



Executive Summary

Through this Drought Contingency Plan (DCP), BARR agencies are working together to leverage existing assets and resources and strengthen the region's water supply reliability in ways uniquely possible through the partnership.

While drought is a recurring feature for California, the drought over the past five years was extreme and unprecedented, as punctuated by the two hottest years (2014 and 2015) and the lowest snowpack (2015) since record keeping began in 1895. As noted in the California Water Action Plan, the state's roadmap for sustainable water management, hydrologic and environmental conditions have reduced the reliability of California's traditional supplies, requiring water providers to consider alternative sources and new approaches to improve reliability in light of uncertainties.

A Regional Approach

Though supply conditions for water agencies in the San Francisco Bay Area have improved significantly in the current water year (2016/2017), the recent drought and opportunities to better leverage area resources have inspired more integrated regional water management and drought mitigation efforts, resulting in the Bay Area Regional Reliability (BARR) partnership among eight of the largest Bay Area water agencies (see inset) that collectively serve more than 6 million people in 6 counties (Figure ES-1).

To provide supply reliability and resilience in light of future uncertainties, each of the BARR agencies is steadfast in implementing strategies such as demand management; water supply portfolio diversification; aging infrastructure repairs/replacement; and interagency facility connections. Through implementing these strategies, the BARR agencies aim to maintain a reliable water system at affordable rates while protecting the environment and preparing for the future.

Amid the recent drought, the BARR partnership was established to cooperatively address water supply reliability concerns and drought preparedness on a mutually beneficial and regionally focused basis. After adopting principles in 2014 to guide the partnership, the agencies executed a Memorandum of Agreement (MOA) in 2015.



Bay Area Regional Reliability Partnership

- Alameda County Water District (ACWD)
- Bay Area Water Supply and Conservation Agency (BAWSCA)
- Contra Costa Water District (CCWD)
- East Bay Municipal Utility District (EBMUD)
- Marin Municipal Water District (MMWD)
- San Francisco Public Utilities Commission (SFPUC)
- Santa Clara Valley Water District (SCVWD)
- Zone 7 Water Agency (Zone 7)

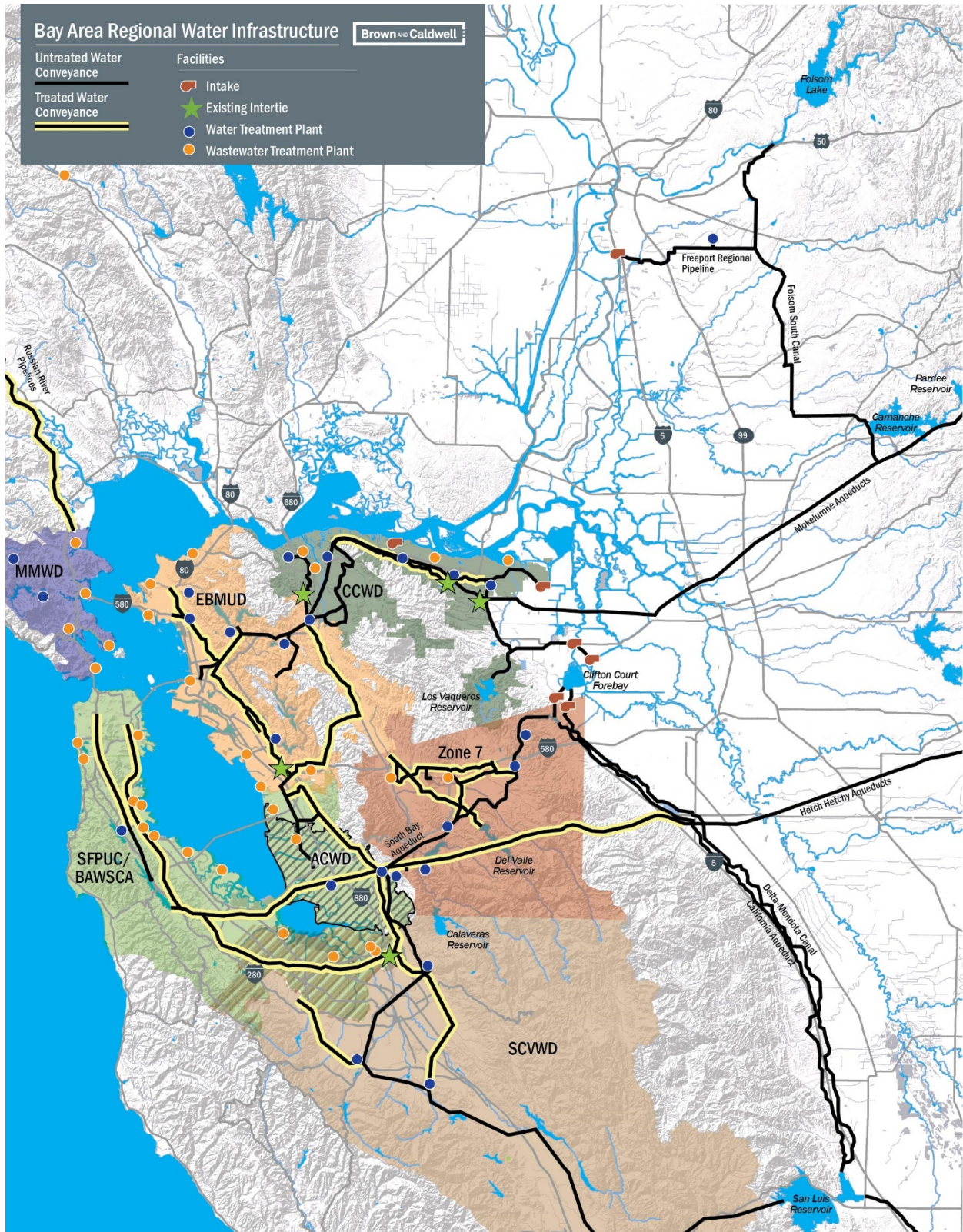


Figure ES-1. BARR agencies, which include eight of the Bay Area’s largest water providers, are working together to optimize regional water supply reliability.



Drought Contingency Plan

To improve supply reliability, BARR agencies collaboratively developed this regional DCP—a project funded in part by the United States Department of the Interior, United States Bureau of Reclamation (Reclamation). The BARR DCP differs from past efforts because it approaches drought planning from a regional, integrated perspective and takes stock of BARR agencies' existing water assets and resources.

Plan Objectives

BARR agencies aim to cooperatively develop regional projects to strengthen the Bay Area's long-term water supply reliability and resilience. This effort focuses on combining and integrating existing assets and resources and exploring new operations strategies to improve resilience for droughts and other emergency conditions.

Though the DCP focuses primarily on drought reliability, it provides benefits for three distinct aspects of regional water, including:

- 1 Emergency response
- 2 Drought mitigation and response
- 3 Replacement or alternative supplies

The BARR DCP specifically addresses drought-related vulnerabilities through consideration of drought response actions and mitigation measures. The DCP is not a water supply master plan to accommodate growth. Future supply planning is addressed separately by the BARR agencies through their Urban Water Management Plans (UWMPs) and other efforts. The agencies also prepare for catastrophic events through emergency response plans and programs that establish strategies and operating procedures for the days and weeks following an emergency.

The primary focus of the DCP is drought mitigation and response; however, the BARR strategies considered in this plan may provide



The DCP's crux includes the strategies identified to improve regional reliability and resilience—**drought response actions and drought mitigation measures**—and an operational and administrative framework for implementation.

ancillary benefits for emergency response, replacement, and/or alternatives supplies.

Plan Development and Key Elements

General managers and staff from each of the eight BARR agencies collaborated in defining the DCP's direction and developing its content. The agencies convened a Drought Task Force representing a broad range of stakeholder interests and solicited their input on interim work products through written comments and three workshops. In addition, the agencies held a public meeting to receive broader input on the Draft DCP prior to submitting it to Reclamation.

The BARR agencies developed this DCP using Reclamation's "Guidance Regarding the Drought Contingency Planning Process" as a framework. This plan uses BARR agencies' 2015 UWMPs as a primary source of information¹, and reflects a compilation and high-level overview of the Bay Area water system, including existing and projected demands, water use efficiency, and supplies. A collation of information from BARR agencies' UWMPs was used to create the comprehensive picture presented here.

A vulnerability assessment identifies risk factors contributing to potential compromise or loss of critical regional water resources. The DCP's crux includes the strategies identified to improve regional reliability and resilience—drought response actions and drought mitigation measures—and an operational and administrative framework for implementation.

¹ For more detailed agency-specific data, readers are directed to the BARR agencies' individual UWMPs and other longer-term water supply planning studies. It should be noted that UWMPs are required by state law every five years

to document projected demands and supplies under different hydrologic conditions, and as such reflect relatively conservative estimates. BAWSCA member agencies are urban water suppliers that prepare individual UWMPs.

Regional Water Demand and Water Use Efficiency

Water use varies year-to-year depending on a number of factors, such as climate, regulatory and environmental drivers, and the economy. Despite this annual variability, BARR agencies' collective water use over the last two decades demonstrates a downward trend (Figures ES-2 and ES-3).

More substantial water use reductions over the last decade, and particularly over the last several years, are largely due to recession, drought water use restrictions, and changing culture. Some lasting efficiencies were gained during the recent drought; however, extreme water use reductions over the last several years are due in part to short-term actions taken in response to the emergency drought mandate, such as shorter showers and limited outdoor watering.

A recent statewide public survey sponsored by ACWA reports that two-thirds of survey participants felt they made “reasonably substantial reductions in their households’ water use over the past few years.” Most indicated their efforts focused on behavior changes rather than efficiency upgrades, and on outdoor rather than indoor reductions (FM3, 2017).

Future water use is currently challenging to project. California water management is amid a transformation due in part to state initiatives, legislation, and regulations such as a new statewide long-term water use efficiency framework, the California Water Action Plan, and the Bay-Delta Water Quality Control Plan.

Though the effects of these state efforts on future demands and water management are not yet fully defined, the long-term regional trend for water use efficiency will certainly continue. When considering demand projections from 2015 UWMPs, BARR agencies anticipate their collective municipal and industrial (M&I) demands for potable water will grow by 18 percent or less from 1995 to 2035—even as the population is expected to grow by more than 40 percent, fueled by a robust and growing Bay Area economy. “Smart growth”—increasing population and density in an environmentally preferred manner and with a regional outlook—will drive much of the Bay Area’s future water demand.

Since the time BARR agencies developed 2015 UWMPs, the Association of Bay Area Governments (ABAG) released a draft version of Plan Bay Area 2040, which is the transportation and land use roadmap for the region’s future growth. The plan reflects policy decisions and is based on assumptions considering the region’s key economic, demographic, and financial trends over the last four years. The draft plan includes population and employment projections that are significantly higher than those included in BARR agencies’ 2015 UWMPs (ABAG, 2017). The outcome of the Plan Bay Area 2040 process will affect the region’s projected demands and future water use.

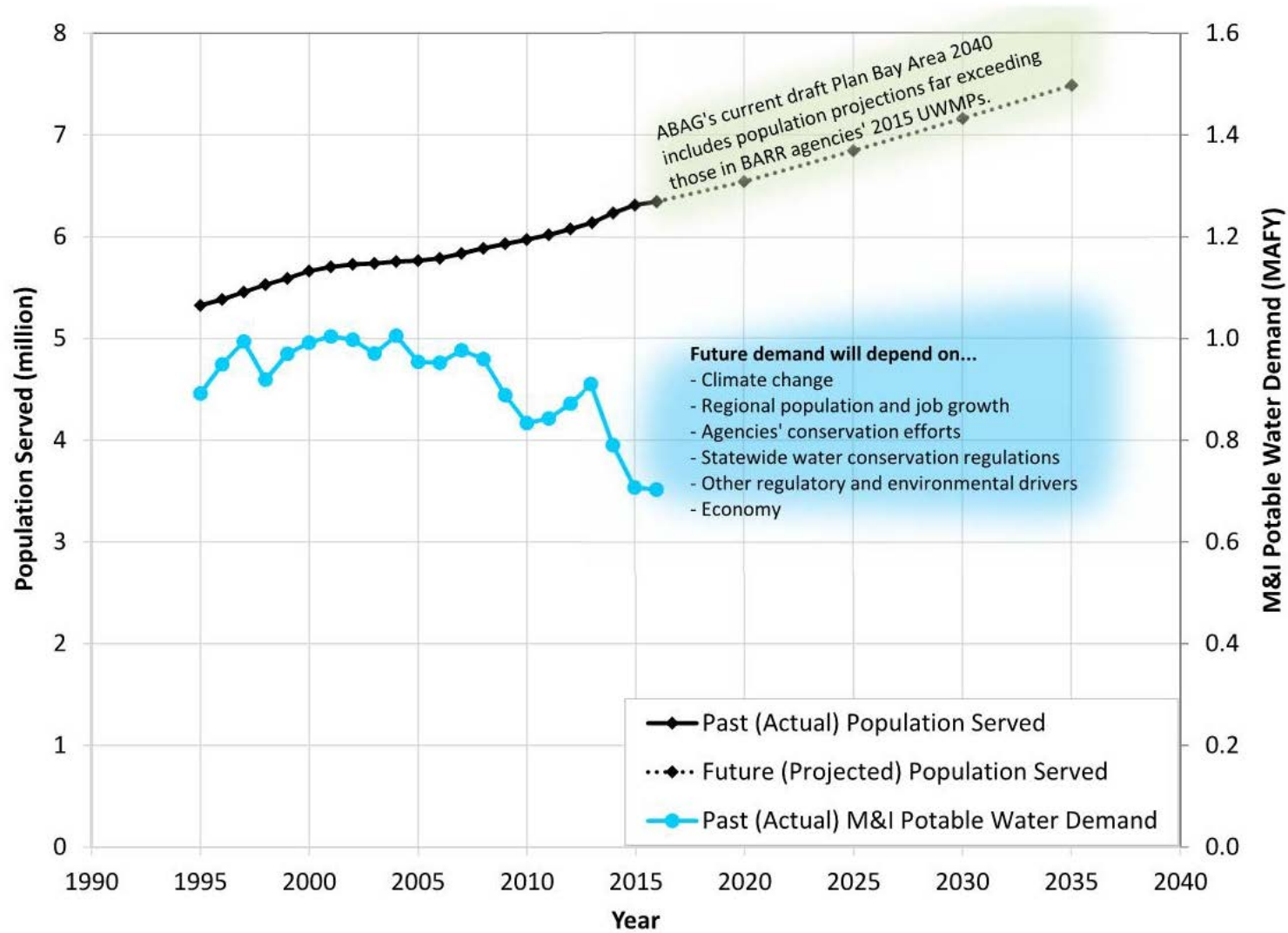
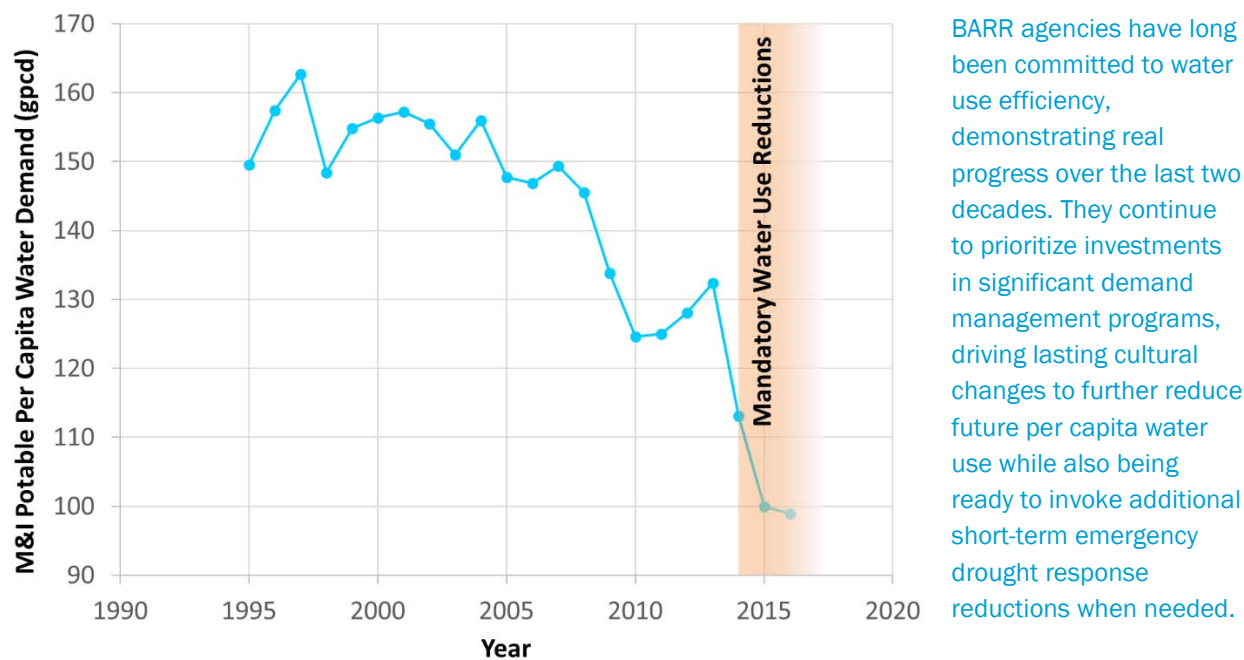


Figure ES-2. Even with robust population growth, the region's potable demand for urban uses declined over the past two decades.





BARR agencies have long been committed to water use efficiency, demonstrating real progress over the last two decades. They continue to prioritize investments in significant demand management programs, driving lasting cultural changes to further reduce future per capita water use while also being ready to invoke additional short-term emergency drought response reductions when needed.

Figure ES-3. Although recent reductions were largely due to emergency conservation during drought, the Bay Area's collective per capita M&I potable demand is trending downward over the long-term.

Existing and Planned Water Supplies

In addition to their aggressive water conservation programs, BARR agencies have been diversifying their water resource portfolios to ensure reliability for their customers. Collectively, existing and planned water supply sources among the agencies are diverse, and include surface water from local and imported sources, groundwater, recycled water (non-potable reuse), purified water (potable reuse), and desalination, as shown in Figure ES-4.

While traditional supply sources will remain an important foundation to the region's supply portfolio, BARR agencies see non-potable and potable water reuse as critical elements to future Bay Area supplies, and they are currently working on a wide range of reuse projects. One example is SCVWD's expansion of the Silicon Valley Advanced Water Purification Center to develop additional supplies for groundwater replenishment.

Some BARR agencies are also expanding other sustainable local sources of supply, such as rainwater, stormwater, graywater (sinks, washers, and showers), blackwater (wastewater; same elements as graywater, with the addition of toilets), and foundation drainage. Several BARR agencies have already obtained water rights to local runoff from flood and storm events, and are considering opportunities to expand urban stormwater capture for water supply augmentation.

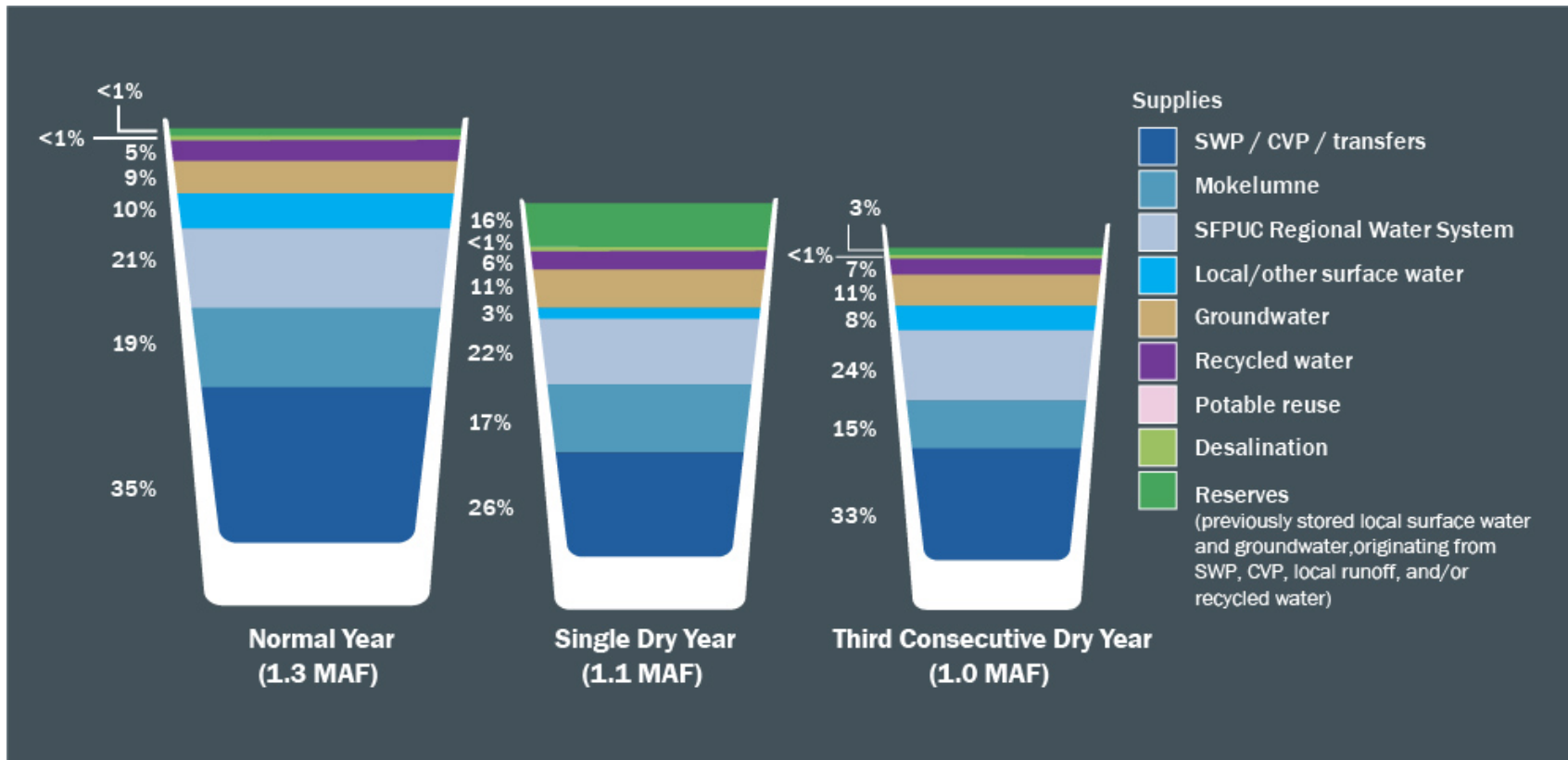


Figure ES-4. Total supply and composition of the future (2020) regional supply portfolio is expected to vary over hydrologic conditions.

Stormwater is an integral part of the state's water supply portfolio. Bay Area and upcountry precipitation runoff is collected in the state's network of surface water and groundwater reservoirs as part of basic operations, serving many BARR agencies and other water providers.

Some BARR agencies have also been capturing local rainfall runoff and urban stormwater and using it to meet water demands for decades. However, the agencies account for stormwater in their local surface water or groundwater supplies, not as a separate supply source. The agencies continue to work toward greater capture and use of local urban stormwater for supply where feasible. For example, SCVWD is currently incorporating stormwater projects into their Water Supply Master Plan and collaborating with Municipal Regional National Pollutant Discharge Elimination System (NPDES) Stormwater co-permittees in Santa Clara County to develop a Storm Water Resources Plan.

The Bay Area's collective supply varies with hydrology in terms of total volume available and diversity of the supply portfolio, as shown in Figure ES-4. By 2020, the total available annual supply in a normal year is expected to reduce from about 1.3 million acre-feet (MAF) to 1.1 MAF in a single dry year, and 1.0 MAF in a third consecutive dry year. When additional supply is available in normal years, groundwater and surface water storage are typically replenished.

In addition to the total volume, the composition of BARR supplies also varies from normal, to single dry year and third consecutive dry year scenarios. In a single dry year, reliance on storage increases significantly. By the third consecutive dry year, overall storage is expected to be significantly depleted. To make up the shortfall, emergency drought response measures will be needed to varying degrees by different BARR agencies.

Drought Monitoring

The California Department of Water Resources (DWR), Reclamation, and others monitor water supply conditions on a statewide level.

BARR agencies independently monitor drought by regularly assessing their supply conditions and comparing to triggers (thresholds) that correlate to various drought stages. The agencies each define drought triggers and response actions in their individual Water Shortage Contingency Plan (WSCP). Retail and wholesale urban water suppliers in California are required to adopt and submit a WSCP to DWR every five years. Though currently pending, legislative action is anticipated within the next year to establish new WSCP guidelines including a requirement for agencies to submit annual water budget forecasts to DWR each spring based on six standard supply shortage levels.

While BARR agencies acknowledge the importance of regional coordination, opportunities for regional drought monitoring and response are limited by agencies' individual WSCPs and their unique supply portfolios. However, the agencies have identified next steps to improve regional drought monitoring and response. For example, BARR agencies will assess the region's supply conditions by compiling their individual annual water budget forecasts to be submitted to DWR each spring using the six standard supply shortage levels. The agencies will develop a color-coded Bay Area drought monitor map displaying the shortage level in each agency's service area. The agencies will post the map online once a year (after spring supply forecasting) with links to the individual agencies' websites for more detailed current information about supply conditions and response actions.

Potential Vulnerabilities

To create a framework for drought contingency planning, specific threats to the region's critical water resources and factors contributing to those threats must be understood. In addition, past climate, water supply, and water use trends and a range of potential future drought conditions and climate change impacts must be considered.

In the context of this framework, drought vulnerability is the extent to which the Bay Area's critical resources are exposed or susceptible to risks and able to cope with or adjust to the adverse effects. Risk is a combination of frequency of occurrence and magnitude and severity of consequences. BARR agencies used the resulting baseline risk assessment to inform potential drought response actions and mitigation measures described in this plan.

Bay Area water supplies face many drought risks due to climate change; infrastructure susceptibility in the event of an emergency; supply limitations; regulatory, environmental, and water rights constraints; cost constraints and affordability; and source water quality degradation. BARR agencies assessed the underlying causes to risks for the region's critical water resources. The significance of the region's critical water resources varies by agency based on their individual supply portfolio.

In 2015 UWMPs, BARR agencies quantified projected supply availability by source under various hydrologic conditions, considering historic reliability (using hydrologic data) and risks facing each supply source. This information was compiled to quantify potential regional supply shortfalls for the collective BARR agencies in 2020 and 2035, based on comparing the region's future direct demands to projected total supplies under normal, single dry year, and third consecutive dry year conditions. As noted, future demand projections are largely uncertain due to a

handful of factors, ranging from future population growth to new expectations for water use efficiency.

It is also important to note that direct demand projections do not consistently account for storage replenishment from surface water, groundwater, and banking that occurs in wetter years when supplies are available. Agencies account for these storage demands differently within their UWMPs. For example, Zone 7 explicitly accounts for storage demands in normal years, required to meet single dry year and third consecutive dry year demands.

Also, some reservoirs are not managed solely for a single agency or purpose. For example, water in the Mokelumne River and Hetch Hetchy Regional Water systems are managed by and for EBMUD and SFPUC, respectively, and for in-stream fish flows and other water rights holders. Further, some agencies consider stored water a reserve supply, while other consider storage integral to operations but not a distinct supply source. Given these factors, a simple comparison of UWMP projected demands and supplies can be misleading and must be considered in the broader context of "supply utilization" versus "supply availability."

Despite the minor differences in the agencies' methodologies, Figure ES-5 gives a general sense of potential future supply surpluses and/or gaps for the region. The comparison of supplies and demands varies by BARR agency, with some agencies projecting shortages for timeframes and hydrologic conditions when others anticipate surplus supplies. When considered from a regional perspective, BARR agencies anticipate meeting normal year demands for wet/normal water supply years in the near term (2020) and long term (2035). However, the region collectively faces increased challenges for meeting demands in the same time range during dry years.

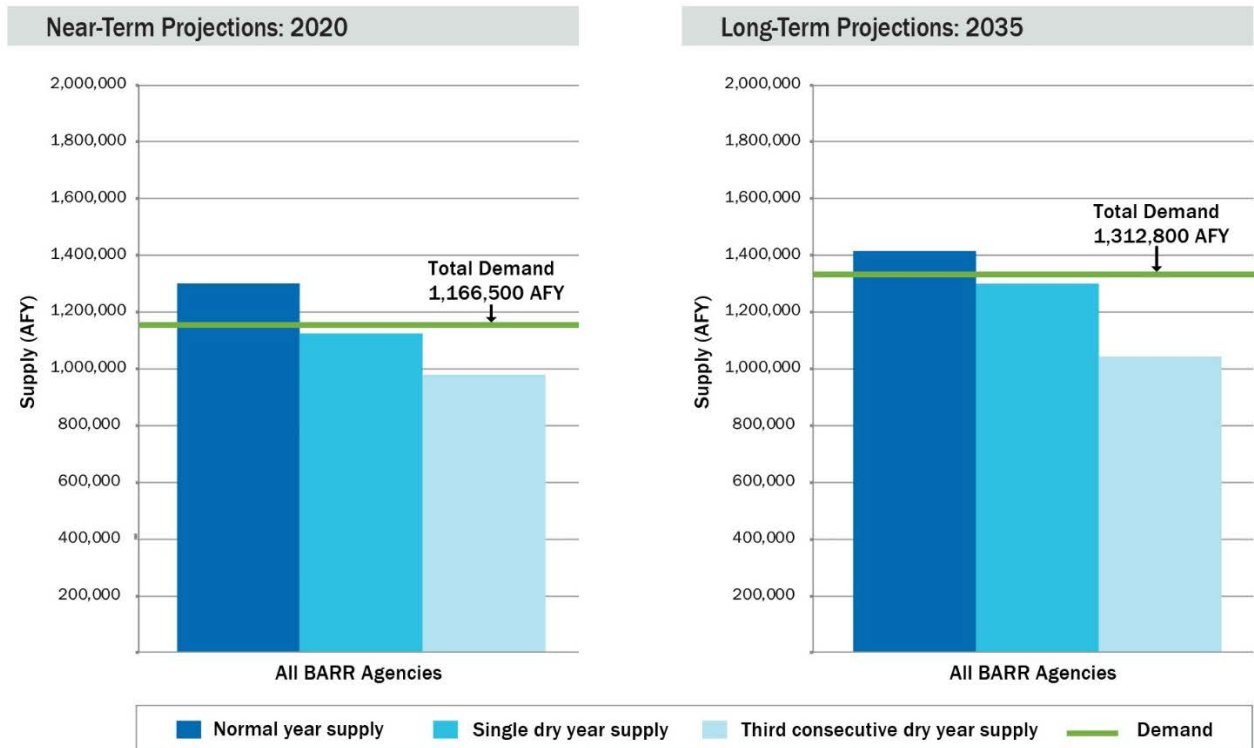


Figure ES-5. BARR agencies collectively anticipate adequate supplies through 2035 for meeting demands in normal years and increased vulnerabilities and challenges for meeting demands in dry years.

For details on individual agencies' projections, refer to 2015 UWMPs.

Drought Response Actions

Response actions are triggered during specific stages of drought to manage limited supplies and decrease the severity of immediate impacts over short periods. Each BARR agency has a unique set of drought response actions dictated by agency-specific conditions and documented in WSCPs, which are submitted with UWMPs every five years.

During the recent drought, BARR agencies implemented their WSCPs and expanded their conservation efforts to increase public awareness, restrict specific water uses, prohibit wasteful water practices, and increase conservation rebate program funding. Some agencies assessed drought surcharges and/or water waste fines.

In addition, the agencies complied with state mandates, specifically the Emergency Water Conservation Regulation initially adopted by the State Water Resources Control Board (State Board) in May 2015 and subsequently re-adopted with amendments. Among other actions, the Emergency Regulation required urban water agencies to restrict specific outdoor water uses, report monthly water use data, and reduce potable urban water use between June 2015 and February 2016. The State Board lifted the Emergency Regulation in Spring 2017 as a result of substantially improved water supply conditions.

While each WSCP is unique, BARR agencies are moving toward more consistency across their plans, which will facilitate better regional coordination and response. Governor Brown's May 2016 Executive Order (EO) and subsequent water use efficiency framework—released by DWR, State Board, and other state agencies² in April 2017—directs urban water agencies to submit water budget forecasts annually and Drought Risk Assessments every five years with their UWMPs, based on six standard shortage levels.

In addition to actions defined in individual WSCPs, the BARR agencies have identified response actions that could be implemented regionally:

- **Regional drought response communications.** Consistent regional messaging may improve reaching the public regarding the need for water savings. The effectiveness of this action was demonstrated in the 2012-2016 drought using Caltrans signs throughout the region and state to communicate the drought severity and urge the public to reduce outdoor water use. BARR agencies will benefit from economies of scale by coordinating regional outreach campaigns building on effective local programs and/or leveraging models from other regions. This response action will be triggered when multiple agencies within the BARR service area have identified a water shortage.



Drought Response Actions

Defined as short-term actions triggered during drought to manage limited supplies and decrease the severity of immediate impacts.

Each BARR agency has its own set of drought response actions defined in its WSCP. A consistent communications strategy and mobile water treatment facilities are potential drought response actions that could be implemented regionally.

² Other state agencies involved in developing the Making Conservation a California Way of Life report include the California Public Utilities Commission, the California Department of Food and Agriculture, and the California Energy Commission. Aspects of the report pertaining to the BARR DCP are under the purview of DWR and the State Board.

- **Mobile water treatment facilities.** In the event of a critical water shortage emergency, short-term leases of mobile trailers with various treatment units could be used to treat saline surface water, groundwater, and/or recycled water. Significant logistical challenges would need to be explored, including mobilization and startup, as well as operation, maintenance, and legal or environmental issues. Given the BARR agencies' ability to manage the recent extreme drought, mobile water treatment may not be necessary for comparable droughts. However, given confounding future uncertainties that may reduce supply availability—such as climate change, regional growth, supply limitations, earthquakes, environmental regulations—mobile water treatment is an option to consider for extreme, and likely isolated, circumstances.

Drought Mitigation Measures

BARR agencies focused on drought mitigation measures that would increase regional water supply reliability, benefiting multiple agencies and justifiably characterized as “regional in nature,” as summarized in Table ES-1. BARR agencies provided the Drought Task Force, an advisory stakeholder group, a preview of the measures for their review and input.

Many of the measures would leverage or expand existing assets while others would require new facilities—such as interties, storage, and treatment—which typically require detailed and often lengthy planning and implementation. BARR agencies are also exploring a few early-action measures to further exercise the partnership and produce tangible joint outcomes that can be implemented relatively quickly. For example, one initial proposed measure, for which the BARR agencies recently secured funding, is to develop a regional water market program to facilitate voluntary exchanges and transfers and maximize efficient use of existing assets and resources. The mitigation measures are at various stages of planning, and are described in the DCP based on current knowledge and planning objectives, which will evolve over time.

Table ES-1 lists these possible mitigation measures and the BARR agencies engaged in each. In characterizing the measures, the BARR agencies have applied several factors including benefits (e.g., yield, flexibility/sustainability, and timing), costs, implementability, and social and environmental considerations. The potential timing for implementing is categorized as either near-term, medium-term, or long-term, based on project status and whether funding has been secured (Figure ES-6). While early efforts are underway to advance some measures (e.g., Los Vaqueros Reservoir Expansion, Transfer-Bethany Pipeline, Walnut Creek Water Treatment Plant [WCWTP] Pretreatment Facility, and the Bay Area Water Market Program), others are in conceptual or planning stages and may or may not be necessary with future evolving conditions. BARR agencies consider the entire list of 15 measures viable possibilities depending on need and timing.



Drought Mitigation Measures

Defined as actions, programs, and strategies implemented before a drought occurs to increase regional water supply reliability and improve long-term resilience.

Drought mitigation measures engage two or more BARR agencies.

These efforts require detailed and often lengthy planning and implementation, and they may involve reconfiguring or expanding existing assets or constructing new facilities.

Table ES-1. BARR Drought Mitigation Measures		
No.	Drought Mitigation Measure	Engaged BARR Agencies
Interties		
1	Transfer-Bethany Pipeline	ACWD, BAWSCA, CCWD, EBMUD, SFPUC, SCVWD, and Zone 7
2	Zone 7-EBMUD Intertie	Zone 7 and EBMUD
3a	ACWD-SFPUC Intertie and Local Supply	ACWD, BAWSCA, and SFPUC
3b	ACWD-SFPUC Intertie and indirect potable reuse (IPR)	ACWD, BAWSCA, and SFPUC
4	West Side SFPUC-SCVWD Intertie	SFPUC, BAWSCA, and SCVWD
5	SFPUC-Zone 7 Intertie	SFPUC, BAWSCA, and Zone 7
6	MMWD-EBMUD Intertie	MMWD and EBMUD
Expanded Storage		
7	Los Vaqueros (LV) Expansion	ACWD, BAWSCA, CCWD, EBMUD, SFPUC, SCVWD, and Zone 7
Treatment/Supply		
8	Walnut Creek Water Treatment Plant Pretreatment Facility	ACWD, BAWSCA, CCWD, EBMUD, SFPUC, SCVWD, and Zone 7 (to be confirmed at a later time)
9	Regional Desalination Plant	CCWD, EBMUD, SCVWD, SFPUC, and Zone 7
10	Silicon Valley Advanced Water Purification Center (SVAWPC) Expansion	SCVWD, SFPUC, and BAWSCA
11	Mid-Peninsula Potable Reuse Exploratory Plan (PREP)	SFPUC and BAWSCA
12	Joint Tri-Valley Potable Reuse Feasibility Study	Zone 7* and other regional partners to be determined (TBD) (potentially including CCWD, EBMUD, and/or SFPUC)
Operations		
13	Regional Advanced Metering Infrastructure (AMI) Feasibility Assessment	ACWD, CCWD, EBMUD, MMWD, and SCVWD
14	Del Valle Reservoir Water Supply Storage Expansion Project	ACWD, SCVWD, Zone 7, and other potential regional partners TBD (CCWD, EBMUD, and/or SFPUC)
15	Bay Area Regional Water Market (Exchanges/Transfers) Program	ACWD, BAWSCA, CCWD, EBMUD, SCVWD, SFPUC, and Zone 7

* = Other water agency partners include California Water Service, City of Livermore, City of Pleasanton, and Dublin San Ramon Services District (DSRSD).



Figure ES-6. Potential timing for mitigation measure implementation ³

BARR agencies acknowledge and appreciate the value of other ongoing efforts to improve water supply reliability across the state. One example is the work by the Western Recycled Water Coalition, which includes several BARR members who are pursuing projects to expand recycled water supplies (both potable and non-potable reuse) throughout the region.

In addition to local and regional efforts, the state is advancing programs intended to enhance reliability. Several examples closely connected to the California Water Action Plan include the Sustainable Groundwater Management Act (a framework for sustainable local and regional groundwater management), the Water Storage Investment Program (a \$2.7 billion fund under Proposition 1 dedicated to the public benefits of water storage projects), and California WaterFix.

BARR agencies are also pursuing projects individually or with other partners outside of the BARR framework to further improve Bay Area supply reliability. Many of these ongoing projects are expected to enhance reliability in the Bay Area and might involve multiple non-BARR partners. However, the BARR partnership’s objective is more narrowly focused on advancing a smaller suite of projects that engage multiple BARR agencies and are uniquely enabled by this regional effort.

³ Los Vaqueros Expansion is considered near-term, though construction will likely begin in 2022. The design is already underway with plans for construction. The delay in implementation is due to construction sequencing and the need to drain the existing reservoir prior to construction.

Operational and Administrative Framework

Sharing regional water resources and facilities requires new operational and administrative mechanisms that reflect many of the following considerations:

- **Governance and Institutional.** Transferring water and/or sharing infrastructure among users often requires new institutional agreements to specify roles, responsibilities, and key implementation steps. BARR agencies may consider forming a joint powers authority (JPA) in future phases of work to operate as a single agency to accomplish specific common goals.
- **Operational.** To achieve regional water solutions, BARR agencies may need to modify current operations. For example, agencies may need to coordinate water quality monitoring and changes in water treatment operations needed to blend transferred supplies, including water quality effects like taste and odor, treatability, or corrosion concerns.
- **Permitting and environmental documentation.** Implementation of drought mitigation measures requires obtaining regulatory approvals and permits; coordinating with relevant governmental agency(ies) issuing the needed permit(s) at federal, state, and/or local levels; and completing specific environmental analysis and documentation as mandated by federal and state regulations.
- **Water rights.** Supply transfers often trigger modifications to water-rights permits to address changes in points of diversion, place of use, and/or purpose of use. While specific operational and legal limitations apply, two potential areas of flexibility show promise:
 - Conjunctive use of transferred supplies (transferring water to storage in non-dry years for use during dry years), which would improve water management.
 - Changes to points of diversion or places of use, which would allow water exchanges between BARR agencies, especially those that have local storage capability.
- **Funding.** Viable funding sources can expedite and facilitate implementation of mitigation measures or drought response actions. Several state, federal, and local funding sources are currently available, including grant and loan opportunities. Funding eligibility and other requirements, such as local cost-share for grants and repayment terms for loans, are important considerations. In addition, grant funding is competitive and less certain to materialize. Alternative funding mechanisms, such as public-private partnerships (P3), are other pathways to consider.

Next Steps

This DCP outlines strategies that BARR agencies can implement together to improve water supply reliability for the entire Bay area.

The BARR partnership holds tremendous potential to forge new regional approaches for reliable water supply in the Bay Area. Together, BARR agencies are pursuing measures and actions that would use existing infrastructure and water resources more fully to produce greater efficiencies and improved drought reliability for the entire region. Through this collaborative process, BARR agencies now have a regional platform for water management—one that enables joint measures and actions to meet Bay Area water needs while also meeting individual agencies' site-specific needs.

Future DCP Updates

BARR agencies plan to develop annual status reports to update stakeholders regarding progress in implementing the drought mitigation measures and response actions identified in the DCP. The annual status reports will be posted to the BARR website, and BARR agencies will distribute alerts through email push notifications to direct stakeholders to the website.

Future revisions to the DCP will be guided and developed through the Bay Area Water Agency Coalition (BAWAC), which is a forum where the region's largest water suppliers coordinate on water supply reliability improvements, water quality protection, flood control, and current water supply issues. During bi-monthly BAWAC meetings, general managers hold roundtable discussions about water supply conditions and other current topics. The role of BAWAC chair rotates between the agencies about every two years. All the BARR member agencies are active participants in BAWAC, making it an ideal mechanism for maintaining the DCP in the future.

Consistency in UWMPs

In addition to this joint DCP, BARR agencies individually maintain their UWMPs that outline long-term plans to ensure reliable, adequate water supplies for existing and future water demands. UWMP data have traditionally been presented in various forms to reflect agency-specific conditions. In the future, BARR agencies will integrate aspects of the DCP into their UWMPs for greater consistency among the regional partnership.

Statewide Efforts

DWR and the State Board are implementing a new water use efficiency framework, which is described in the "Making Water Conservation a California Way of Life" final report (DWR, State Board, et al, 2017), California Water Action Plan, and Bay-Delta Water Quality Control Plan. The effects of these efforts on future Bay Area water demands are not yet fully defined. At the same time, climate change uncertainties and the potential for catastrophic events to threaten water supply require that Bay Area water agencies take further actions to guard against these challenges and improve reliability and resilience. Along with continued progress in sustainable water use efficiency, the measures and actions laid out in this DCP better prepare BARR agencies for the future.

Near-Term Efforts

In the near-term, the BARR agencies will further advance plans, explore funding options, and study feasibility for the projects and programs described in this DCP. As previously mentioned, early efforts are underway to advance some BARR drought mitigation measures (e.g., Los Vaqueros [LV] Reservoir Expansion, Transfer-Bethany Pipeline, and Bay Area Water Market Program).

Beyond the measures considered in this plan, BARR agencies are also pursuing other projects individually or with agencies outside

of the BARR partnership to further improve Bay Area supply reliability. Taken together, joint BARR and individual agency efforts are solidifying systems and resources to provide drought reliability with a sustainable, reliable, high-quality water supply and for a healthy community and vibrant Bay Area economy.