



FLOOD PROTECTION

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INFRASTRUCTURE INVESTMENTS TO REDUCE FLOOD RISK IN CALIFORNIA'S CAPITAL REGION

Business Nexus

California's Sacramento Region lies at the confluence of two major rivers, with a combined watershed of 26,000-square miles that includes the Sacramento Valley, and the foothills and mountains of northern California. During winter storm events, runoff from this large watershed rushes past this region, often surging dangerously close to flood stage; threatening the capitol, surrounding cities, towns, and communities. Reducing this flood risk is critical to the social and economic stability of our region and will only be achieved through a streamlined process of improving the existing levee, bypass, and water conveyance system.

Requested Action

- To support construction funding for the Yuba River Basin-Marysville Ring Levee Project, additional construction funding for the West Sacramento Project and additional funding for the Programmatic 408 Program in the FY 2022 USACE Workplan, and;
- To support the following provisions in the Water Resources Development Act (WRDA) 2022: authorization for the Lower Cache Creek feasibility study; and to deauthorize a portion of the American River Common Features – WRDA 16 project at American River North Levee Upstream of Arden Way, and;
- To support funding in FY 2023 to initiate three feasibility studies, to continue design and construction of ongoing projects, and additional funding for the Section 408 Regulatory program.

Background

These actions are necessary for the continued reduction of flood risk in the Sacramento Region. Ongoing projects in the planning, design, and construction phases are critical to significantly reduce life safety risk for more than one million people living in the floodplain and to protect tens of billions of

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dollars of existing infrastructure, thus sustaining the region's rich agricultural productivity, and supporting economic growth.

Thanks to the continued support of the region's delegation, the significant investment in this region over the past years has addressed a portion of the backlog in authorized projects; however, sufficient annual appropriations are still required.

California's Central Valley has a long history of flooding and relies on an elaborate flood risk reduction system to store and convey flood flows. While local farmers and communities constructed some of the Valley's earliest levees, Congressional authorization of the Sacramento River Flood Control Project (SRFCP) led the United States Army Corps of Engineers (USACE) and the State of California to strengthen and expand that original system. The SRFCP consists of approximately 980 miles of levees, in addition to overflow weirs, pumping plants, and bypass channels that protect more than 2.3 million people within 50 communities, 1 million acres of land, and nearly \$38 billion worth of infrastructure. The Central Valley Flood Protection Board (CVFPB) serves as the non-Federal sponsor and is responsible for the operations, maintenance, repair, replacement, and rehabilitation of the SRFCP. The CVFPB relies on local maintaining agencies to care for the system and share in the cost of Federally-authorized improvements.

While the typical approach to flood risk reduction relies primarily upon USACE to lead project development and implementation, the state and local agencies in the Central Valley have assumed a greater role since the passage of the Disaster Preparedness and Flood Protection Bond Act of 2006 (Proposition 1E). Proposition 1E authorized \$4.1 billion in general obligation bonds to improve California's most vulnerable flood infrastructure to protect homes and prevent loss of life. Up to \$3 billion of the bond was specifically allocated for the evaluation, repair, improvement, or expansion of the Federally-authorized levee system.

The availability of these state funds has resulted in the state and local agencies partnering for the implementation of levee improvements to protect high-risk areas. To date, over \$2.5 billion in state and local funds have been invested in projects primarily focused on urban levee improvements in Sacramento, West Sacramento, Yuba City, Plumas Lake, and Wheatland. Most of these projects also serve as advanced construction for ongoing or completed USACE planning studies.

Ongoing Federal Programs, Projects, and Studies

To further reduce flood risk in the Central Valley, additional federal investment is needed for the USACE Projects listed in the following table. A detailed description of each project follows the table.

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	Program/Project /Study Name	Approp.	Phase	Const. Authority	Short-Term Goal	FY 2022 Omnibus	FY 2022 Workplan	FY 2023 Budget
1	American River Watershed (ARW) – Common Features: WRDA 2016	C	C	YES	Fully funded for ongoing design and construction activities. Deauthorize a portion of the levee in WRDA 2022.	\$0	\$0	N/A
2	ARW – Common Features: Natomas Levee Improvement	C	C	YES	Continue ongoing design and construction activities. Support FY 2023 funding.	\$156,915,000	\$156,915,000	\$172,700,000
3	ARW - Folsom Dam Raise	C	C	YES	FRM features fully funded for ongoing design and construction. Ecosystem funding not needed yet.	\$0	\$0	N/A
4	Cache Creek Settling Basin	I	F	YES	Support FY 2023 funding to initiate study.	\$0	\$0	\$0
5	Lower Cache Creek	I	D	NO	Support FY 2023 Community Program Funding request to continue PED. Support inclusion for authorization in WRDA 2022	\$2,000,000	\$2,000,000	\$0
6	Sacramento River Bank Protection Program	C	C	YES	Support FY 2023 Community Program Funding request to continue needed repairs to the SRFCP.	\$0	\$0	\$0
7	Upper Yuba River Basin Comprehensive Study	I	F	NO	Support FY 2023 Community Project Funding request for new start funding to initiate cost shared feasibility study.	\$0	\$0	\$0

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	Program/Project/ Study Name	Approp.	Phase	Const. Authority	Short-Term Goal	FY 2022 Omni	FY 2022 Workplan	FY 2023 Workplan	FY 2023 Budget
8	West Sacramento Project	C	C	YES	Support additional funding in FY 2022 USACE Workplan. Support FY 2023 funding to continue construction.	\$17,900,000	\$35,900,000		\$79,701,000
9	Yolo Bypass Comprehensive Study	I	F	NO	Support FY 2023 funding to initiate Comprehensive Study.	\$0	\$0		\$500,000
10	Yuba River Basin Flood Damage Reduction – Phase 3 Marysville Ring Levee	C	C	YES	Secure FY 2022 USACE Workplan funds for a PACR. Support FY 2023 Community Project Funding request from either the Bi-Partisan Budget Act of 2018, the Infrastructure Investment and Jobs Act when submitted to continue construction.	\$0	\$0		\$0
11	Review of Non-Federal Alteration of USACE Civil Works Projects (Section 408)	O&M	O&M	N/A	Secure additional FY 2022 USACE Workplan funds and support FY 2023 Community Project Funding request when submitted to process existing and planned Section 408 permissions.	\$10,000,000	\$13,000,000		\$10,000,000

1. American River Watershed (ARW) - Common Features WRDA 2016: Non-Federal Sponsor: Sacramento Area Flood Control Agency & Central Valley Flood Protection Board Contact: Pete Ghelfi, 916-874-7606, ghelfip@saccounty.net.

The project is fully funded. Request to deauthorize a segment at the American River North levee upstream of Arden way in WRDA 2022. In December 2016, the work identified in the ARW Common Features General Re-Evaluation Report (GRR) was authorized for Federal construction. The authorized work addresses deficiencies along the Sacramento River east levee south of the American River and the north area streams levees, as well as a comprehensive assessment of erosion potential along the American and Sacramento Rivers. Beyond recommending standard levee improvements, the authorized work includes the benefit of broader improvements to the flood system including widening of the Sacramento Weir and Bypass to reduce flood stages along the Sacramento River. Received full funding, \$1,565,750,000 from the Bi-Partisan Budget Act of 2018 (Public Law 115-123) and executed a Project Partnership Agreement (PPA) to complete the design and construction of the authorized project. The non-Federal sponsors have constructed a portion of the most critical components ahead of Federal construction to advance flood-risk reduction for the citizens. Federal construction has been underway for four years and will increase in scope in the coming years. It is anticipated that four major construction projects will be awarded in FY 2022/2023 (American River Erosion, Sacramento River Erosion, Sacramento River Cutoff Wall, and Sacramento Weir/Bypass widening).

2. ARW - Common Features, Natomas Levee Improvement Project: Non-Federal Sponsor: Sacramento Area Flood Control Agency & Central Valley Flood Protection Board Contact: John Bassett, 916-874-8731, bassettj@saccounty.net

Support for FY 2023 budget request of \$172,700,000 to complete construction in FY 2023. In June 2014, the work identified in the Post-Authorization Change Report (PACR) for the Natomas Basin under the ARW Common Features authority was authorized for Federal construction. The authorized work includes improvements to the 42-miles of levee surrounding the basin necessary to provide 200-year flood protection to the approximately 100,000 residents: and critical infrastructure, like the Sacramento International Airport and two interstate highways. The non-Federal sponsors have already completed more than \$400 million of advanced construction toward the authorized project. The remaining work will be completed by the USACE. The USACE has awarded the construction contracts for six of the nine reaches and has the remaining reaches under design.

3. ARW - Folsom Dam Raise: Non-Federal Sponsor: Sacramento Area Flood Control Agency Contact: Pete Ghelfi, 916-874-7606, ghelfip@saccounty.net.

No funding is needed in FY 23. Background information only. There are currently two actions ongoing: dam raise and ecosystem restoration each with its own PPA. The dam raise is fully funded, and the ecosystem project is under design. A PPA was executed in 2019 and construction began in 2020. The project consists of a raise of 3.5 feet to the dikes and wing dams around Folsom Lake, as well as a modification of the gates on the existing spillway, constructed under this project authority in conjunction with the Folsom Dam Modifications project. Raising the dam will increase the ability to



manage storms larger than the 200-year event and improve the robustness and reliability at managing less than 200-year storm events. The dam raise was fully funded in 2018.

Ecosystem restoration is also an authorized component of this project, focusing on improving salmon habitat in the Lower American River through improved temperature control for Folsom Dam releases. Design of the Temperature Shutters is currently underway.

4. Cache Creek Settling Basin: Non-Federal Sponsor: Central Valley Flood Protection Board
Contact: Kevin Brown, (916) 574-2739, kevin.brown@water.ca.gov or Nicole Ortega-Jewell, 916-456-4400, ortega-jewell@mbkengineers.com.

Request support for a Community Project Funding request when submitted in the amount of \$1,500,000 in FY 2023 to initiate and complete a feasibility study. The Cache Creek Settling Basin (CCSB) is a part of the SRFCP constructed by the USACE in 1937 at the terminus of Cache Creek to preserve the floodway capacity of the Yolo Bypass by entrapping the heavy sediment load carried by the Cache Creek before its waters release into the Yolo Bypass. The facility was re-authorized in 1987 and improved in 1993 to enlarge the basin to its current sediment management capacity. The USACE 1987 Final General Design Memorandum (GDM) included raising the weir by 6 feet to an elevation of 38.5 feet at year 25 of the project life, or in 2018, based on the anticipated rate of sedimentation within the Basin. The CVFPB sent a letter to USACE in 2013, to formally request the USACE to initiate a study and associated environmental compliance, in order to not only address the federal interest in the proposed weir raising and improve Basin deficiencies, such as under seepage in the south and west levees but to also evaluate flood impacts upstream and adjacent to the City of Woodland from changes in the Basins topography while improving sediment trapping efficiency and lifespan of the CCSB. This is in addition to enabling compliance with regulatory requirements to reduce mercury loads from the Basin. \$1.5M in Federal funds will complete this study.

5. Lower Cache Creek Project: Non-Federal Sponsor: Central Valley Flood Protection Board and City of Woodland
Contact: Ric Reinhardt, 916-456-4400, reinhardt@mbkengineers.com or Corey Lasso 916-574-1041, corey.lasso@water.ca.gov.

Funding for a Community Project Funding is requested in the amount of \$2,940,000 in FY 2023 to complete PED. Additionally, request support for project authorization in WRDA 22. A feasibility study was completed in February 2021 and a USACE Chief of Engineers report was signed in June 2021. The 2017 rain events and flood fight efforts have heightened the flood risk concerns in the area. The USACE's project will extend horizontally above the north end of the city limits, starting just west of County Road 98 and tying into the Cache Creek Settling Basin levee east of Interstate 5. It includes the construction of 5.6 miles of new levee and seepage berms, installation of cutoff walls in 2.3 miles of existing levees, and construction of approximately 5.6 miles of drainage channels, among other features. The project will be augmented by the City's related Woodland Flood Risk Management Project, which proposes additional flood risk reduction actions for properties and structures north of the City and addresses state criteria for 200-year flood protection. Once the projects are completed, more than

one thousand Woodland properties will be removed from special flood hazard areas, eliminating federal mandates for high-cost flood insurance and restrictions on improvements.

6. Sacramento River Bank Protection Program: Non-Federal Sponsor: Central Valley Flood Protection Board

Contact: Dave Wheeldon, 916-574-1243, dave.wheeldon@water.ca.gov or Nicole Ortega-Jewell, ortega-jewell@mbkengineers.com

Request support for a Community Project Funding request when submitted in the amount of \$20,000,000 in FY 2023 to continually monitor and address erosion repairs to the SRFCP levee system. The Sacramento River Bank Protection Program (SRBPP) was authorized in Section 203 of the Flood Control Act of 1960. It was subsequently modified in 1974 to add 405,000 linear feet. Section 3031 of the Water Resources Development Act of 2007 (WRDA 2007) authorized an additional 80,000 linear feet. The SRBPP is a USACE-led program that evaluates the levees bordering the river and repair and rehabilitates stream bank erosion sites along the SRFCP

The authorization was based on the recommendation of the Chief of Engineers in a report dated May 9, 1960 (Chief's Report). When the SRFCP was turned over to the State by execution of the 1953 Memorandum of Understanding, there was a growing concern that the system that was constructed to flush hydraulic mining debris and maintain navigable waters was eroding the banks of the river and threatening the levees. The Chief's Report recommends an ongoing program to construct bank protection as "new work" and also makes clear that bank protection is a capital improvement and therefore beyond what can be funded by local agencies. USACE did conclude there was a maintenance element to the bank protection, which was the basis for a recommended 2/3 Federal cost share to cover the capital improvement cost and 1/3 local cost share to cover the Operations and Maintenance repair along with the local share, including Land, Easements, Rights of Way, Relocations, and Disposal (LERRDs).

7. Upper Yuba River Basin Comprehensive Study: Non-Federal Sponsor: Yuba Water Agency

Contact: Willie Whittlesey; 530-741-5026, wwhittlesey@ycwa.com

Request support for a Community Project Funding request when submitted in the amount of \$1,500,000 in FY 2023 to initiate the comprehensive study. Yuba Water Agency proposes to enter a cost-shared feasibility study as the non-Federal project sponsor with USACE for the "Upper Yuba River Basin Comprehensive Study" (Study). The Study will examine comprehensive flood damage reduction measures to protect recently improved Federal levees and reduce flood risk in many communities, including an investigation of the Federal interest in the proposed Atmospheric River Control (ARC) Spillway at New Bullards Bar Dam.

The ARC Spillway is a proposed new spillway at the New Bullards Bar Dam on the North Yuba River, the fifth tallest dam in the U.S., which impounds a maximum capacity of nearly one million acre-feet. The new spillway gates will be 31.5 feet lower than the existing spillway gates, enabling management of an additional 117,000 acre-feet of reservoir space for earlier releases of up to 35,000 CFS in advance of storms, providing additional reservoir space to capture and store peak inflows. This enhanced flexibility

improves the management of high flows through the system and enhances the integrity, performance, and protection of Federal levees by reducing peak river stage and flows on the Lower Yuba and Feather Rivers.

In addition, the ARC Spillway has significant benefits upstream of the Feather/Yuba confluence under Forecast Informed Reservoir Operations (FIRO). The Study will complement ongoing Federal actions to enable implementation of FIRO through updated Water Control Manuals at New Bullards Bar and Oroville dams. The ARC Spillway is key in achieving the full benefits of FIRO operations. Preliminary modeling discloses that the combination of new spillway infrastructure and operational enhancements provides significant regional flood risk reduction benefits.

8. West Sacramento Project: Non-Federal Sponsors: West Sacramento Area Flood Control Agency & Central Valley Flood Protection Board

Contact: Greg Fabun, 916-617-4855, gregf@cityofwestsacramento.org, or Eric Nagy, 530-665-8222, eric@larsenwurznel.com.

The project was included as a new construction start in the USACE FY 2022 budget; however, support is requested for an additional \$18 million if Workplan Funding is available. Support for FY 2023 budget request of \$79,701,000 for continued construction. The West Sacramento Project (Project) was authorized in the 2016 Water Infrastructure Improvements for the Nation Act. The current total Project cost is \$1.17 billion (October 2020 update). In advance of federal funding, the City of West Sacramento (City), the West Sacramento Area Flood Control Agency (WSAFCA), and the State of California invested \$210 million in construction to immediately reduce flood risk to the City's 54,000 residents and to protect \$6.7 billion in damageable assets. This advanced construction includes the first component of the authorized Project, the Southport Setback Levee Project. The USACE received \$3.9 million for pre-construction engineering and design (PED) activities for the Project over three fiscal years, FY 2019 thru 2021. Due to the piecemeal funding, the USACE supported the non-federal sponsor in leading the design of the next two Project increments, which were completed in FY 2021. The City and WSAFCA appreciate the *New Construction Start* and \$17.9 million included in the 2022 Energy and Water Appropriations Act. The City and WSAFCA also request a minimum of \$18 million and up to the full federal share in additional construction funding in the FY 2022 USACE Work. Additional construction funding would make it possible for the two adjacent project increments already designed, to be completed with a single construction contract and facilitate maintaining the approved construction schedule.

9. Yolo Bypass Comprehensive Study; Non-Federal Sponsor: Sacramento Area Flood Control Agency & Central Valley Flood Protection Board

Contact: Gary Bardini, 916-874-7606, bardinig@saccounty.net.

Support for FY 2023 budget request of \$500,000 to initiate the comprehensive study. The Yolo Bypass is a 40-mile long, 59,000-acre federal flood management facility constructed in the 1930s. It is designed to divert 80% of the Sacramento River watershed flood flows, which results in reducing risk to \$68 billion in property and 650,000 people in the Sacramento Metropolitan area. While located within the Sacramento-San Joaquin Delta National Heritage Area, it serves as a major project feature of the

Sacramento River Flood Control Project (SRFCP) and is central to a systems approach to reducing flood risk to the Sacramento metropolitan area, small communities, and adjacent non-urban areas. In 2016, the Yolo Bypass – Cache Slough Complex (YBCS) Partnership was formed between 15 federal, state, and local agencies to establish a new era of multi-benefit collaborative planning that encourages collaboration on regional solutions to implement landscape-level change. This partnership creates a unique opportunity for interagency collaboration in pursuit of a common plan of activities that would advance the national interest in flood risk reduction, ecosystem restoration, agricultural sustainability, resilient water supply, and quality, and recreational opportunities. The State of California is currently developing a Master Plan to reflect how proposed improvements to reduce flood risk and restore vital ecosystems in the Yolo Bypass should be integrated. In 2020, Congress authorized the USACE to conduct a formal feasibility study called “Comprehensive Study of the Sacramento River, Yolo Bypass, CA”, to identify actions to be undertaken by the Secretary for the comprehensive management of the Yolo Bypass System for the purposes of flood risk management, ecosystem restoration, water supply and quality and recreation. The goal of the proposed federal comprehensive study is to align local, state, and federal agency interests around a vision of (1) providing essential conveyance capacity and improving the resilience, reliability, and adaptability of the flood system to climate change, (2) preserving agricultural land and promoting a strong, sustainable agriculture economy, and (3) conserving and improving the functionality of aquatic and terrestrial species habitat consistent with the paramount purpose of the flood system. This study will include a reexamination of the full scope of what constitutes “Federal Interest” among the various federal agencies in Yolo Bypass.

10. Yuba River Basin Flood Damage Reduction Project – Phase 3 Marysville Ring Levee: Non-Federal Sponsors: Yuba Water Agency, Marysville Levee District, and the Central Valley Flood Protection Board Contact: Willie Whittlesey; 530-741-5026, wwhittlesey@ycwa.com or Tom Engler 916-456-4400, engler@mbkengineers.com.

Support is needed for \$1,300,000 in the FY 2022 Workplan to complete a Post Authorization Change Report. Support for a Community Funding Request when submitted in the amount of \$47,703,000 for FY 2023 from the Infrastructure Investment and Jobs Act, the Bi-Partisan Budget Act of 2018 or the Energy and Water Resources appropriations. The Yuba River Basin flood damage reduction project is an unprecedented initiative to provide greater than a 200-year level of protection for Yuba County communities. To advance this Federally authorized project, the state and local interests (Yuba County, Yuba Water Agency, Marysville Levee District, and the Three Rivers Levee Improvement Authority) began an advanced construction program in the southern portion of the county. Improvements are now complete on 29 miles of levees (estimated cost - \$450 million), including the construction of two setback levees: the 2-mile-long Bear River setback and 6-mile-long Feather River setback. These setbacks, besides providing greater regional flood protection, also resulted in the creation of nearly 2,200 acres of floodplain habitat along the Bear and Feather rivers.

The USACE is presently repairing sections of the Marysville Ring Levee. These improvements to the 7.5-mile-long levee which surrounds the City of Marysville are the final scheduled improvements of the entire project. Construction is complete on most of the project (Phase 1 (2012), Phase 4A (2017), Phase 2A-North (2018), Phase 2A-South (2019), and Phase 2C (2020)). Construction of Phase 3 is currently underway for completion later this year and the final critical component, Phase 2B - Segments D1 and

D2, are ready to be awarded as soon as additional funding can be secured. The project was fully funded by the FY 2019 appropriation of \$35.5 million and the \$13.586 million from the Bi-Partisan Budget Act of 2018 (P.L. 115-123). However, recent construction cost increases and design refinements have resulted in an increase in the authorized Total Project Cost and the need for additional funding, and a potential increase in the project's 902 limits to complete.

11. Review of Non-Federal Alteration of USACE Civil Works Projects (Section 408 Program): Non-Federal Sponsor: Central Valley Flood Protection Board

Contact: Leslie Gallagher, 916-574-0609, leslie.gallagher@cvflood.ca.gov or Nicole Ortega-Jewell, 916-456-4400, ortega-jewell@mbkengineers.com.

Support is needed for FY 2022 workplan funds of \$3,000,000 to the Sacramento District. Support for either FY 2023 Community Funding request when submitted or workplan funding for \$13,000,000. Continued support for funding in FY 2023 with an amount to be determined when the President's budget has been released Funds are used to enable USACE to coordinate with the requester and review of proposed alteration. Through Section 408 reviews, USACE ensures that the alteration will not adversely impact the public interest and will not impair the usefulness of the authorized USACE projects. The number of Section 408 requests in any year is dependent on many factors – primarily actions, schedules, and resources external to USACE. The allocated amount has been inadequate since it became a line item under the Operations and Maintenance account. USACE has continuously exhausted its funding by third quarter, delaying many locally led flood improvement projects, and the Sacramento District has encouraged requesters to provide their own funds under a Section 1156 Funding Agreement to process the necessary reviews and permission. The increase in the FY 2021 Workplan successfully addressed this issue; however, a cut in this level of funding in FY 2022 will not be able to sustain the increase of State-funded efforts planned in the next few years. An increase in funding is required to adequately address the backlog of permitting review and decisions and to reduce the cost by local implementors.