Bay-Delta Policies Update Process

Background Information

This document "Background Information" provides an overview of Metropolitan's current efforts to update the Bay-Delta policies (pages 1-10) in three sections. The first section provides a brief overview of the existing Bay-Delta Policies, beginning with the current policy statements that were updated in 2006. Section 2 describes the Bay-Delta Policies update process to date and Section 3 describes the Board Committee discussion process. Additional information, including a summary of emerging trends (Attachment A, pages 11-31) that influenced Metropolitan's decision to update the policies and a summary of the feedback from staff (Attachment B, pages 32-35), is included as attachments.

Section 1: Bay-Delta Policy Overview

The Metropolitan Board Bay-Delta policies were last updated in 2006 and were adopted by the Board with an overarching Policy Statement:

> *"Metropolitan supports actions that promote an environmentally and economically sustainable Delta in a manner that (1) ensures adequate and reliable supplies of high-quality water consistent with statewide integrated resource management practices, and (2) results in a fair and reasonable allocation of costs among all Bay-Delta watershed beneficiaries*."

What are the Bay-Delta Policies?

From 2006 to 2009, the Board adopted several key Bay-Delta policy related items, which included a set of Policy Principles (April 2006), the Delta Action Plan (June 2007) and Delta Conveyance Criteria (September 2007). Collectively, staff refer to these set of policy actions as the "Bay-Delta Policies," which are currently structured in paragraph and policy paper format.

In support of Metropolitan's Delta Policy Statement, four central policy themes were developed: a focus on long-term sustainability; consistency with integrated regional planning, including Metropolitan's Integrated Water Resources Plan (IRP); a fair allocation of the costs of all actions required to sustain environmental and economic uses of the Delta; and continued implementation and protection of water supplies and quality through facility improvements.

How are the Bay Delta Policies currently used?

The Bay-Delta Policies contain Board direction regarding how Metropolitan staff implements all program activities related to the Bay-Delta. This includes day-to-day tasks, projects, policy development, program management, engagement with external parties, long-term planning, and key investments.

Why update the Bay-Delta Policies?

Much has changed in water resources across the State of California since the adoption of Metropolitan's Bay-Delta policies, including within the Bay-Delta region and throughout Metropolitan's service area. However, several existing policy themes are still relevant to the Delta Policy statement described above. The current policy structure, while comprehensive, is

formatted in dense text and can be challenging to reference and difficult for outside decision-makers and the public to understand.

The Board's future oversight and actions could be supported by updating the Bay-Delta policies to align with emerging trends, while preserving topics that are still relevant to the Board's ongoing direction. Board Committee discussion will be focused on soliciting feedback from the Board on a "Bay-Delta Policy Framework," with the targeted objective of aligning policies with emerging trends.

Section 2: Bay-Delta Policies Update Process

Historic Timeline: Metropolitan Bay-Delta Policies Development 2006-2009

Pre 2006: Bay-Delta Board Actions and Related Polices

Key Metropolitan Board approved policies were adopted after the passage of the Central Valley Project Improvement Act (CVPIA) of 1992, which aimed to solve water conflicts by establishing a balance between requirements for fish and wildlife, agriculture, municipal, industrial and power contractors. Board-approved policies related to CVPIA, and Metropolitan's Bay-Delta initiatives, were primarily focused on implementation of CVPIA and are described below:

- Central Valley Project Improvement Act (Board Action in 1995): focused on establishing a state and federal process for implementing key environmental objectives of CVPIA, environmental restoration, and water from State Bay-Delta Water Quality Control Plan crediting towards 800,000 acre-foot obligation in CVPIA.
- CALFED Bay-Delta Process (Board actions from 1995-2004) provided policy direction on CALFED overall program to support Southern California's Integrated Resources Plan, CALFED administration costs, governance structures and water use efficiency.
- CALFED Finance and Cost Allocation (Board action in 2004): established key finance and cost allocation guidelines, including but not limited to, beneficiaries should pay their fair share, cost shares should be equitable, and public funds should be used to generate broad public benefits.

These policies were originally drafted to help guide Metropolitan staff in the involvement in key legislation, regulations, government agency programs and Bay-Delta programs. Policy outcomes from these policies are reflected in many areas of existing state law, federal law, existing Delta government agencies jurisdiction and/or within existing State and Federal programs.

April 2006: *Metropolitan Board's adoption of the policy principles regarding long-term actions for the Sacramento-San Joaquin River Delta*

To support Metropolitan's Delta Policy Statement and the four central policy themes, long-term policy principles were developed and adopted by the Board in April 2006. A total of thirteen Bay-Delta policy principles were developed and organized into four key areas: fundamental strategic goals, long term delta vision, financing and cost sharing, and process. The four key policy areas and the associated policy principles summarized are in the table below.

2006 Policy Principles Regarding Long-term Actions for the Bay-Delta

Key Policy Areas	2006 Policy Principles
Fundamental Strategic Goals	• Improve Water Supply Reliability Consistent with Regional Integrated Resource Plan • Provide for Cost-Effective Water Quality Improvements • Provide for Comprehensive and Sustainable Environmental Protection • Complete Emergency Preparedness and Response Capability Measures
Long-Term Delta Vision	• Develop a Long-Term Management Vision for the Multiple Delta Uses • Consider All Options for Delta Land Uses, Statewide Storage Investments, and Moving Delta Water • Ensure Consistent Investments for Long-Term Reliability and Quality
Financing and Cost Sharing	• Implement Least-Cost Strategies • All Beneficiaries Must Pay Their Fair Share • Secure State & Federal Funding Contributions for Broad Public Benefits • Encourage Continued Regional Investment
Process	• Promote an Open, Collaborative Public Process • Base All Actions on Sound and Comprehensive Science

June 2007: *Board support in principle of Metropolitan's proposed Delta Action Plan*

After adopting the thirteen policy principles in April 2006, the Metropolitan Board participated in a Board retreat in April 2007 to develop a framework in the form of an action plan for Delta-related issues. This framework, referred to as "the Delta Action Plan," included Short-Term, Mid-Term, and Long-Term timeframes and focused on how to implement the thirteen policy principles that the Board previously adopted. The Delta Action Plan was centered on the current trends at the time, which included a Delta water conveyance fix, flood control related to catastrophic disasters (recent events included Hurricane Katrina and levee failure on Jones Tract), declining abundance of key Delta native fish species, and the ten (10) year action plan of then-Governor Schwarzenegger for the CALFED program.

September 2007: *Adopt criteria for Delta water conveyance options in implementation of Long-Term Delta Action Plan*

In September 2007, the Metropolitan Board adopted six key policy criteria for considering the water supply conveyance options being developed by the State of California: 1) provide water supply reliability, 2) improve export water quality, 3) allow flexible pumping operations in a dynamic fishery environment, 4) enhance delta ecosystem, 5) reduce seismic risks, and 6) reduce climate change risks. Since the State's direction on Delta water conveyance has changed under Governor Newsom's administration, including its project objectives and movement toward single-tunnel options, the six conveyance criteria above could be consolidated into four criteria: water supply reliability, operational resilience, climate resiliency, and seismic resilience.

August 2008 and January 2009: *Approve Delta Governance Principles (August 2008) and Support the Final Delta Vision Implementation Report (January 2009)*

In August 2008, the Metropolitan Board adopted Delta Governance Principles in response to the Governance principles established by the Governor's Blue Ribbon Task Force. The Governor's Blue Ribbon Task Force adopted a Vision Plan to describe the overarching vision for the future of the delta, followed by a subsequent Delta Vision Strategic Plan. These Metropolitan Governance Principles were centered around the creation, authority and functions of a proposed Delta Ecosystem and Water Council. Later the Delta Stewardship Council was established under the Delta Reform Act of 2009. The Delta Reform Act also advanced the state's coequal goals for the Delta, a more reliable statewide water supply and a healthy and protected ecosystem, both achieved in a manner that protects and enhances the unique characteristics of the Delta as an evolving place.

Timeline: Metropolitan Bay-Delta Policies Development 2021-2022

Spring 2021	Members of the Bay-Delta Committee requested that staff review Metropolitan's Bay-Delta policies.
November 2021	Staff provided a presentation to the Bay-Delta Committee with a high-level overview of the history of Metropolitan's Bay-Delta Policies and upcoming process to update those policies
Fall/Winter 2021	Staff completed technical analysis and workshops with Metropolitan internal staff partners across the organization (including Legal, External Affairs, Finance, Real Property, Water Resource Management, and Water Systems Operations) – *See discussion below on "Staff Feedback (Attachment B)" for details*
May 2022	Board Committee Discussion – Review of Policy Framework
June 2022	Board Committee Discussion – Review of Policy Principles
August 2022	Review of Draft Proposed Policies in a written Board Information Item
September 2022	Potential Board Adoption of Bay-Delta Policies 2022

Metropolitan Bay-Delta Policies Development 2021-2022

Emerging Trends (Attachment A)

As part of the review of existing policies, staff evaluated Bay-Delta-related topics ranging from statewide policies, Bay-Delta science, watershed management, land use, operations, infrastructure, community investments, and collaborative partnerships to support Metropolitan's One Water vision. The Metropolitan's One Water vision is an integrated planning and implementation approach to managing water resources for long-term resilience and reliability, meeting both community and ecosystem needs. Several of these topics have evolved, some face new pressures, others have new opportunities, and some of the topics remain similar to those addressed by the Policy Principles Metropolitan developed nearly fifteen (15) years ago. The analysis and subject matter expert feedback was captured in the "Emerging Trends" paper

(Attachment A) as a background document for use in supporting Board discussion and deliberation.

Staff Feedback (Attachment B)

Subject matter engagement, staff workshops, and several staff group meetings were completed throughout Fall 2021 and Winter 2021. Two internal staff workshops (1.5 to 2 hours in length) were completed that included PowerPoint presentations by Bay-Delta Initiatives staff, interactive brainstorming, and Jam boards to capture direct comments/feedback. Participation in these workshops spanned from 30 to 50 participants across multiple business groups, including Legal, External Affairs, Real Property, Finance, Water Resource Management, Water System Operations, and Engineering. This information was consolidated and key information from internal staff throughout the organization is captured in Attachment B.

Consolidating Trends and Feedback Received:

A crosswalk exercise was used to compare several key Metropolitan policies with the existing 2006 Bay-Delta Policy Principles. Found below are the other key policies used for the crosswalk exercise:

During the collection and evaluation of the emerging trends, crosswalk exercise and workshop feedback, it became evident that some areas were of greater influence over time. This assessment further reinforced the need to update the Bay-Delta Policies. Some key areas which were of greater influence include:

- Impacts of climate change to state water resources are of elevated importance;
- Bay-Delta science, watersheds, and land use are integral to ecosystem health, water supply reliability, and regulatory stability;
- Community partnerships and strategic investments are paramount to ensuring a reliable water supply
- Integrated water resources are not only regional, but interconnected statewide

Bay-Delta operations, infrastructure reliability, and the Delta Reform Act continued to be strong themes from the emerging trends and feedback received.

Section 3: Board Committee Discussion

Board Committee discussion will be focused on soliciting feedback from the Board on a Draft "***Bay-Delta Policy Framework***" based on emerging trends statewide and within the Bay-Delta, and how these trends support Metropolitan's One Water. In order to develop a comprehensive set of Bay-Delta policies, discussion will seek to gather feedback from the Board regarding *six key policy areas and policy principles.*

Six Key Policy Areas are listed below:

I. Statewide Water Resource Management

II. Bay-Delta Science, Watershed Management and Land use

III. Bay-Delta Operational Resilience

IV. Bay-Delta Infrastructure Reliability

V. Community Investments and Partnerships

VI. Statewide Water Resources Management Supports Metropolitan's One Water

The logic for structuring the Bay-Delta policies into these proposed six policy areas is to capture the broader nature of Metropolitan's Bay-Delta policy interests, which have evolved since the Bay-Delta Policies were originally adopted. During the development of the 2006 Bay-Delta Policies, heavy emphasis was placed on a holistic delta solution, leading to the Delta action plan and conveyance criteria. While the Delta fix has evolved to the current State administration's Delta Conveyance Project, there are several other Bay-Delta activities that support Metropolitan's interests in reliable, high-quality water supplies.

These six policy themes are intended to reflect relationships between the State policies, Metropolitan Bay-Delta policies, and other Metropolitan's existing policies. These relationships are described below:

- Key statewide policies regarding statewide water resource management (policy area #1)
- Bay-Delta specific policies (policy areas #2 through #5)
- How policy areas #1 through #5 support Metropolitan's One Water approach (policy area #6)

2022 DRAFT Policy Principles: Based on the current trends, workshops to date and crosswalk exercise, the six policy areas describe above align with the eighteen (18) Bay-Delta Policy Principles noted below, which reflect Metropolitan's day-to-day business and mission to provide safe and reliable water supply:

DRAFT Bay-Delta Policy Framework (2022)

Key Policy Areas	2022 Policy Principles	
Statewide Water Resource Management	1	Promote statewide climate adaption solutions for water resources
	2	Encourage statewide investments in regional water resources
	3	Support long-term Delta sustainability and multi-benefit outcomes
Bay-Delta Science, Watershed Management and Land Use	4	Provide for sustainable environmental protections
	5	Consider all watershed elements: upper watershed and in-Delta
	6	Implement and support sustainable Delta land uses
Bay-Delta Operational Resilience	7	Actively pursue actions to ensure flexible water operations
	8	Ensure equitable and informed water resource management
	9	Actively ensure water quality is protected
Bay-Delta Infrastructure Reliability	10	Pursue infrastructure improvements that address climate change
	11	Support water supply actions and investments for seismic resiliency
	12	Seek flexible operational and supply reliability infrastructure solutions
Community Investments and Partnerships	13	Pursue cost effective and equitable financial investments
	14	Support public engagement statewide and within Metropolitan's service area
	15	Participate and develop collaborative partnerships
Statewide Water Resource Management supports One Water Metropolitan	16	Recognize importance of the State Water Project (SWP) in supporting local supplies
	17	Use storage and transfers to effectively manage Delta supplies
	18	Pursue actions that improve reliability for SWP Dependent areas

Benefits: The benefits of restructuring the Bay-Delta Policies into the "Bay-Delta Policy Framework" include:

- The Framework reflects the current and future issues and trends related to the Bay-Delta and its connection to Statewide policies and Metropolitan's service area;
- The policies can be easily articulated by Board and staff;
- The proposed approach could provide greater ease of reviewing and updating Bay-Delta policies as needed;

- More effective consideration of all applicable policies.

Delta Conveyance Criteria Update

The original six Delta Conveyance Criteria were adopted in 2007. These criteria should be updated to align with the current planning effort's focus on providing climate change and seismic resilience. Staff recommend that the following four conveyance criteria should be included in place of the existing six:

- Address anticipated rising sea levels and other reasonably foreseeable consequences of climate change and extreme weather events.
- Minimize the potential for public health and safety impacts from reduced quantity and quality of SWP water deliveries south of the Delta resulting from a major earthquake that causes breaching of Delta levees and the intrusion of brackish water into areas where SWP pumping facilities operate in the southern Delta.
- Protect the ability of the SWP to deliver water when hydrologic conditions result in the availability of sufficient amounts, consistent with the requirements of state and federal law, including the California and federal Endangered Species Acts and Delta Reform Act, as well as the terms and conditions of water delivery contracts and other existing applicable agreements.
- Provide operational flexibility to improve aquatic conditions in the Delta and better manage risks of further regulatory constraints on SWP operations.

Next Steps

Following discussion with the Committee, staff will incorporate feedback received into the Draft Bay-Delta Policy Principles. The aim would be to draft updated Bay-Delta policies that are comprehensive, yet concise, and easy to understand. If the Board chooses to update its policies, the Board could potentially review a written draft in a Board Information Item in August and consider adoption in a Board Action Letter in September 2022.

Bay-Delta Policies Update Process

Attachment A: Emerging Trends

Policy Area 1: Statewide Water Resource Management

Climate Change

Current Trends

Climate change is affecting California in many ways, several of which impact our water resources: sea levels are rising, snowpack is decreasing, and water temperatures are increasing. In the future, droughts are expected to become more frequent and more severe, and storm intensities are expected to increase. Compounding the hydrologic conditions is the increased wildfire risk to upper watersheds and headwaters. These changes affect our ability to meet crucial water management objectives such as ensuring reliable water supply and quality, managing floods, and protecting ecosystem functions. These climate change trends are anticipated to continue, posing a prolonged threat to Metropolitan's State Water Project ("SWP") supply, transfer/exchange supplies, local supply production and long-term reliability of Colorado River supplies.

Several approaches for addressing climate change are underway including: new water storage projects, new water conveyance project, habitat restoration projects (both in the Delta and upper watershed), water conservation, local regional projects, and science initiatives. Key State-led water related initiatives include the: Governor's Water Resilience Portfolio, Biodiversity Executive Order, State Water Resources Control Board's Water Quality Control Plan ("WQCP"), Delta Stewardship Council's ("DSC's") Delta Plan, and DSC's Delta Adapts. These state-led initiatives, plans, and policies will shape implementation of climate adaptation strategies statewide. Bay-Delta climate adaptation strategies will need to address future state and federal regulations for water supply, water quality, and environmental protection.

Importance to Metropolitan

Climate change poses a risk to both Metropolitan's local and imported water supplies, including the Bay-Delta and local water supplies. To ensure a reliable water supply for Metropolitan, Bay-Delta climate adaptation solutions are needed, such as infrastructure reliability, ecosystem management and flood protection.

Statewide Integrated Water Resources

Current Trends

The new and continuing challenges of California's diverse and extreme hydrologic conditions require local agencies to use new and innovative methods for managing water. Growing populations, urban development patterns, changing regulations, and climate change require water managers to adopt a range of solutions. The costs, benefits, and impacts of implementing a range of water management strategies in project-specific locations could vary significantly depending on local objectives and project level complexities.

Metropolitan has a long history of innovation and support for local and regional water supply projects. Over the last several decades, Metropolitan has invested $1.5 billion in conservation rebates and programs, and local resources program incentives. These investments have resulted in 7.6 million acre-feet of cumulative conservation savings and local supply production. Where Metropolitan has been able to further leverage other funding sources, our ability to successfully complete local and regional projects has been further enhanced. For example, in 2018 Metropolitan co-funded six potable reuse projects and one agricultural reuse study with the Water Research Foundation (WRF). Metropolitan's nearly $1 million in co-funding supports WRF's $8 million Advancing Potable Reuse Initiative and matches $3.5 million in State Water Resources Control Board grant funding.

Solving water supply challenges in a changing environment requires a toolbox of approaches, including continued reliance on imported supplies, as well as local and regional projects. Local and regional supplies are needed to improve local resiliency, and significant investment in planning and implementation of local water supply projects is needed.

Importance to Metropolitan

State and Federal investments in regional water supply planning and projects are vital to Metropolitan's ability to continue such investments and to support regional water resiliency.

Bay-Delta Sustainability

Current Trends

With increasing water scarcity and more competition for limited water resources, sustainability and multiple benefit outcomes have become increasingly important in the Delta. Long-term sustainability of the Delta and water supply reliability are directly linked.

Metropolitan was involved in the Environmental Water Account approximately 20-years ago, which made water available through water purchases for environmental purposes. More recently, the State Water Resources Control Board is proposing a similar approach through regulatory mechanisms and mandatory actions as part of the Water Quality Control Plan update. Regulatory approaches rarely provide multiple benefits because regulatory agencies' authority limits the range of potential actions. As an alternative, the water users are promoting the Voluntary Agreements, which are supporting sustainable and multiple benefit actions, enabling a larger range of management actions not available through regulation alone.

There are structural hurdles to achieving multiple benefits. For example, ecosystem projects are difficult to complete due to challenges in obtaining permits, which increases project timelines costs. There have been some efforts to improve permitting efficiency, including the Governor's initiatives: "Cutting the Green Tape", the Biodiversity Executive Order and the recent CEQA exemption for habitat projects, all of which should be coordinated and fast-tracked. Given recent challenges with the Lookout Slough Tidal Habitat Restoration and Flood Improvement Project, which is taking more than a year to certify consistency with the Delta Plan, the DSC consistency determination process and policies should be re-evaluated to ensure timely implementation of ecosystem projects. Emphasis on functional flows and adaptive management continue to be themes for water management.

Importance to Metropolitan

Long-term Delta sustainability is essential to supporting Metropolitan's Integrated Regional Planning (IRP) and supply portfolio. State Water Project (SWP) supplies are used to replenish Metropolitan's dry-year storage reservoirs, storage programs and local groundwater basins. SWP supplies support the long-term success of local supply development and maintenance. SWP supplies also support SWP Dependent area demands in the service area.

Policy Area 2: Bay-Delta Science, Watershed, and Land Use

Bay-Delta Science

Aquatic Species

Current Trends

Since the 1980s, there has been increasing regulation of the SWP. These regulations include multiple biological opinions (BiOps) under the federal Endangered Species Act (ESA), incidental take permit (ITP) under the California Endangered Species Act (CESA), and the 1995 Water Quality Control Plan and its implementing water rights decision, D-1641. Several native fish species in the Bay-Delta are listed under the ESA and/or CESA, including Delta smelt, longfin smelt, Chinook salmon, green sturgeon and steelhead. The Bay-Delta Water Quality Control Plan also protects fish and wildlife as one of several beneficial uses of water. As a result of these regulations and others, there has been a decrease in SWP and Central Valley Project (CVP) export supplies.

The SWP operates in an environment vastly different from the conditions under which native aquatic species evolved. Physical, hydrological, and biological alterations present novel conditions that result in stressors on Delta species that predate the SWP. During the last 200 years, human activities have dramatically altered and reshaped the habitat upon which species depend for survival. These activities, as well as others, have reduced and continue to reduce the species likelihood of survival and recovery.

The Bay-Delta is a dynamic tidal environment, therefore Interactions of multiple stressors (e.g., temperature, contaminants, habitat loss or degradation, climate change) will have various impacts on aquatic species. The population of key species, which are of commercial, recreational and cultural value, have implications on decisions related to real time water project operations and ultimately water supply.

Changes in the magnitude and timing of flow has changed over time as a result of major physical alterations of the Delta, as well as increasing water use throughout the watershed. These changes will continue as a result of climate change and other factors. CVP and SWP water project operations are just two of the factors affecting species in the Delta. Over the last decade, entrainment effects of the SWP and CVP have been low. Scientific literature supports that there is no single cause of the recent declines in the abundance of some species, rather there are multiple stressors interacting in ways that are not fully understood. Methods and modeling tools for studying effects of project operations on species have advanced over the last decade, while tools and methods to study the effects of non-flow stressors on aquatic species are lagging.

There are multiple collaborative processes underway today to enhance science investigations addressing management questions, improve adaptive management and improve decision-making. The complexity and extent of regulatory processes has increased, and the need for sound science to support decision-making has increased.

Importance to Metropolitan

ESA and CESA listing of Delta fish species has resulted in increasingly more stringent regulations on the SWP operations from both the state and federal fish agencies and the State Water Resources Control Board (State Water Board). These regulatory requirements impact Metropolitan's water supply reliability. Addressing science and management actions related to listed fish species supports Metropolitan's water supply reliability.

Delta Ecosystem / EcoRestore / Habitat Restoration

Current Trends

Today's Delta hardly resembles what it did 150 years ago. During the Gold Rush, Delta channels were straightened, fertile floodplains lost, and riparian forests were replaced by steep levees. The Delta's rich marshlands were reclaimed for agriculture, and with economic growth came invasive plants and animals.

EcoRestore is a State initiative to help coordinate and advance at least 30,000 acres of habitat in the Sacramento-San Joaquin Delta. The program provides a broad range of habitat restoration projects, including aquatic, subtidal, riparian, floodplain, and upland ecosystem. There is 25,000 acres associated with existing mandates for habitat restoration, pursuant to federal biological opinions to support native fish species, including tidal marsh, floodplain, and fish passage improvements. These projects are funded by the state and federal water contractors to meet regulatory requirements. There is 5,000 acres of habitat restoration enhancements throughout the Delta supported by Prop. 1 grants. Funding will come primarily through the Delta Conservancy, the Department of Fish and Wildlife, and the Department of Water Resources.

The EcoRestore program currently includes 32 multi-benefit projects that are in planning, construction or are completed, at a cost of nearly $500 million to date. Completion of these projects is estimated to cost $750 - $950 million, with approximately 50% of costs from SWP and 50% from other sources. These projects trend towards increased emphasis on science, robust monitoring, modeling, and Adaptive Management/Structured Decision-Making. Holistic nature-based solutions may have potential to improve ecosystem services, while also addressing habitat, drought, water quality, wildfires, and carbon sequestration.

Importance to Metropolitan

Sustainable and resilient water supplies rely, in part, on the health of the Delta ecosystem. Requirements for restoring habitat for Delta smelt, Chinook Salmon, and other species are included in the BiOps and ITP for operation of the SWP. If the Voluntary Agreements move forward as an alternative implementation approach for the current Water Quality Control Plan update, habitat restoration will be an important component to protect water quality and beneficial uses of water. Protection and restoration of important Delta ecosystems is included in numerous state initiatives

including the Delta Vision, Delta Adapts, California Biodiversity Initiative, California Water Action Plan, and Water Resilience Portfolio.

Watershed Management

Integration and Innovation Land / Water Interface / Multi-benefit

Current Trends

The Delta region is at the intersection of many social, political, environmental and climate related factors, as a result Delta issues are significantly complex uncertain and ambiguous. Developing Delta solutions will require innovation to be most effective. Policies which embrace uncertainty will lead to greater innovation and integration. Fostering innovative Delta solutions will require a commitment to adaptive management as new science and engineering discoveries emerge. Metropolitan has been involved in the development of several innovations in the Bay-Delta, including the use of environmental DNA, SmeltCam and effective population size, which are methods to monitor species distribution and abundance. Metropolitan has also supported the use of Structured Decision Making and life cycle modeling, which are approaches to management and decision-making that makes decisions more transparent and quantifiable. Another example of recent innovation is Metropolitan's Delta smelt and Native Species Preservation Project, to evaluate the suitability of utilizing the Delta island properties currently owned by Metropolitan to support Delta smelt supplementation efforts. Continued innovation in the future will be key to developing Delta solutions.

Importance to Metropolitan

Metropolitan's ability to provide water in a sustainable and reliable manner is dependent on a healthy Delta ecosystem. The development of integrated Delta solutions will require a commitment to a fully integrated approach using the latest and evolving science and engineering solutions. New scientific discoveries can lead to new and innovative solutions with better integration and benefits for a wide variety of stakeholders. A commitment to the development and use of decision support tools is also important for developing Delta solutions.

Upper Watershed / Forestry Management

Current Trends

With much of the state's water supply originating in the mountains as precipitation on forested landscape, the health and management of the upper watersheds are critically important to California's water quality and water supply. High intensity, large scale fires significantly degrade the watershed leading to erosion, flash flooding, resulting in downstream sediment deposition which can impact habitat and water storage.

More than half of the watershed area above Lake Oroville has been burned over the last three years (2019-2021). The North Complex Fire (2020) and the Dixie Fire (2021) alone burned nearly 1.3 million acres in the Feather River watershed. The erosion that may result from these fires could impact storage at Lake Oroville. The potential near-term risk includes impacts to water quality and reservoir operations on the SWP that could impact water supply and habitat components for key species as well as increased risk of flooding. Watershed management and restoration needs to be implemented to protect areas already burned and lessen the risk to remaining areas. Long-term watershed restoration

opportunities should be evaluated specifically those that: may provide climate change adaptation, compensate for loss of snowpack, may reduce the impacts of variable precipitation patterns on runoff, water quality and water temperature. The role of healthy watershed soils to increase holding capacity of the system and provide water supply benefits and species protection in an uncertain climate future should also be evaluated.

Partnerships will be essential for implementing watershed protection and restoration activities. There are many beneficiaries in the Feather River watershed that could participate in protection and restoration activities. Department of Water Resources (DWR) and State Water Contractors (SWC) would be key watershed partners with Metropolitan for the challenges described above. State initiatives such as the California Biodiversity Initiative and the Water Resilience Portfolio also provide potential opportunities for partnership and funding.

Importance to Metropolitan

Upper watershed protection will be a key adaptation strategy for maintaining and protecting a sustainable Delta under climate change over the long-term. Potential benefits of watershed management include water supply, water quality, attenuated runoff variability, avoided cost of fire impacts and habitat protection for key species.

Land Use

Delta Land Use

Current Trends

Land use in the Delta is primarily agriculture. Over time, Delta islands have lost as much as 25 feet of land surface elevation due to oxidation, erosion, and burning of rich organic peat soils. This ongoing land subsidence, coupled with sea level rise and potential seismic events, increases risks to the levee system, water supply reliability, and Delta ecosystems. Land subsidence in the Delta is also a major source of greenhouse gases ("GHG's").

Soil loss has been driven by oxidation from dewatering and conventional agricultural practices, wind and rain erosion, and burning of peat. Rewetting soils through reestablishment of wetlands, floating marsh, or planting rice can sequester carbon and reduce or reverse soil loss. Regenerative agricultural also has potential to sequester carbon and reverse subsidence, while retaining agriculture on the islands. In addition to sequestering carbon, reversing subsidence, and contributing to reliability of levees and water supply, these nature-based solutions have potential to improve ecosystem services, such as habitat, water quality, reduced temperatures, more efficient nutrient and water cycling, and farm profitability. In 2016, Metropolitan purchased approximately 20,400+ acres in the Delta (Bouldin/Bacon Islands, Holland (portion)/Webb Tracts, and western portion of Chipps Island). In 2021, Metropolitan sold its interest in Chipps Islands (243 acres) to DWR. These properties have a total of about 56.16 miles of levees that are maintained and monitored through four Reclamation Districts (RD #756, RD #2025, RD #2026, and Rd #2028). Currently Metropolitan leases farmable acres to five sublets while Metropolitan develops long-term opportunities.

Long-term opportunities for land use on Metropolitan's Delta islands properties include pilot projects and scientific investigations to evaluate strategies for carbon sequestration, floating organic marshes, sustainable agriculture, compensatory mitigation, mitigation banks, habitat restoration for native

aquatic species, native fish species preservation, and reduction in stressors on listed fish species. These types of activities could include collaboration with local, state and federal agencies, university researchers, in Delta neighbors and other interests. These types of activities could inform future more sustainable land use decisions in the Delta.

Importance to Metropolitan

Delta islands ownership makes Metropolitan a direct stakeholder in the Delta. The Delta Islands provide a unique opportunity for research, innovation and collaboration with other stakeholders to develop sustainable strategies for Delta land use. Reducing risks to the levee system is key to managing risks from changing climate, water supply reliability, preservation of agriculture, and protection of important habitats in the Delta. Nature-based solutions can increase carbon sequestration and restore important ecosystem services such as efficient water and nutrient cycling, improved water quality and water holding capacity, and temperature modulation.

Policy Area 3: Bay-Delta Operational Resilience

Flexible Operations

Current Trends

Current operations of the State Water Project and Central Valley Project water diversion facilities in the south Delta are subject to prescriptive flows and numeric regulatory standards to protect listed fish species and other aquatic organisms. However, these standards do not take into account the natural variability of runoff patterns, tidal cycles, turbidity, temperature and other factors that significantly affect fish migration and salvage of fish at the state and federal water diversion facilities. In an effort to minimize fish salvage, efforts are being made to fund and implement real-time fish monitoring/tracking to inform state and federal agencies regarding entrainment risk and export rate. Advancements in technology and monitoring should be pursued and incorporated into real-time operations criteria. Example technologies to consider include the following:

- Improved AR forecasting and runoff forecasting
- Forecast-informed Reservoir Operations (FIRO)
- Improved fish monitoring including steelhead
- AI modeling of aquatic wildlife (USGS)
- Improved rapid genetic testing of salvaged salmonids
- Use of true Adaptive Management and Structured Decision-Making processes

Importance to Metropolitan

Under more restrictive and prescriptive Delta operations, opportunities to move water are being missed. More dynamic operations would allow for additional capture and storage of water when excess flows are present, and it is safe to do so. There is a need to protect, incorporate and coordinate more flexible/real-time operating criteria where possible in upcoming regulatory processes, including ongoing consultation on the Long-Term Operation of the CVP and SWP, the

Incidental Take Permit for the Long-Term Operation of the SWP, the Water Quality Control Plan for the Bay-Delta, potential Voluntary Agreements, and for new projects coming online like New Delta Conveyance. Flexibility will also be needed to pursue transfers/exchanges and other creative supply opportunities.

Water Rights/Measurements and Reporting

Current Trends

The Water Board issued water diversion curtailments in the 2012-2016 and the 2020-2021 in response to droughts. The Water Board is issuing water diversion curtailments more often than has occurred historically, and this trend is expected to continue. Metropolitan and the State Water Contractors have been supportive of the State Water Resources Control Board's ("Water Board") issuance of water curtailments to protect stored water supplies.

In 2014, the State Water Contractors filed a complaint against in-Delta water users that were unlawfully diverting stored water supplies. While the Water Board did not pursue the complaint, the complaint significantly contributed to the technical and policy discussion about unlawful diversions. Metropolitan also supported Senate Bill 88, which was legislation, now law, requiring the direct measurement and reporting of water diversions. This law was important because the Water Board has difficulty calculating the supply of water available for diversion because of a lack of sufficient information about the actual quantity of water diverted and used at each of the thousands of water diversions throughout the watershed, making enforcement very difficult.

Metropolitan purchased approximately 20,000 acres in the western Delta (Bouldin/Bacon Islands and Holland/Webb Tracts) in 2016. These properties have up to 91 siphons that divert water from the adjacent waterways on-island for agriculture purposes. Consistent with SB 88, Metropolitan is in the process of metering a total of 88 siphons and reporting the appropriative and riparian water diversion use to the SWRCB Delta Watermaster annually.

In addition, the Delta Watermaster has introduced an Alternative Compliance Plan of utilizing OpenET that uses a series of satellite imageries to estimate crop consumptive use through evapotranspiration measures. It has not been shown that Open ET has the ability to comply with Water Code section 1840 et seq for mandatory reporting of direct diversions. While Metropolitan has demonstrated its compliance plan of installing meters on each of its siphons (prioritized by most use and highest capacity use), Metropolitan has agreed to support the Water Master's efforts to validate Open ET regarding accuracy at the water diversion level in few remaining areas where meters have not been installed.

Importance to Metropolitan

When the watershed is dominated by ocean water and previously stored water releases, the diverters in the lower watershed and Delta are diverting stored water supplies that they have no right to divert. As a result, the SWP must release more stored water to continue to meet D-1641, thereby effecting the availability of SWP supplies for delivery to Metropolitan and the other water contractors.

As a landowner, Metropolitan must comply with mandatory reporting requirements regarding water diversion and use. As such, Metropolitan has made a significant investment in meters to demonstrate the feasibility of the technology. Metropolitan has an interest in making sure the Water Board has the

information it needs to protect stored water supply from unlawful diversions, as well as find cost effective and accurate approaches for reporting compliance.

Bay-Delta Water Quality

Current Trends

The State Water Project and the federal Central Valley Project have primary regulatory responsibility for meeting water quality standards for salinity and outflow in the Delta through Water Right Decision 1641. At the same time, Metropolitan relies on the SWP and Delta to provide drinking water with acceptable levels of salinity, bromide, organic carbon and nutrients, as well as emerging water quality concerns like endocrine disruptors and toxins from harmful algae blooms, to support local water resources programs including blending with Colorado River water, water recycling and groundwater recharge. To manage the regulatory burden placed on the SWP and Metropolitan's water supplies, it is important to include source control for water quality so the SWP will not be responsible for using valuable stored water supplies to dilute contaminants discharged by others.

Metropolitan has a long history of working to improve water quality in the Delta through participation in many forums, including Central Valley Regional Water Quality Control Board (Regional Board) programs such as the Delta Regional Monitoring Program, CV-SALTS, Delta Nutrient Research Plan, Irrigated Lands Regulatory Program, and waste discharge permitting processes. As a member of the California Urban Water Agencies (CUWA), Metropolitan was instrumental in raising awareness of the water quality impacts of municipal wastewater discharges to the Delta, including discharges from the Sacramento Regional County Sanitation District (Regional San), and participated in the permitting processes to provide technical information and science studies to support more stringent permit requirements. The Regional Board adopted a more stringent discharge permit for Regional San in 2010 that includes limits on nutrients and tertiary filtration requirements. Regional San launched a major wastewater treatment plant upgrade that includes the installation of biological nutrient removal (BNR) treatment that has been operational since April 2021. This treatment upgrade removes 99% of the ammonia from the wastewater and substantially reduces the load of nitrogen from the treatment plant. Regional San is scheduled to complete their wastewater treatment plant upgrade with the installation of tertiary filtration by 2023. Metropolitan has also funded numerous water quality monitoring and science investigations to better identify and define water quality concerns in the Delta.

Importance to Metropolitan

Water quality conditions in the Delta and State Water Project are important to protect Metropolitan's drinking water quality, to support local resources programs in Metropolitan's service area, and protect the Delta ecosystem.

Policy Area 4: Bay-Delta Infrastructure Reliability

Conveyance

Delta Conveyance

Current Trends

The Delta is at the center of California's water distribution system. Two-thirds of California's water originates in the Sierra Nevada Mountains as snowpack, eventually flowing through the Delta. In the Delta watershed, there are thousands of water diversions that rely on this supply, including the State Water Project and the Central Valley Project. Delta conveyance refers to the vast network of waterways in the Delta that move fresh water to users within the watershed, as well as statewide including the Bay Area and southern California. The New Delta Conveyance Project, as currently proposed, moves water from an additional point of diversion on the Sacramento River through a tunnel under the Delta to the existing SWP export facilities, and is operated in coordination with the State Water Project's existing facilities.

The plan to route water around the Delta to the State Water Project is not new. It was originally part of the Master Plan for the State Water Project, but was not included in the initial construction. The proposal was considered in the 1980s, and more recently in the Bay Delta Conservation Plan and California Water Fix. The New Conveyance Project is smaller than the previous proposals, with a single 6,000 cubic feet per second (cfs) tunnel.

New Delta Conveyance is important to the State Water Project because the State Water Project relies on the Delta's natural channels to convey water, making it vulnerable to sea level rise and earthquakes. Upgrading the State Water Project infrastructure protects against these threats and secures the longevity of the State Water Project and the future reliability of State Water Project supplies. The purpose of the New Delta Conveyance Project is to modernize the aging State Water Project infrastructure in the Delta to restore and protect the reliability of State Water Project water deliveries in a cost-effective manner, consistent with the state's Water Resilience Portfolio. And in doing so, allow the Department of Water Resources to address sea level rise and climate change, minimize water supply disruption due to seismic risk, and provide operational flexibility to the State Water Project to allow it the ability to better meet fishery and water quality regulatory requirements.

Importance to Metropolitan

Southern California's plan for a reliable water supply future depends on a reliable SWP supply and conveyance system with the capability to move water into storage in wet periods and more flexibility to manage around fishery needs.

The primary DCP project benefits were compared to future conditions consistent with the Notice of Preparation objectives of climate resiliency, seismic resiliency, water supply reliability, and operational resiliency.

There are member agencies in Metropolitan's service area, specifically in Ventura County, parts of northwestern Los Aneles County, the San Gabriel Valley, and some Inland Empire areas, whose supplemental imported water supply (eastern Sierra/northern Sierra) depends entirely on water that

comes from the SWP. Water from the SWP is also important for mixing with Colorado River supplies due to its lower salinity content and it is important for Metropolitan's groundwater banking activities.

Statewide Conveyance

Current Trends

The California Aqueduct was built to account for natural subsidence however groundwater pumping during extreme drought events have been causing the aqueduct to subside much quicker and deeper than anticipated. During the extreme drought of 2014-2017, some areas experienced over 2 feet of non-recoverable subsidence and costly rehabilitation and recovery projects are being prepared. Recent observations indicate that subsidence during the current drought is still ongoing but at a slower pace than the previous drought.

California enacted the Sustainable Groundwater Management Act (SGMA) in 2014 as a regulatory solution to help stabilize groundwater basins across the state and to sustain investments in subsidence recovery moving forward. SGMA directs local agencies to work together to create Groundwater Sustainability Plans (GSPs) with a goal of long-term basin sustainability by 2040. GSPs in critically over-drafted basins were due to DWR in January 2020 and medium/high priority GSPs were due by January 2022. DWR has reviewed the GSPs and the California Aqueduct Subsidence Program, a DWR program not involved with the review of the GSPs, is engaging with the groundwater sustainability agencies (GSAs) to include in their GSPs reasonable subsidence rates and projects to reduce subsidence.

Importance to Metropolitan

Current subsidence results in increased operations and maintenance costs, the reduction of delivered water during peak periods and the reduced ability to shift power loads. Short-term rehabilitation projects are expected to cost about $450 million and are already ongoing, while costs for long-term recovery projects are in the billions of dollars order of magnitude.

Metropolitan has submitted letters of comment to several GSAs regarding their GSPs, recommending that the GSAs maintain groundwater extraction at safe yield levels, especially near the California Aqueduct. Metropolitan also recommended that GSAs work with the DWR California Aqueduct Subsidence Program to incorporate monitoring and regular reporting of land surface elevations.

Statewide Storage

Current Trends

Statewide storage resources have and will continue to play an increasingly important role in ensuring the reliability of supplies from the SWP. Historically, snowpack has played a critical role in managing California's water resources. On average snowpack supplies about 30 percent of California's water needs[1] and serves as a "frozen reservoir" to store winter precipitation for use throughout the rest of the year. Climate research conducted by the UCLA Center for Climate Science shows a potential decrease in Sierra snowpack volume of 30 to 64 percent by the end of the century. In addition, snowmelt is expected to occur 25 to 50 days earlier in the year. With more winter precipitation falling

[1] https://water.ca.gov/News/News-Releases/2021/Dec-21/DWR-12-30-21-Snow-Survey#:~:text=On%20average%2C%20the%20Sierra%20snowpack,as%20California's%20%E2%80%9Cfrozen%20reservoir.%E2%80%9D

as rain and earlier snowpack melting, additional pressure will be placed on statewide storage to balance the state's needs for water supply, ecosystems, and flood-control.

With the anticipated losses of snowpack storage, changing runoff patterns, and the need to implement Groundwater Sustainability Plans under SGMA, water managers are seeking ways to more actively manage surface water and groundwater supplies together. DWR is currently evaluating the potential benefits of Flood-Mar projects throughout the state. Flood-MAR involves harnessing flood water from rainfall or snow melt and redirecting it onto agricultural, working landscapes, and managed natural lands to recharge groundwater. Groundwater provides about 40 percent of the state's total water supply on average and serves as a buffer against the impacts of drought and climate change.

Federal, state, and local agencies are also working to find ways to better manage surface water reservoirs that balance the needs for flood control, water supply, and power generation. Opportunities to implement Forecast Informed Reservoir Operations (FIRO) are being identified and evaluated for several reservoirs across the state. FIRO is a reservoir-operations strategy that better informs decisions to retain or release water by integrating additional flexibility in operation policies and rules with enhanced monitoring and improved weather and water forecasts.

The SWP and CVP have water storage projects throughout the state. Both the SWP and CVP water delivery systems rely on runoff and surface reservoir storage releases in areas upstream of the Delta to deliver contracted water via the Sacramento and San Joaquin Rivers to Delta export pumps in the south Delta. Regulatory standards in recent decades have changed how the SWP and CVP operate, considerably reducing the long-term average amounts of water conveyed through the south Delta. Additionally, increasing pressure has been placed on the CVP and SWP reservoir systems as a result of climate change as described above. Increased operational flexibility and integration with new projects like New Delta Conveyance and Proposition 1 projects, like Sites Reservoir, will be needed in the future as the timing and magnitude of flows change.

New storage programs are being developed statewide that offer opportunities for new partnerships, additional flexibility through transfers and exchanges, and water supplies for environmental needs. The Water Quality, Supply, and Infrastructure Improvement Act of 2014 known as Proposition 1, designated 2.7 billion dollars for investment in public benefits associated with new water storage projects. The California Water Commission (CWC), through the Water Storage Investment Program (WSIP) is responsible for administering those funds. Only projects that improve the operation of the state's water system, are cost effective, and provide a net improvement in ecosystem and water quality conditions in the Sacramento-San Joaquin Delta are eligible for WSIP funding. Public benefits provided by a project may include water quality improvements, flood control benefits, emergency response, recreational opportunities, and ecosystem benefits. At least 50 percent of the total public benefits funded for a project must provide ecosystem improvements. The CWC has issued maximum conditional eligibility determinations (MCEDs), which is the amount of Proposition 1 funding available to a given project, for seven projects that collectively would boost California's water storage capacity by 2.77 million acre-feet. The projects range from expanding existing reservoirs to boosting groundwater storage to building 21st century surface storage facilities.

Importance to Metropolitan

Effective statewide management of surface water and groundwater resources will be essential in maintaining the reliability of SWP supplies in the face of climate change.

Water Energy Nexus

Current Trends

Water and energy are often managed separately, despite the important links between the two. Water is used in the production of nearly every major energy source. Likewise, energy is used in multiple ways and at multiple steps in water delivery and treatment systems, as well as wastewater collection and treatment.

About 12 percent of California's total energy use is related to water. Energy is required to pump water from underground aquifers, convey water from one place to another, treat drinking water, and for customer end-uses such as heating and cooling. The SWP is one of the largest single consumers of electricity in the state, but also generates a large amount of electricity at its reservoirs and generating stations. The hydropower generated is a renewable energy source that reduces the GHG emissions of generating power.

In recent years, California's energy grid has faced more frequent challenges due to climate change fueled heat waves and wildfires. In addition, California's dramatic increase in solar and wind generation and complex GHG reduction policies are creating new and growing challenges for the state's grid operator and electric utilities. The SWP has historically provided significant support to California's electricity grid and is playing an increasingly essential role in helping to integrate weather-dependent renewable resources. The SWP offers demand response through the Participating Load Agreement, which allows the California Independent System Operator to interrupt and curtail the SWP's power load, or dispatch SWP power generation assets when those actions may be needed to relieve system emergencies or ensure reliability across the grid.

In addition, DWR is analyzing what further operational changes, capital investments or system retrofits may be possible for the SWP to help address California's changing water and energy needs. And the Natural Resources Agency, in collaboration with the California Energy Commission and DWR, are studying the opportunities and constraints related to the SWP and its potential contributions to achieving the state's climate goals in its implementation of SB 49 (Skinner, 2019).

Importance to Metropolitan

Meeting the resource challenges of the 21st century will require a more integrated approach to managing water and energy. Metropolitan's water supply relies on having reliable energy to provide pumping at the State Water Project facilities.

Seismic Risk/Emergency Preparedness/Delta Freshwater Pathway

Current Trends

Seismic hazard evaluations within the Delta are a subject of interest from public, private and academic entities because key Delta channels are currently used to convey water supplies from northern California to areas south of the Delta. Consequently, there are a number of initiatives currently underway that support seismic resiliency in the Delta.

Metropolitan staff worked with DWR to complete strategic and tactical flood emergency response documents in the Delta region, including the DWR Delta Flood Emergency Management Plan (DFEMP), the California Governor's Office of Emergency Services (CalOES) Northern California Catastrophic Flood

Response Plan (NCCFMP), and the DWR/USACE Delta Flood Emergency Integration Plan. These documents provide broad policy and strategic guidance to support flood fight implementation of large-scale flood emergencies and tactical guidance to support ongoing flood fight operations in the Delta region, including development of the Emergency Freshwater Pathway in the event of major levee and island failures which could otherwise suspend water exports extensively.

The DFEMP and related documents are subjected to field or tabletop exercises to confirm or identify deficiencies in DFEMP implementation methods, for the purposes of improving plan preparedness, response, and recovery. DFEMP field implementation methods are applied against levee configurations influenced by changes in levee, island, and flood elevations, and sea level effects of climate change, which are the subject new Delta levee standards under evaluation by Reclamation Districts. Seismic hazard and seismic levee stability analysis are conducted to confirm levee performance and facilitate DFEMP responsiveness. Watershed fire control and channel sedimentation removal measures under the CalOES NCCFMP ensure river channel readiness for reservoir releases that support initial operations of the Emergency Freshwater Pathway.

DWR currently maintains significant quantities of emergency rock stockpiles and large sheet pile for the closure of deep levee breaches in the Delta region. These stockpiles are being monitored to ensure adequate capabilities in the event of major levee failures. Stockpiles are also in place for the restoration of levee freeboard in the event levee slumping during a major earthquake event.

Importance to Metropolitan

The water supply from the Sacramento-San Joaquin Rivers Delta serves up to a third source of water supply for Metropolitan's service area and its Member Agencies. In addition, these supplies provide for good water quality that is blended within Metropolitan's service area in order to meet water quality regulatory requirements.

Emergency preparedness in the Delta is important because conditions can exist where moderate to severe earthquakes in or near the Delta region, can result in multiple levee and island failures. This would result in saltwater intrusion into the Delta to the extent freshwater exports would not be possible for extended periods of time. Emergency preparedness is essential to address this threat to Metropolitan's water supply and water quality reliability. The DWR DFEMP and its Emergency Freshwater Pathway, along with its related documents, provides capability to resume significant exports in less than six months.

Policy Area 5: Community Investments and Partnerships

Cost Effective and Beneficial Solutions

Current Trends

Metropolitan cannot complete large multi benefit projects without partners and multiple funding sources, thereby making these projects cost effective. There are several beneficial and cost-effective projects currently being proposed that include, but are not limited to, the following:

Sites Reservoir

Sites is being proposed as a 1.3 to 1.5 million acre-feet off stream reservoir located in Glenn and Colusa counties, 60-miles north of Sacramento. Sites first emerged as part of the second stage of the SWP proposed in the 1980s, which included multiple water related projects. In 1996, Sites was further analyzed as part of the CALFED Bay Delta Program. It was also included in the Phase 8 settlement of the implementation of the 2000 Water Quality Control Plan. In 2020, Sites was identified as a priority in the Governor's Water Resilience Portfolio. $80 million federal share of planning and engineering costs of Sites Reservoir has been approved, which ensures a dedicated portion of the Project benefits to satisfy the federal government's interests in meeting the future water needs of the environment, farms and cities across California. Funding for planning and development of Sites Reservoir is provided by participating agencies, with construction costs up to 50% potentially paid for by Prop 1 Water Bond funds, and potentially 25% of costs to be borne by federal government. More than 30 water agencies from across California have signed on to provide funding for their share of the construction and operation costs of Sites Project in exchange for a proportionate percentage of the annual water supplies.

Delta Conveyance

Delta Conveyance is a project that has existed in multiple forums over many decades. More recently, the effort to permit a new point of diversion on the Sacramento River was included in the Bay Delta Conservation Plan process, and then the California Water Fix project. The New Conveyance project would construct a single 6,000 cfs tunnel with intakes on the Sacramento River to be operated jointly with the existing State Water Project's existing water diversion facilities in the south Delta. The New Conveyance project would enhance State Water Project operational flexibility when operations in the south Delta are limited by regulatory constraints and prepare for the long-term effects of climate change and sea level rise.

Delta Levees

The Delta Levees System Integrity Program protects the public and water supply for 27 million people while enhancing Delta habitat. This funding will support activities including State Operations and Local Assistance grants for levee maintenance, repairs, improvement, habitat mitigation, and enhancement projects in the Sacramento-San Joaquin Delta. The DLIS program is of critical importance for achieving the goals in the California Water Resiliency Portfolio, DWR's Strategic Plan, and the Delta Plan. The funding ensures the state's continued investment in the Delta and contributes toward achieving the co-equal goals by providing a more reliable water supply for California while protecting, restoring, and enhancing the Delta ecosystem.

Flood Emergency Preparedness

The Delta Grants & Flood Emergency Preparedness, Response, & Recovery Program support local assistance grants and two existing positions to improve regional self-reliance by enhancing existing flood emergency preparedness, response, and recovery capabilities of local agencies within the Delta. This funding will support existing positions to manage $5 million in grants used to improve regional self-reliance by enhancing existing flood emergency preparedness, response, and recovery capabilities of local agencies in the Delta. The funding will also support existing staffing to manage projects and perform maintenance on State Delta Emergency Facilities that increase the state's capability to

efficiently store, manage, and quickly deploy its material inventories when necessary to support flood emergency response in the region.

Levee failures in the Delta and the resulting increase in freshwater salinity levels could have catastrophic consequences statewide for infrastructure, the environment, and water supply. Local communities may not be equipped with adequate plans, skills, and materials needed for a front-line response. DWR is requesting additional funding for this program as it must continue to improve its emergency preparedness, support local communities, and respond to threats to the state's freshwater supply posed by catastrophic flooding in the Delta.

EcoRestore

EcoRestore is a state initiative to help coordinate and advance at least 30,000 acres of habitat restoration. It includes 32 multiple benefit projects that are in the planning, construction, or completion phases at an estimated cost of $750-$950 million, with approximately 50% coming from the State Water Project and 50% coming from other sources.

Importance to Metropolitan

The key benefits of these projects include protecting and enhancing SWP supplies, which improves drought-year supply reliability, secures additional sources for SWP dependent areas and low salinity groundwater recharge. Levee and ecosystem projects protect the Delta environment and the available water supply, while local projects support a diverse water portfolio. Through multiple partners and funding sources these large projects are achievable to water supplies.

Public Engagement

Current Trends

Public engagement is an important element to several Bay-Delta related programs, projects and collaborative efforts. Soliciting valuable input from various interests allows for greater understanding and broader perspectives to be explored. Engaging in a public setting also allows for transparency and can also promote inclusivity of multiple parties simultaneously, which can also enhance trust. This engagement can also lead to an enhanced deliberative public process. Governmental decisions made through public engagement can also garner the benefit of having early input in advance of implementing the action. There are several Bay-Delta initiatives underway today that demonstrate the importance of public engagement. The Stakeholder Engagement Committee (SEC), a committee of the Delta Conveyance Authority, was established to solicit key input from Delta stakeholders and interests related to the conceptual footprint design of the proposed Delta Conveyance project. Another example includes the California Department of Fish and Wildlife Prop 1 grant for the Delta Islands, an effort underway today to solicit feedback from several external experts and key interests related to land use options for the Metropolitan Delta Islands. Another example includes the Community Benefits Framework, under contemplation by DWR, which has included outreach to several in-Delta interests. This Framework is anticipated to become a tangible Community Benefits Program with the approval and advancement of the proposed delta conveyance project.

Importance to Metropolitan

With water supply imported from the high sierras, through the Delta to Southern California, public engagement remains an integral to developing thoughtful solutions in partnership with communities statewide.

Collaborative Partnerships

Current Trends

Collaborative Science

Over the last decade, the Metropolitan has been increasing its involvement in the development of science to inform management questions related to water project operations, seismic hazards, species protection and water quality. Metropolitan has been steadily increasing the number of published and peer reviewed studies that Metropolitan funds, and that its staff coauthor. Most of these studies are part of a collaboration with state and federal fish agencies, academic institutions, the Department of Water Resources, the Bureau of Reclamation, the Delta Science Program, the State Water Contractors, San Luis and Delta Mendota Water Authority, and environmental organizations.

Since 2011, Metropolitan has been part of the Collaborative Science Adaptive Management Program (CSAMP), which was organized at the end of litigation as a forum for working through scientific differences and uncertainties in collaboration with state and federal agencies, water districts, and environmentalists with the purpose of minimizing future conflict. With the technical and monetary support of Metropolitan, as well as other funding partners, CSAMP has completed multiple studies and served as a forum for discussing scientific perspectives.

Metropolitan also participates in many multi agency technical forums that address numerous issues related to the implementation of the State Water Project's incidental take permits and the Interagency Ecological Program's monitoring of species and water quality. Metropolitan regularly works with other government agencies and environmentalists to implement adaptive management of the State Water Project through structured decision making, which is a collaborative approach to assessing management actions in an open and transparent way. More recently, Metropolitan has been active in a multi entity process that is developing a framework for salmon recovery, and in supporting Delta researchers seeking state Proposition 1 funds.

Through these efforts, Metropolitan has been able to focus research in areas that had been historically ignored in the Delta and to support innovative approaches to Delta science investigations.

Importance to Metropolitan

Through collaborative efforts, Metropolitan expands its ability to have a voice in regulatory efforts that impact its water supply and to move forward with important science investigations with multiagency support. Some of the science developed through Metropolitan's efforts have shifted and expanded the discussions surrounding the biological impacts of the State Water Project and have developed alternative State Water Project operations that minimize impacts to water supply.

Policy Area 6: Statewide Water Management Supports One Water Metropolitan

Local Resources Sustainability

SWP Interrelationship with Local Resources

Current Trends

Production from existing local groundwater, surface water and Los Angeles Aqueduct supplies have decreased over the last decades. New recycled water, seawater desalination, and groundwater recovery local supply projects have proven difficult to implement due to permitting and regulatory requirements, technical complexities, and costs. The development of new local supply production has fallen short of the planning goals described in Metropolitan's IRPs. Shortfalls in local supply production and development put additional pressure on other local supplies and imported water sources. The importance of new local supplies are described in the 2020 IRP Regional Needs Assessment, as follows:

- Maintaining existing and developing new local supplies is critical in helping manage demands on Metropolitan, which increases sustainability and reduces dependency on imported supplies.
- Impacts to reliability occur if local supply assumptions are not achieved.
- Additional actions may be needed should existing and future local supply levels deviate from IRP assumptions.

Groundwater supplies meet around 30 percent of total retail demands in Metropolitan's service area. Since 2000, regional groundwater production has declined by about 25 percent. Groundwater production has decreased due to reductions in replenishment from imported sources, reductions in recharge from local precipitation and outdoor irrigation and water quality regulations and emerging contaminants. Currently there is about 5.5 million acre-feet of storage space in the region's groundwater basins. At the current rate of decline, the region would reach 7 million acre-feet of storage space, a critical threshold for reduced groundwater production, in the next few years.

Over the past 20 years, the region has made substantial gains in recycled water development. However, future recycled water projects face challenges due to the declining availability and quality of wastewater effluent as a result of effective water conservation measures. Large recycled water reuse projects are becoming more established in Metropolitan's service area. A future prospect for many of these programs is to produce water for direct potable reuse as well as indirect potable reuse (groundwater augmentation). A number of large reuse projects are either in the planning stages or have already been implemented:

- Metropolitan: Regional Recycled Water Program (150 mgd)
- Los Angeles Department of Water and Power: Operation Next (~175 mgd)
- City of San Diego: Pure Water Program (+30 mgd)
- Orange County Water District: Groundwater Replenishment System (130 mgd)

SWP supplies play a critical role in supporting existing and new local supply production from groundwater and recycled water in Metropolitan's service area. Replenishment from imported sources and recycled water are needed to maintain groundwater basin health in the region. Due to

groundwater basin plan objectives set by the Regional Water Quality Control Boards many basins are only able to use SWP supplies for groundwater recharge without additional treatment. In addition, State and Regional Water Quality Control Board regulations dictate TDS standards for recycled water used for groundwater recharge and reservoir augmentation, as well as for other non-potable uses.

Importance to Metropolitan

Local supply production and imported SWP supplies from the Delta are intrinsically linked. Ensuring sufficient Delta supplies as source water is key to the success of large recycling projects and maintaining sustainable groundwater production in Metropolitan's service area. Groundwater is the largest source of local supply in the region, and large recycled water projects have a big potential for improving reliability in the region. In turn, increased regional self-reliance and reduced reliance on the Delta are achieved through the continued sustainability and development of local supplies and conservation.

Metropolitan's Supply Portfolio and Operations

Storage and Transfers/Exchanges

Current Trends

Over the past decades, Metropolitan's storage programs and the transfer and exchange of water from willing partners have played an integral role in maintaining water supply reliability. The 2020 IRP Needs Assessment key findings highlights some of the important roles of storage:

- Storage is a vital component in maintaining reliability under current and future conditions.
- Expanding existing or developing new storage programs may be needed to help balance new core supply development in order to meet potential future shortages.
- Storage programs with even modest put/take capacities can help reduce the need for flexible supply.

Metropolitan has developed a large regional storage portfolio that includes both dry-year and emergency storage capacity. Storage is a key component of Metropolitan's overall resource management strategy. Storage enables the capture of surplus water in normal and wet years so that it can be used to meet demands in dry years. Since the last drought period of 2012-2015, Metropolitan was able to increase its total storage reserves from a low point of less than a million acre-feet in 2015 to over 3 million acre-feet at the beginning of the current drought period. In 2021, withdrawals from storage of around 600 thousand acre-feet played a critical role in meeting demands under a 5 percent SWP Table A allocation.

In recent years, the water transfer market's ability to provide dry-year reliability has been uncertain. The water transfer market in recent dry and critically dry years has had limited supply and high prices, and therefore the water market should not be relied upon as the primary source of water during future droughts. However, water transfers and exchanges in average and above-average water years may prove to be both plentiful and affordable. Due to investments in storage and distribution system conveyance, Metropolitan has the capability to purchase transfers or exchange supplies in normal and wet years.

The main constraint to moving water through the Delta to Metropolitan's storage facilities continues to be regulatory constraints at the SWP's export facilities in the south Delta. With projects such as new Delta Conveyance and Sites Reservoir, Metropolitan's ability to capture and move water in wetter water years would be expected to increase. With the recent Water Management Amendment to the State Water Contract, SWP Contractors are increasingly able to engage in short term transfers and developing exchanges with others. Wetter year exchanges provide an effective tool for Metropolitan to take and store water in years where competition for transfers is low and previously stored water can be used in dry years. Transfers and exchanges can also help facilitate partnerships in local water supply projects such as regional recycling with outside entities of the region. Transfers and exchanges could be made within the SWP to generate environmental flows and in recognition of multiple benefits to the Delta or upper watershed, as well as dry-year reliability (e.g., chino basin).

Importance to Metropolitan

Storage and transfers and exchanges are critical to the long-term sustainability and effective management of Metropolitan's water resources portfolio. SWP supplies, which are highly susceptible to varying hydrological conditions, provide water for storage in normal and wet years for use in dry years. A flexible water transfer approach that can take advantage of water when it is available will help to stabilize and build storage reserves; the combination of storage and transfers/exchanges work together to manage water supplies more efficiently between years and help reduce demands on the Delta in dry years.

State Water Project Dependent Areas

Current Trends

Metropolitan's distribution system is large and complex, supplies and demands are not evenly distributed across the system. Historically, there has been enough system flexibility to manage this uneven distribution between supplies and demands, however in the extreme drought year of 2021, with only a five percent SWP allocation, this flexibility was put to the test. The State Water Project Dependent Area is the portion of Metropolitan's system that is typically entirely dependent on SWP supplies. The 2020 IRP Regional Needs Assessment recognizes the importance of taking actions that address issues associated with SWP dependent areas.

- Vulnerabilities in the SWP Dependent Areas are more severe given reduced reliability of SWP supplies. Actions identified in the implementation phase must prioritize addressing the SWP Dependent Area's reliability challenges.
- New core supplies and new/or existing storage must first address and reach SWP Dependent Areas.
- System flexibility and distribution system investments can increase SWP Dependent Areas' access to existing core supplies and storage.
- Shortages on the Colorado River Aqueduct limit the effectiveness of system distribution improvements.

Metropolitan was able to meet all SWP Dependent Area demands in 2021 by implementing a number of actions and coordinating closely with the member agencies. The new DVL-to-Mills plant operation and the new Operational Shift Cost-Offset Program expanded system flexibility and made it possible to bring alternative supplies to the SWP Dependent Areas. Metropolitan purchased transfers and

increased the yield of SWP Banking Programs. Member agencies conserved consumptive demands and deferred replenishment deliveries. Supplies were also drawn from SWP Carryover storage in San Luis Reservoir (storage carried over from previous water year in San Luis Reservoir for Metropolitan's use) and Flexible Storage in Castaic Lake (SWP water in Castaic Lake for use within Metropolitan's service area) to meet any remaining needs.

In November 2021, Metropolitan's Board recognized a statewide drought emergency and declared emergency conditions within Metropolitan service area. The Board acknowledged the record dry conditions of 2020 and 2021, prepared for potential continued dry conditions into 2022, and called on member agencies in the SWP Dependent Area to reduce water demands through all reasonable means, including increasing conservation, local supply use, water-use efficiency, and drought-related limitations. If the final SWP allocation for 2022 is less than 20 to 25 percent, Metropolitan will continue to coordinate with the member agencies in the SWP Dependent Area to conserve consumptive demands, defer or conserve replenishment demands, and implement additional drought actions to a level that is in balance with the available supplies.

Importance to Metropolitan

In 2021, the total demand on Metropolitan for SWP Dependent Areas was 771,000 acre-feet, which accounted for almost half of the 1.57 million acre-feet of total demands. Metropolitan is committed to ensure all portions of the service area attain a high level of reliability.

Bay-Delta Policies Update Process

Attachment B: Staff Feedback

Through internal workshop meetings, staff from various parts of the organization provided feedback on how Bay Delta policies are related to different policy and related objectives of Metropolitan. The feedback was captured through notes from breakout groups of experts and interactive jamboard feedback, in the form of 173 distinct comments, which were then reviewed and synthesized. This feedback was instrumental in identifying the six proposed key policy areas summarized below.

Statewide Water Resource Management	Bay-Delta Science, Watershed Management & Land Use	Bay-Delta Operational Resilience	Bay-Delta Infrastructure Reliability	Bay-Delta Community Investments and Partnerships	Statewide Water Management linkage to One Water Metropolitan
27	38	14	28	28	38

I.Statewide Water Resource Management

27

Workshop participants provided **27 total comments** related to Statewide Water Resource Management and its subthemes of Climate Change, Reduced Reliance, and Bay-Delta Sustainability. The bulk of feedback was related to the negative effects of climate change on water quality, native species, and the timing and volume of runoff. Participant feedback regarding Reduced Reliance and Bay-Delta Sustainability was centered around increased partnerships on local projects and increasing regulatory constraints.

II. Bay-Delta Science, Watershed Management and Land Use

38

Workshop participants provided **38 total comments** related to Bay-Delta Science, Watershed Management and Land Use. This proposed policy area tied with "Statewide Water Management Supports One Water Metropolitan" for garnering the most feedback. The majority of feedback was split between the importance of streamlining the permitting process for restoration projects and incentivizing sustainable farming practices throughout the Delta and on Metropolitan's own Delta islands (via flexible leases) to improve water quality and reduce subsidence. Participants also commented on protecting aquatic species via flows, controlling aquatic weeds, and improving the health of watersheds to increase runoff and water quality.

III. Bay-Delta Operational Resilience

14

Workshop participants provided **14 total comments** related to Bay-Delta Operational Resilience and its subthemes of Flexible Pumping Operations, Water Rights/Measurements and Reporting, and Bay-Delta Water Quality. Of the 14 comments, ten were related to Water Quality mainly focusing on hazardous algal blooms, increasing salinity, and reducing pesticide use on Delta farmland. The remaining four comments were related to Delta curtailments and depletions and evolving regulations reducing operational flexibility.

IV. Bay-Delta Infrastructure Reliability

28

Workshop participants provided **28 comments related to** Bay-Delta Infrastructure Reliability and its subthemes of Conveyance, Statewide Storage, Water Energy Nexus, and Emergency Preparedness. Of the 28 comments, ten were related to Conveyance and focused primarily on reducing or addressing subsidence along the California Aqueduct and the need for the Delta Conveyance Project. The remaining comments centered around the need for additional reservoirs, the State Water Project's role in energy reliability, and currently aligned emergency preparedness policies with DWR and other agencies.

Community Investments and Partnerships

28

Workshop participants provided **28 comments** related to Bay-Delta Community Investments and Partnerships and its subthemes of Cost Effective and Beneficial Solutions, Public Engagement, and Collaborative Partnerships. Thirteen of the 28 comments were related to Public Engagement and focused on engaging Delta stakeholder groups to hear their concerns. Participants had ten comments regarding Cost Effective and Beneficial Solutions that were mainly focused on cost-sharing a renewed focus on ESG (Environmental, Social and Governance). Lastly, participants had five comments on collaborative partnerships related to continued coordination with DWR's Community Benefits and asset management programs.

Statewide Water Resource Management Supports One Water Metropolitan

38

Workshop participants provided **38 total comments** related to Statewide Water Management linkage to One Water Metropolitan and its subthemes of Local Resource Sustainability and Metropolitan's Supply Portfolio and Operations. This policy area tied with Bay-Delta Science, Watershed Management and Land Use for garnering the most feedback. Seventeen comments were related to the subtheme of Local Resources Sustainability and focused on increasing local resource production, stormwater capture, and the interrelationship between local projects and imported water. 21 of the 38 comments captured were related to Metropolitan's Supply Portfolio and Operations and focused mainly on the need for flexibility in Metropolitan's distribution system and the benefit of more strategic storage and the operation of that storage.

Treemap: Bay-Delta Policy Areas and Policy Subthemes

This Treemap is a visual representation of the 173 comments received across the six policy areas and key subthemes