

STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

STAFF SUMMARY REPORT: Dr. A.L. Riley
MEETING DATE: March 9, 2022

ITEM: 7

Planning Stream Projects for Communities with Flood Damages – Information Item

DISCUSSION

This item will provide an overview of *A Primer on Planning Stream Projects for Communities with Flood Damages* (Primer), which we recently released. The Primer complements our ongoing public education efforts about managing streams and rivers to protect water quality. It explains the best methods to design flood control projects that reduce flood damages while also achieving environmental benefits. The Primer is intended to help streamline the permit application and review process by clearly describing the information needed for a complete permit application ready for approval. We previously released another primer, *A Primer on Stream and River Protection for the Regulator and Program Manager*, which introduced the relationships between water quality and healthy streams and riparian environments.

Our goal now is to improve how we help project proponents efficiently receive authorization for their projects from the Board. We are doing this by supporting designs that are: appropriately informed by natural form and function to maximize their beneficial uses and associated environmental benefits; well-positioned to take advantage of creek restoration grant opportunities; and completed with an understanding of how they may engage with the federal funding process. Technical advice, such as primers like this, is more urgent today as projects must address the increasing impacts of climate change.

We have conducted public presentations and held numerous workshops and field trips for agencies and the private sector to update our partners on methods to reduce flood damages while also achieving environmental benefits. The Board protects streams and rivers through issuance of Clean Water Act section 401 water quality certifications and National Pollutant Discharge Elimination System permits and Waste Discharge Requirements under the Porter-Cologne Act. The beneficial uses of the waters of the state, including cold freshwater habitat for fish, fish migration, tidal areas, and wildlife and rare, threatened, and endangered species habitat, are directly tied to the physical integrity of streams and rivers and their floodplains and riparian corridors.

Flood control projects historically have involved partnerships among counties, cities, and federal agencies, including the U.S. Army Corps of Engineers and Natural Resources Conservation Service. From the late 1930s to now, Bay Area communities along creeks including Alameda, Walnut, San Pablo, Corte Madera, Novato, Pinole, San Ramon, Guadalupe, Uvas, and Llagas creeks, have been adversely impacted by the failure of conventional flood control project designs to achieve the project objectives in which local governments have invested. As well, some of the most serious environmental impacts to our region's creeks have been caused by these older, conventional flood control strategies, which include channelization, levees, vegetation removal, rocking, and concrete lining. Many of these projects have also resulted in enormously costly maintenance burdens on local governments. Several of these creeks travel through and serve communities with Black, Indigenous and LatinX residents who have historically and repeatedly incurred the flood damage. Designing and permitting these projects to effectively reduce flood

damages while also achieving environmental benefits better supports the residents of those communities.

The Primer takes the readers through the lessons learned from the failures of these conventional projects and how the federal agencies that cosponsored many of these failed projects have recognized their performance problems. As a result of these experiences, in the 2000s federal agencies issued new manuals on flood reduction project design.

Many Bay Area communities have been burdened by flood reduction projects that have not achieved their intended basic property damage reduction services, while enduring reduced water quality, loss of native fish and plant communities, and impacts to recreational opportunities and quality of life. The good news about the changes in engineering practices is that we have learned how to get better flood reduction benefits while dispelling the previous convictions that flood and erosion control and environmental protection and restoration were mutually exclusive objectives. Rather, they are mutually reinforcing and achievable goals, even in difficult and constrained urban environments. The Primer describes this new generation of projects, which provide community aesthetics, recreation, water quality, climate change resiliency and practical remedies for the common problems of flooding and stream bank failures.

APPENDIX

- A. Riley, A.L., *A Primer on Planning Stream Projects for Communities with Flood Damages: Technical Reference Circular*, Water Board 2020

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