

Climate resiliency benefits of Water Supply and Water Quality Bond Act of 2018

The bond act responds to the challenges of climate change in three important ways

- A. Providing a water supply which is minimally impacted by climate change
- B. Providing flood management programs which can respond to sea level rise and change precipitation patterns.
- C. Protecting and creating fish and wildlife habitat which will survive the impacts of a changed climate.
- D. reducing the need to pump water long distances, or from great depths in the ground

Water supply

The bond acts funds water supply projects which can withstand changed precipitation patterns caused by climate change. They include

1. Wastewater recycling. Wastewater is a water supply which changes little from year to year, regardless of how much it rains or snows.
2. Desalting saline groundwater. This supply is not affected by climate change.
3. Water Conservation. Reducing demand makes all water supplies go further in dry years, which may increase with climate change.
4. Restoring capacity of flood control dams and allowing them to be used for water supply. This will increase water supply in all types of years: wet or dry.
5. Reducing water use by getting rid of invasive plants like Giant Reed, Tamarisk, and Yellow Starthistle. These benefits will even increase in warmer years, since otherwise these plants will use even more water in warmer years, and will invade new habitats as the climate warms
6. Capturing stormwater for beneficial use. As storm frequency and intensity increases, these projects will provide more and more benefits.
7. Better watershed management will improve the quantity and quality of water running off the Sierra Nevada and other watersheds. These watersheds provide much of California's water supply. This is especially important in a warmer and more variable climate.

Flood management

By providing funding for expansion of flood plains in several categories, the higher flows (especially in winter) expected to result from climate change will be more easily accommodated. Altering flood control dams to better capture and control high flood flows will improve flood control, and also respond to expected higher flood flows. The San Francisco Bay allocation will build wetlands which can buffer the effects of rising sea level.

Fish and Wildlife resiliency

The bond act provides funding for a wide variety of categories which can be used for fish and wildlife habitat protection, restoration, and enhancement. Wildlife will have a difficult time dealing with warmer temperatures, a more variable precipitation regime, and habitat conversion resulting from climate change. By providing money in many categories for fish and wildlife enhancement, the bond act will protect, create, and restore the types of habitat which fish and wildlife need to adapt to a warmer and more variable climate.

Water pumping

Pumping water long distances or from great depths in the ground is the single greatest use of electrical energy in California. The water bond will reduce the need for this pumping in two significant ways.

By providing funds for new wastewater recycling, groundwater cleanup, and water conservation programs, the bond will reduce the need to pump water from Northern California to the Bay Area, Central Coast and Southern California.

By providing funds to implement sustainable groundwater management plans, including retiring farm land for which there is no sustainable groundwater supply, the bond will result in less groundwater being pumped, reducing energy demand. Also, by stabilizing groundwater levels, increased demand for pumping groundwater from ever increasing depths will be avoided.