIOCH 1872 CALIFORNIA

THE CITY OF BRENTWOOD

Contra Costa County Flood Control & Water Conservation District

East Contra Costa County Habitat Conservancy

DIABLO WATER DISTRICT

DISCOVERY BAY "Live Where You Play"

IRONHOUSE SANITARY DISTRICT

ECCID

BYRON BETHANY IRRIGATION DISTRICT

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East County Water Management Association:

City of Antioch

City of Brentwood

Byron-Bethany Irrigation District

Contra Costa County Flood Control

Contra Costa Water District

Delta Diablo Sanitation District

Diablo Water District

Discovery Bay Community Services District

East Contra Costa County Habitat Conservancy

East Contra Costa Irrigation District

Ironhouse Sanitary District

City of Pittsburg

ABBREVIATIONS AND ACRONYMS

BDCP	Bay Delta Conservation Plan
CWP 2009	California Water Plan Update 2009
DAC	Disadvantaged Community
Delta	Sacramento-San Joaquin Delta
DOC	Dissolved Organic Carbon
DWR	California Department of Water Resources
ECCC	East Contra Costa County
ECWMA	East County Water Management Association
IRWM	Integrated Regional Water Management
RAP	Regional Acceptance Process
RMS	Resource Management Strategy
RWMG	Regional Water Management Group
Water Board	Regional Water Quality Control Board (formerly abbreviated as RWQCB)

ECCC IRWM PLAN – UPDATE 2013 HIGHLIGHTS

Introduction

The East Contra Costa County (ECCC) Integrated Regional Water Management (IRWM) planning effort is a formal collaborative process convened to support all aspects of water management. It includes integrated planning for water supply, water quality, environmental resources, and flood and stormwater management. The East County Water Management Association (ECWMA) members have a long history, extending almost two decades, of cooperation across geographies, political boundaries, and project types. In this ECCC IRWM Plan Update these participants, referred to here as ECCC IRWM member agencies, identify projects and actions for the ECCC region that will create mutually beneficial water management outcomes and produce projects with multiple benefits.

Integrated planning for:

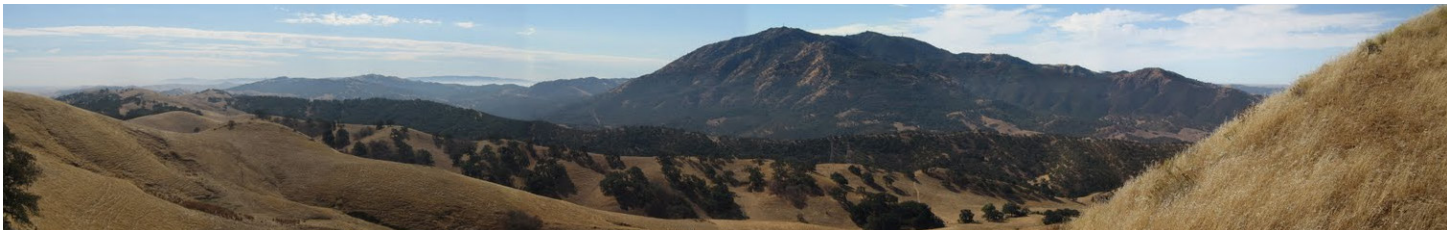
- **Water supply**
- **Water quality**
- **Environmental resources**
- **Flood and stormwater management**

Starting in late 2011 and during 2012 and 2013 the ECWMA convened a series of public meetings to work on the DWR Proposition 84 Round 1 Planning Grant-funded East Contra Costa County IRWM Plan Update.

This IRWM Plan Update articulates the challenges and issues the ECCC region faces and defines the objectives it hopes to accomplish. The challenges are significant, as is the opportunity to improve the situation by working together and with the California Department of Water Resources (DWR). This plan prominently considers the complexities of managing water supply and quality, uncertainty and the needs of Disadvantaged Communities, and focuses on identifying resources to ensure a sustainable future.

To this end the ECCC IRWM member agencies developed a website, *www.eccc-irwm.org* to collect and disseminate information, met with stakeholders, and developed a process to evaluate and prioritize implementation projects. They also successfully fulfilled the requirements of the 2011 IRWM planning grant provided in support of the DWR's effort. The framework enables the plan to adapt to changing conditions an meet its current and future water management challenges.

Figure 1: East Contra Costa County, as part of, and integral with the Delta, is a socially and environmentally diverse region.



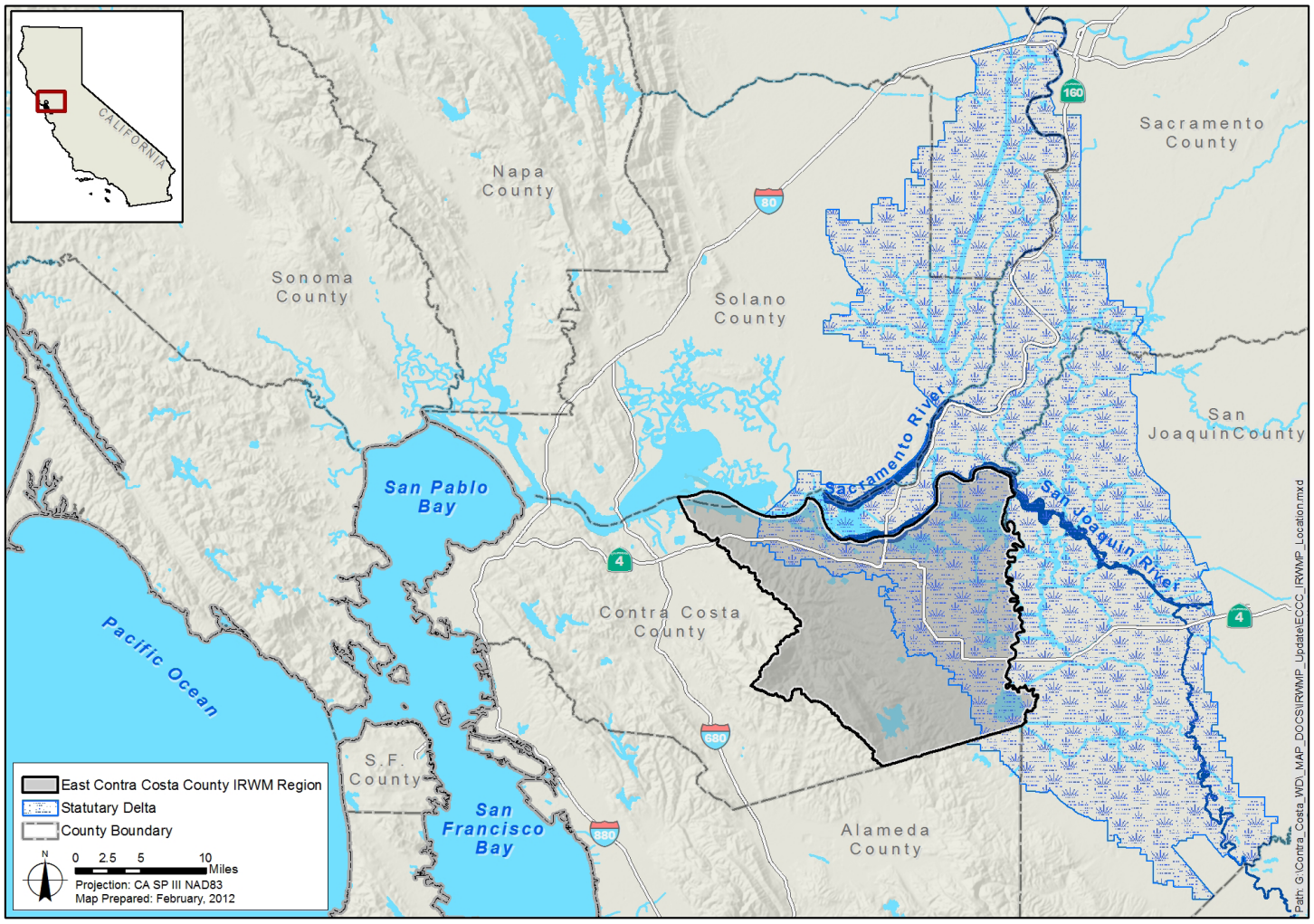


Figure 2: East Contra Costa County IRWM Region.

ECCC Region

Bounded by the ridge lines of Mount Diablo to the south and west, and nestled along the meandering banks of the complex historic Sacramento-San Joaquin Delta (Delta) water system to the north and east, ECCC is a geographically distinct region. Its unique footprint both isolates and incorporates complex urban and Delta water management issues and brings with it a unique set of challenges and opportunities.

The ECCC region is the largest contiguous land area in Contra Costa County, and includes much of the hilly terrain of the Diablo Range. Home to 300,000+ people and still growing, its four cities are Antioch, Brentwood, Oakley, and Pittsburg. Unincorporated communities include Bay Point, Bethel Island, Byron, Discovery Bay, and Knightsen.

In addition to a highly diverse population, the 350 square miles of ECCC host a wide range of uses, including major industrial activities largely situated along along the San Joaquin River, agriculture, and recreation, as well as fragile habitats and sensitive species. All are dependent on water. The region's water consumers almost entirely rely on supplies originating from the western Delta, supplemented by relatively small quantities of groundwater and recycled water. The Contra Costa Water District provides untreated and treated water to most of the urban, commercial and industrial usage within the ECC region and until 1998 the primary source of water supply was the Contra Costa Canal system and Rock Slough. The Contra Costa Canal system is owned by the Department of the Interior, Bureau of Reclamation and was constructed in 1939.

Residents also benefit from and rely on critical flood and stormwater infrastructure, water treatment facilities, wastewater collection systems and treatment plants, and recycled water systems.

The region faces special challenges as many residents (23 percent) reside in economically disadvantaged communities (DAC). These DAC's are located largely in areas close to the Delta and major industry

including power and chemical plants. Continued water dependent industrial development near DAC's may also result in potential environmental justice concerns for these residents.

Since most of the region's water supply is from the western Delta, any impacts as well as improvements to Delta water supply and water quality directly affect DACs. This is very different from other IRWM regions that have access to upstream water resources (e.g., Sierra Nevada reservoirs) and pipelines that bypass the Delta. DACs in these other locations all receive high-quality treated water that are not directly impacted by changes in Delta water quality.

A lack of community resources can impact the ability of ECCC IRWM member agencies to obtain additional resources for water-related needs. Yet, even with the recent economic downturn and the attendant issues of disproportionate DAC numbers, community growth is still occurring. All indications point to an increased need for water-based infrastructure and services, now and into the future, and much of this new infrastructure created within the ECCC will benefit DACs.

DWR IRWM Regional Process

In 2009, DWR instituted a Regional Acceptance Process (RAP) to evaluate and accept an IRWM region into its IRWM grant program. Per these new requirements, the ECCC region successfully submitted a RAP application and was fully recognized by DWR. At a minimum, a region is defined as a contiguous geographic area encompassing the service areas of multiple local agencies. A region is designed to maximize the opportunities to integrate water management activities; and effectively integrates water management programs and projects within a hydrologic region defined in the California Water Plan, the Regional Water Quality Control Board (Water Board) region, or subdivision or other region specifically identified by DWR.

Overlap with Bay Area IRWM

Interestingly, the IRWM regional definition creates some complexity. As a contiguous geographic area encompassing multiple member agency service areas, a portion of the ECCC region (all of Pittsburg, Bay Point, and a small portion of Antioch,) overlaps a section of the San Francisco Bay Area IRWM Region Funding Area boundary. The Bay Area region includes all or part of nine counties (including part of Contra Costa and 110 cities), and is coterminous with the boundary of the San Francisco Bay Water Board, Region 2. The ECCC region rests primarily in the jurisdiction of the Central Valley Water Board, Region 5 and a portion overlaps with Region 2 jurisdiction in Contra Costa County. Despite this jurisdictional overlap, the ECCC region has distinct water management differences from the Bay Area and thus was proposed and accepted as a separate planning region. Much of the overlap area within the ECCC region contains DACs, and their water supply and quality issues are planned and managed by ECCC IRWM member agencies.

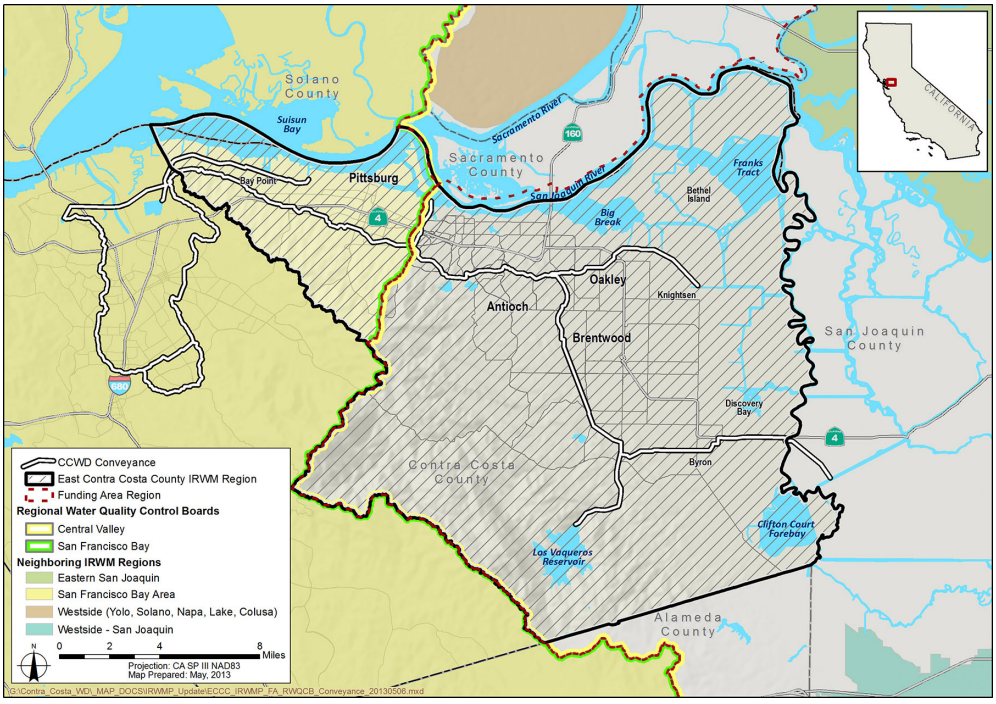


Figure 3: The East Contra Costa County IRWM Region and neighboring IRWM regions.

As part of its RAP application, the ECCC IRWM member agencies identified the East County Water Management Association (ECWMA) as the required Regional Water Management Group (RWMG). Under the grant guidelines the RWMG or in this case the ECWMA, is responsible for navigating these jurisdictional complexities, coordinating with other planning efforts, and updating and implementing the ECCC region's IRWM Plan. The ECWMA is well suited

Figure 4: Los Vaqueros reservoir increases water supply reliability and improves drinking water quality.

to this task, having operated as a collaborative body since 1997. Members of the ECWMA frequently attend Bay Area IRWM Coordinating Committee meetings and Bay Area IRWM members can attend ECCC IRWM meetings.

ECCC Water Management Needs and Issues

The ECCC RWMG, informed by stakeholder input, identified five overarching needs to address in the IRWM Plan Update:

- Water-quality-related regulations and water supply reliability.
- Restoration and enhancement of the Delta ecosystem and other environmental resources.
- Funding for water-related planning and implementation.
- Stormwater and flood management.
- Water-related outreach and equitable distribution of resources in the region.

The ECCC IRWM region is almost entirely dependent on Delta water supply and all or a portion of the cities and unincorporated communities are located within the statutory Delta. This distinction is important as the Delta is a physical place with legally defined boundaries and requirements, which add to ECCC water management complexity.

The Contra Costa Water District has already made substantial investments in water storage and water quality by constructing the expanded Los Vaqueros Reservoir and the Old and Middle River intakes and improvements at the Rock Slough intake. Even so, unreliable surface water supply, especially in dry years and when considering future growth, is a continuing concern as is regional dependence on Delta water supplies. Delta Diablo Sanitation District, Ironhouse Sanitary District, and the City of Brentwood are all planning and developing recycled water projects, which will increase water supply reliability, and reduce dependence on Delta supplies. Issues associated with proposed future projects such as the Bay Delta Conservation Plan (BDCP), a fragile Delta ecosystem, climate change, and/or potential levee failure are expected to impact water quality and water supply reliability within the ECCC IRWM region. An associated concern is the ability of the region to meet future water quality treatment and discharge regulations.

Present water demand in the region is driven by a highly diverse population base with a wide range of water needs, including urban and agriculture uses, ecosystem needs, and recreation. Urban and agricultural uses make up a majority of water demand; urban uses account for about 55% of that demand. Changes in future water demands will be driven by rapid increases in population. By 2035 urban uses are projected to increase to about two-thirds of the urban-agricultural water demand. The ECCC IRWM Plan includes projects that address this future demand for water, including increasing the availability of recycled water, increasing conservation efforts, and increasing water supply through integrated water management.

Closely linked to Delta water quality and water supply reliability issues is a need for restoration and enhancement of the Delta ecosystem and other environmental resources. Another set of concerns revolves around preventing, reducing, and mitigating for environmental impacts and restoring historically declining wetland habitats. Additionally, water-infrastructure-related projects within the Delta often require wetland mitigation and these credits can be difficult and costly to obtain.

That said, the Region has several integrated ecosystem efforts already underway. For example ECCC IRWM member agencies participated in the East Contra Costa County Habitat Conservation Plan/ Natural Community Conservation Plan. This plan is intended to provide regional conservation and development guidelines to protect natural resources while improving and streamlining the permit processes. The East Contra

Costa Habitat Conservancy is a member agency and will oversee implementation. By proactively addressing the long-term conservation needs, the Plan strengthens local control over land use and provides greater flexibility in meeting other needs such as housing, transportation, and economic growth in the area.

One example of the types of projects that address regional needs is the Dutch Slough Wetlands Restoration project. A collaborative effort being done in partnership with DWR and others offers an opportunity for large-scale tidal marsh restoration, habitat enhancement and open space preservation in the rapidly urbanizing area of eastern Contra Costa County and adjacent to the unlined portion of the Contra Costa Canal.

These types of integrated projects will be essential for ECCC in moving forward. A lack of funding for planning and implementation because of slower economic development and reduced water usage has impacted revenue, creating insufficient or variable revenue streams. Additional funding issues are a result of the competitive nature of receiving State and federal funding, limited available funds, and potential schedule delays associated with grant funding.

Given that the ECCC IRWM region includes substantial low-elevation acreage, is within the drainage of Mount Diablo, and sits adjacent to the Delta, both localized flood from stormwater runoff and regional/ catastrophic flooding due to levee failure are real and present threats.

Of the past 11 president-declared natural disasters in the region, all but one involved storms and flooding. Climate change is only likely to increase these risks.

A final set of concerns relates to water-related outreach within the area. The region has a substantial (23 percent) DAC population and it is often difficult to obtain meaningful feedback on potential improvements for these communities. One example is limited access to waterways for subsistence fishing and recreation.

Climate Change

Climate change will increase vulnerabilities for nearly all aspects of water management. The table below outlines some of the ECCC climate change considerations.

Table 1 Climate Change Vulnerabilities

FACTOR	GENERAL OVERVIEW OF VULNERABILITIES
Water Demand	Changes in water demand due to temperature, both in quantities and patterns. Peak demands for all sectors may be greater.
Surface Water Supply	Changes in precipitation and temperature in the Sierra Nevada region affect the timing and quantity of tributary flows. This affects the availability of fresh surface water for the region.
Groundwater Supply	Changes in local hydrology could affect natural recharge to the aquifers and the quantity of groundwater that could be pumped sustainably over the long term. Changed weather patterns can alter natural recharge of groundwater. Lack of surface water will increase reliance on local groundwater.
Surface Water Quality	Rising temperatures increase algal blooms and taste and odor events. A decrease in annual precipitation results in higher concentrations of contaminants during droughts and lower dissolved oxygen
Groundwater Quality	Sea-level rise could increase groundwater salinity. Water quality changes in surface water that is applied as irrigation and that recharges the groundwater could also increase groundwater salinity.
Sea Level	ECCC infrastructure below mean sea level and land protected by independently maintained levees are at risk for increased levee failure and flood damage. Failures could lead to disruption or changes in water supply reliability, water treatment, and wastewater treatment and disposal.
Flooding	Vulnerability to unimproved levees, and increased flood risk with sea-level rise, coupled with changes to local precipitation and storm intensity. Expected extreme weather events. Increased flooding could disrupt or change water supply reliability, water treatment, and wastewater treatment and disposal.
Ecosystem, Habitat and Restoration	Changed temperature and precipitation can dramatically alter native species habitats. A significant recreational economy (boating, fishing, biking, and hiking) could be affected by changes to the ecosystem and wildlife habitat.
Energy	Increases in peak energy demands throughout California may decrease power supply reliability. A decrease in power supply reliability could alter or disrupt water diversions, water treatment, and wastewater disposal. Region may respond to additional calls for gas generated electricity, creating higher use patterns of regional facilities, and attend air quality and operational issues.

ECCC IRWM Plan Objectives

With a shared agreement regarding the primary regional water management issues, the ECWMA set its objectives for the IRWM Plan.

No single objective was determined to be higher priority than the others; however, there are five sets of related objectives combined to address priority issues. As a result, some objectives address multiple concerns; for example, maintaining Delta levees supports both flood control and Delta ecosystem protection. The RWMG believes this list of combined objectives, when implemented, would address the region's priority water management issues of water supply and quality, environmental concerns, storm and flood management, outreach and equitable distribution of resources, and adequate funding to meet regional needs.

The following outlines the IRWM objective categories.

Water Supply Reliability and Water Quality

- Protect/improve source water quality
- Carefully monitor proposed changes to Delta Operations and how those changes impact water supply/quality/availability.
- Pursue additional water supply sources that are less subject to drought and the availability of Delta water supplies. For example, recycled water and desalination
- Increase water conservation and water use efficiency
- Increase water transfers
- Pursue regional exchanges for emergencies, ideally using existing infrastructure
- Enhance understanding of how groundwater fits into the water portfolio and investigate groundwater as a regional source (e.g., conjunctive use)
- Maintain/improve regional treated drinking water quality
- Maintain/improve regional recycled water quality
- Increase understanding of groundwater quality and potential threats to groundwater quality
- Limit quantity and improve quality of stormwater discharges to the Delta
- Meet current and future water quality requirements for discharges to the Delta

Protection, Restoration, and Enhancement of the Delta Ecosystem and Other Environmental Resources

- Work cooperatively with DWR on a plan to protect the Contra Costa Canal while allowing the Dutch Slough Tidal Restoration Project to be developed.
- Enhance and restore habitat and watersheds that contribute to the Delta and connected waterways
- Minimize impacts to the Delta ecosystem and other environmental resources
- Mitigate Delta infrastructure projects with created wetlands as appropriate
- Reduce greenhouse gas emissions
- Protect Delta ecosystem against habitat disruption due to emergencies, such as levee failure
- Provide better accessibility to waterways for subsistence fishing and recreation

Funding for Water-Related Planning and Implementation

- Increase regional cost efficiencies in treatment and delivery of water, wastewater, and recycled water
- Develop projects with regional benefits that are implementable and competitive for grant funding
- Increase public awareness of project importance to pass ballot measures or obtain matching funds through other means that require public support

Stormwater and Flood Management

- Manage local stormwater
- Improve regional flood risk management

Water-Related Outreach and Equitable Distribution of Resources

- Collaborate with and involve economically disadvantaged communities in the IRWM process
- Increase awareness of water resources management issues and projects with the general public

In addition, for each of the identified objectives addressing a priority issue, an accompanying set of qualitative or quantitative metrics were identified. These represent the targets the region has identified to meet its requirements and will be used in monitoring the IRWM Plan implementation.

ECCC REGION RESOURCE MANAGEMENT STRATEGIES

After identifying the issues and objectives of the ECCC region, the ECWMA considered the strategies and approaches required to address them. DWR guidelines require the IRWM Plan to document the range of Resource Management Strategy(ies) (RMS) considered to meet the IRWM objectives and identify which RMSs were incorporated into the IRWM Plan. RMSs are defined as "a project, program, or policy that helps local agencies and governments manage their water, and related resources." The list of RMSs was shared with the ECWMA and stakeholders to consider when developing projects. Of the 33 individual tools described in the CWP 2009 RMS section, the ECWMA identified 24 with potential for use in meeting the IRWM Plan objectives, plus three new RMS's that will be included in CWP 2013 RMSs. The RMSs moved forward for consideration in the ECCC IRWM Plan are listed alphabetically below.

1. Agricultural Lands Stewardship
2. Agricultural Water Use Efficiency
3. Conjunctive Management & Groundwater Storage
4. Conveyance – Delta
5. Conveyance – Regional/local
6. Desalination
7. Drinking Water Treatment and Distribution
8. Economic Incentives (Loans, Grants, and Water Pricing)
9. Ecosystem Restoration
10. Flood Risk Management
11. Irrigated Land Retirement
12. Land Use
13. Matching Quality to Use
14. Pollution Prevention
15. Recharge Area Protection
16. Recycled Municipal Water
17. Salt and Salinity Management
18. Surface Storage – CALFED
19. Surface Storage – Regional/Local
20. System Reoperation
21. Urban Runoff Management
22. Urban Water Use Efficiency
23. Water Transfers
24. Water-Dependent Recreation
25. Watershed Management
26. Sediment Management
27. Water and Culture
28. Outreach and Education

Key:
CALFED = California Bay-Delta Program
ECCC = East Contra Costa County
RMS = Resource Management Strategy

Figure 5: DDSD's recycled water facility integrates several resource management strategies, helping to achieve IRWM Plan objectives.

Establishing Regional Project Priorities

ECCC stakeholders were invited to submit projects for consideration in the IRWM Plan. The initial invitation garnered 54 projects for consideration. These were then screened, and scored, to establish priorities.

Scoring was based on the ECCC region's needs and objectives and with consideration of the preferences outlined by the DWR grant guidelines. Four categories of scoring criteria were selected, with each assigned a weighting factor representing the relative importance to the region. The criteria were then used to score each project based on merit and ability to help the region meet its planning priorities. The categories and relative weighting were:

1. Regional Objectives (50 percent).
2. IRWM Program Preferences (30 percent).
3. Statewide Priorities (15 percent).
4. Other factors from IRWM Program Guidelines (5 percent).

(This category includes additional DAC and environmental justice considerations, and contribution of the project in reducing greenhouse gas emissions, as compared to project alternatives.)

The actual scores were highly dependent on the effort and understanding of the IRWM process by project proponents. The RWMG reviewed the projects with scores as a group.

Resource Management Strategies Diversification Considerations

Each project was evaluated to determine which RMSs it included then given a total RMS score. Projects with a greater number were considered to contribute more to regional diversification. Diversification did not contribute to the overall project score, but was a separate criteria for the region to use in identifying implementation priorities or proposals for grant funding.

Implementation Considerations

In addition to the criteria-based scores and RMS diversification criterion, project readiness and implementation considerations were collected for each project. These included:

- The status and completion date of planning, design, and construction/ implementation
- Total project cost and total amount and percent of project funded
- Availability of a project economic feasibility analysis

Project Review Steps

Project review then followed six sequential steps:

1. Perform initial screening of projects for inclusion in the IRWM Plan.
2. Review benefits claimed by each project.
3. Integrate and coordinate projects.
4. Evaluate and score projects.
5. Iterate and improve projects.
6. Create a suite of priority projects that, when implemented, will help the region to meet its objectives.

Living Document

The final result is an initial list of IRWM Plan project priorities. With the Web site and planning framework established, projects may be added, removed, or updated at any time. With a living process, project proponents and stakeholders now have a venue to collaborate and integrate their projects. From time to time, the RWMG may also initiate another formal "Call-for-Projects" to refresh their list or to prepare for a new funding opportunity. For instance, the ECCC region will complete additional planning efforts under the recently awarded Proposition 84 DWR Round 2 Planning Grant. Results of this work may warrant the addition of projects to the list. Future integrated planning will continue to be ongoing, open, transparent, and collaborative.

Benefits and Impacts

By their nature, IRWM plans are implemented through projects. Those projects are designed to produce benefits but may also have impacts to the region. Benefits and impacts

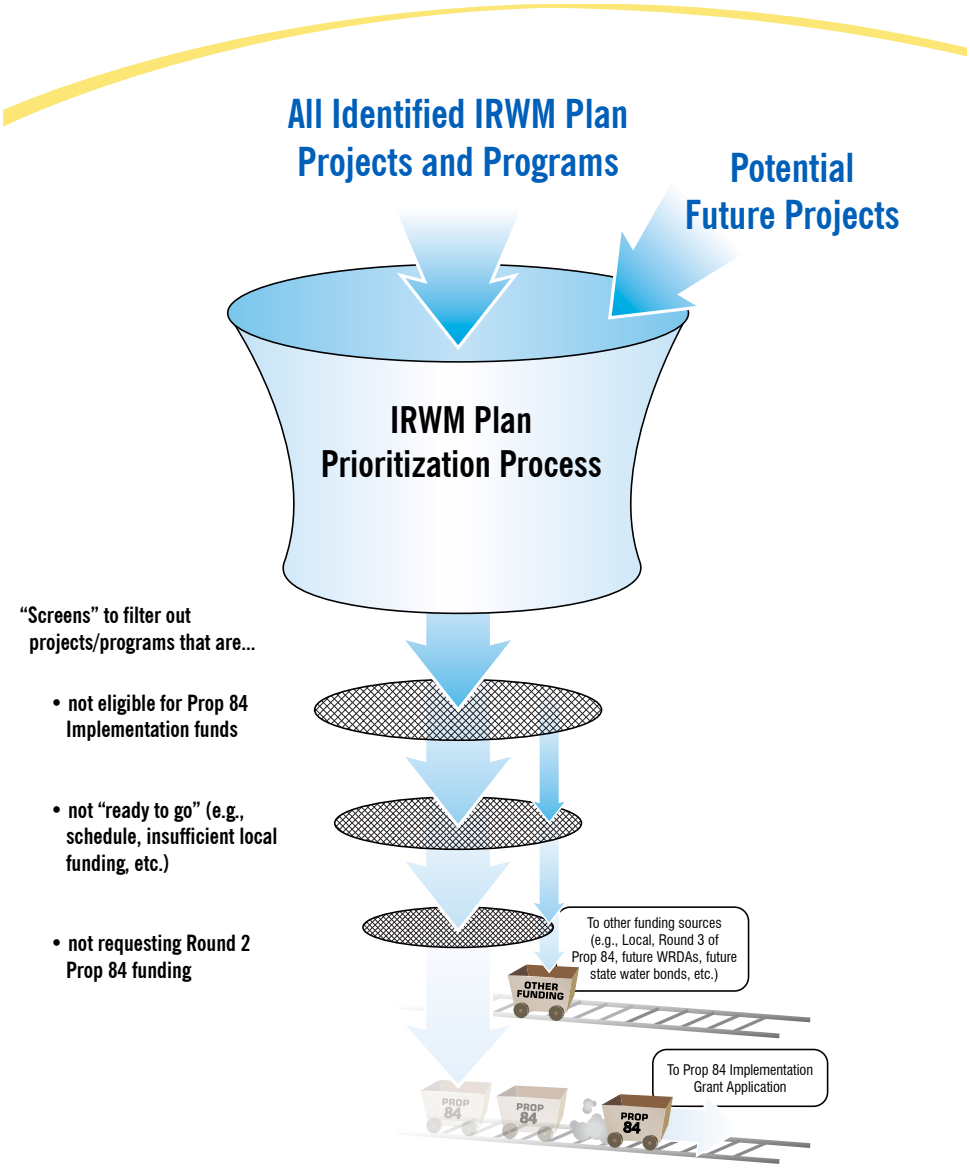


Figure 6: Prioritizing various regional projects considering multiple criterion.

need to be documented in more detail to meet the required environmental compliance laws, such as the California Environmental Quality Act and National Environmental Policy Act, or other local, State, or Federal permits.

That said, the region has identified multiple benefits from achieving its objectives. Key benefits are tied directly to the five plan objectives.

Benefits

Water Supply and Quality

Projects that improved water quality or provide reliable water supply are essential to future viability of all aspects of the region's environment, economy, and culture. Because the regional supply is tied to the Delta, projects to mitigate or reduce variable or negative Delta conditions and anticipate climate change impacts, such as drought and extreme weather, will greatly increase the region's resilience and ability to adapt to changing conditions.

Water supply and quality are linked as improving and maintaining water quality contributes to supply (for humans and the environment) and is a critical factor in cost. CCWD has invested approximately $750 million since 1998 to construct the Los Vaqueros Reservoir and two new Delta intakes primarily to improve water quality and for drought protection. Benefits associated with water supply projects or water quality projects (or both) determine what water may be available for appropriate uses.

Specific projects proposed to achieve reliable supply and quality aim to provide the following benefits:

- Improved ability to adapt to changing situations caused by the uncertainty in Delta influences and future operations and climate change (such as recycled water and desalination)
- Reduced per capita consumption creating benefits such as better extension of existing and future infrastructure and supplies
- Increased efficiency of water within the system (through regional water sharing and decreasing leaks and water losses)
- Improved emergency options (through regional exchanges for emergencies, ideally using existing infrastructure to focus on minimizing the amount of salt water intrusion into the drinking water supply, particularly in the event of a levee failure on Jersey Island)
- Better understanding and management of the groundwater portfolio as a regional source (e.g., conjunctive use) to reduce Delta water use and threats to groundwater quality
- Increased ability to respond to the regulatory environment and protect public health by meeting current and future water quality requirements for discharges to the Delta
- Overall improved Delta health from limiting quantity and improving quality of stormwater discharges

Protection, Restoration, and Enhancement of the Delta Ecosystem and Other Environmental Resources

Projects focused on ecosystem and environmental resources recognize the importance of investments in watershed health and sustainability.

Figure 7: Protecting and enhancing riparian, wetland, and Delta ecosystems is an important goal of the ECCC IRWM Plan.

Specific proposed projects will:

- Provide both local and statewide benefits by enhancing and restoring Delta and connected waterways habitat, as well as conserving valuable ecological habitat for state and federally listed special status species
- Minimize local impacts to the Delta ecosystem and other environmental resources by maintaining Delta water quality and reducing regional flooding and road runoff impacts, lowering salinity in effluent discharges, minimizing sewer overflows, curtailing disruptive earth movements, and decreasing the amount of water removed from the Delta
- Contributions to the State's goals for addressing climate change, as outlined in the Global Warming Solutions Act of 2006
- Improved accessibility to waterways for subsistence fishing and recreation and protect public health by reducing mercury levels in fish.

Stormwater and Flood Management

The benefits of proposed stormwater and flood management projects are multiple. Proposed projects will provide benefits such as:

- Reduced risk and damages from excess water flows from storms and floods, resulting in better economic, social, and environmental outcomes
- Reduction of impacts to water quality from excess untreated and polluted flows
- Improved resiliency and faster recovery from storm and flood events
- Increased stormwater and floodwater protection for areas, including DACs, that currently experience flooding and its related issues

Water-Related Outreach

The ECCC believes engagement with the community is essential to ongoing support for IRWM projects. Outreach educates and promotes actions that residents and businesses can take in support of water management goals. For example, individuals and businesses can reduce pollutants entering waterways and practice water use efficiency. Finally, the community at large is benefited when everyone has access to decision making and the work of the ECCC is transparent. Some other benefits of engaging stakeholders include:

- Better project selection by targeting DACs currently impacted by annual floods, reduced water and sewer services, and hazardous waste sites contributing to unacceptable contaminant levels in water
- Improved community health through improved infrastructure and water management practices
- Increased awareness of water resources management issues and projects by the general public leading to better decisions by the public, water managers, and elected officials
- Increased water quality and reduced sewer system impacts by local actions such as appropriate fat, oils and grease disposal
- Voluntary adoption of renewable energy sources
- Increased appreciation for the environment through access to areas made available for public enjoyment

Funding for Water-Related Planning and Implementation

Projects that strive to improve funding for planning and implementation fall into several categories. The ultimate benefit of this focus is to make sure money is available to implement projects delivering the benefits already described above and to ensure the public is receiving the best possible value from its investments. Projects meeting this objective:

- Increased regional cost efficiencies in treatment and delivery of water, wastewater, and recycled water. For example, projects to reduce leaks and projects that will reduce costs of running facilities
- Increased competitiveness for grants and other funding sources by leveraging matching funds
- Integrated and increased opportunities for partnering with others to get more outcomes for the same dollar
- Improved the stability of operations, which ultimately results in reduced cost. For example, regularly scheduled maintenance is less costly than system failures caused by a lack of maintenance

Figure 8: The Delta and surrounding areas are heavily dependent on aging levees for flood control and water quality protection.

Impacts

Based on the initial project evaluation, anticipated impacts are primarily local, temporary, and associated with construction. A smaller set of projects may also result in the following types of impacts:

Restoration and related projects	Tidal marsh restoration projects have a potential to: • Increase mercury methylation. This happens when projects increase dissolved organic carbon (DOC) in Delta water. Several studies indicate that methylmercury can damage developing embryos and exposure in adults has been linked to increased risk of cardiovascular disease, tremors, gingivitis, damages to the immune system and other ailments. Humans are primarily exposed by eating mercury contaminated fish. • Increase DOC loads in drainage water • Create temporal impacts from excavation and restoration of marsh area
Groundwater projects	If improperly implemented can: • Damage the aquifer • Introduce contaminates or allow salinity intrusion • Increase greenhouse emissions (through energy use for pumping)
Flood and stormwater management projects	• May reallocate risk from the project location to another area in the watershed by changing flow patterns and/or increasing contaminants • May minimize understanding of actual risks from flood by the public

Plan Performance and Monitoring

As noted earlier, the region's objectives included qualitative or quantitative metrics. These metrics give the RWMG and its members a way to determine if the region is meeting its intent and to assess the IRWM Plan's performance. There may be two levels of monitoring: at the project level and at the IRWM Plan level. Levels of monitoring will be reported and shared with the RWMG so it can determine how well the IRWM Plan implementation is proceeding. The reporting is also valuable because it will provide needed signals of implementation progress that will allow the region to reconsider what objectives and approaches may need to be changed, updated, refined, eliminated, or supplemented.

Next Steps

This IRWM Plan Update establishes a strong foundation for future planning and implementation activities. The ECCC Water Management Group will continue to support regional planning. CCWD will continue to provide water service to much of the region. While IRWM plans do not have regular update schedules, the RWMG and its members working with the ECCC Water Management will use monitoring and be responsive to regional and statewide needs to determine the best time to update the IRWM Plan. An IRWM Plan update could be triggered by:

- New IRWM Program guidelines or requirements
- New stakeholders or participants
- A need to change the region's boundary, such as contraction, expansion, or consolidation with another region
- Significant environmental changes or other catastrophic events
- Significant updates to local water planning or local land-use planning, such as the completion of planning efforts soon to be underway associated with the Proposition 84 DWR Round 2 Planning Grant awarded to the region in late 2012
- IRWM Plan monitoring results indicating needed changes

The region plans to follow the established IRWM Plan for the next few years. The planning framework allows for results and outcomes of future planning efforts, such as the upcoming Proposition 84 DWR Round 2 Planning Grant effort, to be incorporated into an update of the IRWM Plan. The planning framework will support requests for implementation grant funding in Proposition 84 Round 2 (March 2013) and Round 3 funding requests and other DWR implementation grant programs, as appropriate (e.g., Proposition 1E). Furthermore, the RWMG and it members will reexamine the planning process and its components, as needed, to determine if the IRWM Plan or any of its components (e.g., objectives) need updating or revising.

THE ECCC REGION CONTINUES TO PROGRESS ON IMPORTANT PLANNING EFFORTS

Since completing the region's first IRWM Plan in 2005, a document that tied together significant past planning efforts, the region has continued its investment in regional integrated and coordinated water management planning, for example:

- Regional Acceptance Process was completed in 2009. Approved by DWR
- 2010 UWMP Updates (Antioch, Pittsburg, Brentwood, CCWD, DWD, Golden State Water Co – Bay Point) and various related water conservation plans, programs, and projects
- Regional scale water supply optimization planning (municipal water purveyors)
- Regional water recycling and desalination planning (DDSD, ISD)
- Groundwater Management Plans, CASGEM Plans, and Salinity/Nutrient management planning (DWD, Pittsburg)
- Regional habitat conservation planning and implementation (ECCCHC)
- Long-range regional flood management planning (CCCFCWCD)
- Active participant in integrated water management grant programs (all ECWMA members agencies)
- Improved outreach, collaboration, and communication (all ECWMA members agencies)

CCWD – Contra Costa Water District, DWD –Diablo Water District, DDSD – Delta Diablo Sanitation District, ISD – Ironhouse Sanitary District, ECCCHC – East Contra Costa County Habitat Conservancy, CCCFCWCD – Contra Costa County Flood Control & Water Conservation District, ECWMA – East County Water Management Association.

www.eccc-irwm.org

East County Water Management Association