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Climate Change and State Bonds

PRESENTED TO: Senate Committee on Natural Resources and Water
Hon. Henry I. Stern, Chair

LEGISLATIVE ANALYST'S OFFICE

Future Climate Change Impacts in California

Climate Change Projected to Have Significant Effects on the Environment. Climate change research—including evidence summarized in *California's Fourth Climate Change Assessment*, completed by state agencies—projects that climate change could have a myriad of consequential effects in California.

- ***Sea-Level Rise.*** Recent estimates project that compared to 2000, sea levels along the California coast south of Mendocino will rise between 1.5 inches and 1 foot by 2030 and between 5 inches and 2 feet by 2050. These changes would impact both human and natural resources along the coast, increasing the risk of inundation of buildings and infrastructure, salt water intrusion into groundwater basins, and beach erosion.
- ***Flooding.*** Climate models predict less frequent, but more intense storm patterns, which would increase inland flooding risk. Floods cause significant risk to human life, as well as damage roads, buildings, and other infrastructure.
- ***Temperature Increases.*** Extreme heat events are projected to worsen throughout the state. By midcentury, for example, the Central Valley is projected to experience high heat events that are two weeks longer. Changing temperatures could affect human health, agricultural production, and natural habitats.
- ***Drought.*** Warmer temperatures would contribute to more frequent and intense droughts by leading to more precipitation falling as rain rather than snow, faster melting of winter snowpack, greater rates of evaporation, and drier soils. These conditions decrease the amount of spring snowmelt runoff upon which the state historically has depended for its annual water supply, as well as increases the demand for irrigation water in both agricultural and urban settings.
- ***Wildfires.*** Climate change is expected to make forests more susceptible to extreme wildfires. One study, for example, predicts that by 2100 the frequency of extreme wildfires burning over approximately 25,000 acres would increase by nearly 50 percent, and that the average area burned statewide would increase by 77 percent.

Future Climate Change Impacts in California

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- ***Warming Oceans.*** Evidence indicates that climate change is degrading the state's marine environment. In recent years, California's coastal environment has experienced a historic marine heat wave, record harmful algal bloom, fishery closures, and a significant loss of northern kelp forests.

Environmental Effects Would Impact Communities Throughout the State. The effects would vary by region and could affect communities differently. Some effects include reduced public health from high heat events; reduced water supply, water quality, and agricultural production from droughts; increased energy costs from increased average temperatures; and increased risks to public safety and infrastructure from flooding and wildfires.

Fiscal Effects of Climate Change

Long-Term Economic Impacts. Emerging research findings suggest economic costs on the order of tens of billions of dollars for California by the end of the century associated with certain climate impacts, particularly increased human mortality, reduced agricultural production, and higher energy expenditures. Another recent analysis estimated that there is $150 billion of property value at risk of damage just from modest sea-level rise projected to occur by 2100.

Future State and Local Fiscal Effects. No comprehensive statewide assessment of future costs to the state or local governments has been completed, but there are clearly several types of potential future costs.

- ***Disaster Response and Recovery.*** State and local governments incur costs to respond to major disasters such as wildfires and floods. To the extent, that climate change increases the risk of such events, there could be large one-time costs. For example, the Governor's 2019-20 proposed budget estimates that the state will pay almost $3 billion to respond to and recover from the Camp Fire that occurred in Paradise in November 2018. (The federal government is expected to reimburse the state for a large share of these costs.)
- ***Annual Operating Expenses.*** Government agencies might devote a greater share of their budget resources to prevention and response activities, such as to combat wildfires, maintain flood protection infrastructure, and supply clean drinking water.
- ***Infrastructure Modifications and Replacement.*** State and local governments have billions of dollars of infrastructure that could be damaged by climate change-induced events, such as wildfires, flooding, and sea-level rise. This infrastructure includes roads and highways, water treatment facilities, schools, and other public buildings. Choices include "hardening" infrastructure to prevent or reduce damage when events occur, making infrastructure more resilient to accommodate changing conditions, and relocating facilities to lower-risk sites.

State Infrastructure Financing in California

Two Ways the State Usually Pays for Infrastructure Projects. The state's infrastructure spending relies on various financing approaches and funding sources.

- ***Pay-As-You-Go.*** Under the pay-as-you-go approach, the state funds infrastructure up front through direct appropriations of tax and fee revenues. Pay-as-you-go spending from special funds makes up a significant share of the state's infrastructure spending, primarily in the transportation sector.
- ***General Fund-Supported Bonds.*** The state traditionally has sold two types of bonds that are typically paid off from the General Fund: voter-approved general obligation bonds and lease revenue bonds approved by the Legislature. (The state also sells bonds repaid from special funds.)

How Bonds Work. Bonds are a way that the state (as well as local governments and private companies) borrow money. The state sells bonds to investors to receive "up-front" funding for projects and then repays investors, with interest, over a period of time.

- ***Why the State Uses Bonds.*** A main reason for issuing bonds is that infrastructure typically provides services over many years. Thus, it is reasonable for people, both currently and in the future, to help pay for projects. Also, the large costs of these projects can be difficult to pay for all at once.
- ***The Costs of Bond Financing.*** After selling bonds, the state makes annual payments over the following few decades until the bonds are paid off. (This is similar to the way a family pays off a mortgage.) The state pays more for a project funded by bonds than if the state does not borrow money for the project because of the interest costs. The amount of additional cost depends primarily on the interest rate and the time period over which the bonds have to be repaid. In the past, we have estimated that the cost of using bonds after adjusting for inflation is about $1.30 for each $1 borrowed.

Recent Natural Resources Related Bonds

$31 Billion in General Obligation Bonds Approved in Prior Two Decades. Since 2000, voters have approved about $31 billion in general obligation bonds in statewide elections to pay for different types of natural resources and environmental protection-related projects. The two most recent such bonds were (1) Proposition 1 in 2014, which provided $7.5 billion primarily for water supply infrastructure, water quality improvements, and habitat restoration activities; and (2) Proposition 68 in 2018, which provided $4.1 billion primarily for state and local parks and habitat conservation and restoration activities.

Most Funding Has Been Committed or Appropriated for Projects. Almost 90 percent of Proposition 1 funding has been appropriated, with most of that committed to specific projects. If the Governor's 2019-20 proposed budget is approved, over half of Proposition 68 funds will have been appropriated in the first two fiscal years since its passage.

Natural Resources General Obligation Bonds Approved by Voters Since 2000

(Dollars in Millions)

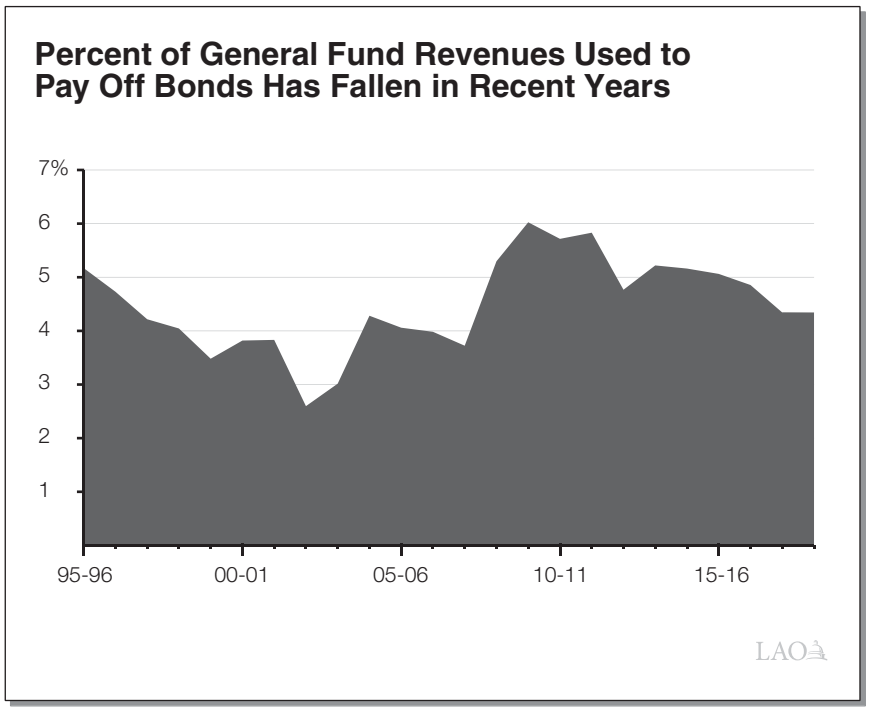
Proposition	Date	Primary Purposes	Amount[a]
12	March 2000	Parks and habitat protection	$2,100
13	March 2000	Water supply and flood protection	1,884
40	March 2002	Habitat protection, water quality, and parks	2,597
50	November 2002	Coastal protection, Delta, water supply and quality	3,345
1E	November 2006	Flood protection	3,990
84	November 2006	Water quality, habitat protection, flood protection, and parks	5,266
1	November 2014	Water supply, habitat protection, and water quality	7,465
68	June 2018	Habitat protection, parks, and flood protection	4,100
Total			**$30,747**

[a] Reflects amounts authorized by voters as adjusted by Proposition 1 and Proposition 68.

State Indebtedness

About $120 Billion in Authorized General Fund Debt. The state has about $82 billion of General Fund-supported bonds on which it is making annual principal and interest payments. In addition, the voters and the Legislature have approved about $42 billion of General Fund-supported bonds that have not yet been sold. Most of these bonds are expected to be sold in the coming years as additional projects need funding.

Annual Debt Payments Represent Less Than 5 Percent of General Fund Spending. Currently, we estimate that the state is paying about $6 billion annually from the General Fund to repay bonds (including roughly $1 billion for natural resources-related debt service). Consequently, the state's debt service ratio—the portion of the state's annual General Fund revenues spent on bond debt—is currently under 5 percent. This is lower than in recent years, and we project that this amount will remain under 5 percent in coming years based on the sale of previously approved bonds and current revenue forecasts.



Important Considerations Related to Bonds

No "Right" Level to Spend on Infrastructure. The amount of infrastructure spending should reflect the state's priorities for infrastructure compared with other state spending. Authorizing General Fund-supported bonds, however, obligates future General Fund resources for repayment for those bonds, thereby presenting an opportunity cost to use those future resources for other priorities.

Focusing on Long-Term Benefits Important. As a general principle, general obligation bonds should be used for the construction and acquisition of capital improvements as well as associated planning costs. Directing bond funds to long-term capital improvements ensures that bond spending provides benefits over many years so that future taxpayers do not bear the cost of projects that do not benefit them.

Consideration of State Versus Local Benefits. When designing bond measures, the Legislature must determine how much funding to provide to meet state versus local or regional needs. State-level public benefits provide value to the people of California as a whole—rather than specific local communities—and thus should be paid for by the state. Historically, the state also has given priority to local projects in communities with lower-ability to pay themselves.

Determining Method for Distributing Funds. Different fund allocation methods—such as direct funding to state departments, competitive grant programs, or per-capita payments to local governments—can be used to better achieve desired outcomes for specific programs.

Ensuring Long-Term Operations. It is important that funding be available to operate and maintain the capital investments so that they continue to provide services over their entire expected lifespan.

Ensuring Accountability and Oversight. Departments should be required to collect and evaluate data on project outcomes to allow the Legislature and voters to understand what has been achieved with the investment of the bond dollars. Accountability requires that information on programs be public, accessible, and timely.

Other Funding Options to Address Climate Change Impacts

Existing State and Local Revenue Sources. For the redirection of existing revenue sources, it is important to weigh the proposed use of funds against other policy priorities.

- ***General Fund.*** The Governor's January budget assumes state General Fund revenues of $143 billion in 2019-20. Cities, counties, and special districts had general revenues of roughly $90 billion in 2016-17.
- ***Existing Special Funds.*** For example, state natural resources and environmental protection departments spend about $5 billion annually from special funds, which generally receive revenues from various taxes and fees. Some of these have been used for climate adaptation planning and projects, such as the Greenhouse Gas Reduction Fund and the Environmental License Plate Fund. Local governments also have special fund revenues from local taxes and fees. For example, local water agencies raise about $15 billion to provide water services.
- ***Local Bonds.*** Local governments also have authority to issue bonds. Cities, counties, and special districts spend roughly $8 billion annually on debt service from all fund sources.
- ***Enhanced Infrastructure Financing Districts (EIFD).*** First authorized in 2014, EIFDs allow cities, counties, and special districts to use property tax increment (the growth in tax revenue year over year) to finance a wide variety of capital projects, including projects to adapt to the impacts of climate change.
- ***Federal Grants.*** For example, the Hazard Mitigation Grant Program (HMGP) is a federal grant program that is designed to help communities implement hazard mitigation measures that reduce the risk of loss of life and property from future disasters. States are eligible to receive this funding following a large disaster that receives a Presidential Major Disaster Declaration. Eligible mitigation measures include activities such as elevating buildings at risk for flooding, creating defensible space by clearing brush and trees from around structures in areas prone to wildfires, and completing fuel reduction projects within two miles of structures. The state expects to receive over $1 billion in HMGP funds for the 2017 and 2018 disasters.

Other Funding Options to Address Climate Change Impacts

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Raising New Revenues. The Legislature (or local governments) could choose to increase charges on different segments of the population. This could be a tax broadly applied, a charge specifically targeted to certain polluters of carbon emissions (such as the existing cap-and-trade program), or a charge on properties or individuals that would most likely benefit from mitigation projects.

- ***New Taxes or Fees.*** New state level taxes require a two-thirds vote in each house of the Legislature. Local governments generally can increase taxes for a specific purpose with a two-thirds vote. They can increase taxes for a general purpose with a majority vote. Generally, governments can increase fees with a majority vote if the benefits or service provided are proportionate to the amount paid.
- ***Constraints on Raising Revenues.*** State and local governments face some other limitations on their ability to increase revenues for climate adaptation or other activities.
  - ***Proposition 13 (1978) Requirements.*** Limits a property's overall tax rate for all local governments serving the property to 1 percent of its purchase price. While property taxes remain the single largest source of local tax revenue for cities and counties, these local governments increasingly rely on other local taxes to make up for the revenue loses that resulted from Proposition 13. The year before Proposition 13 passed, property taxes comprised over 90 percent of cities' and counties' local tax revenue. Today, that share is less than two-thirds.
  - ***Proposition 218 (1996) Requirements.*** Higher voter thresholds for approving property-related fees and assessments, as well as stricter "cost-of-service" requirements in determining costs to each property owner.
  - ***Proposition 26 (2010) Requirements.*** Limits state's ability to impose fees (rather than taxes) to fund certain activities, such as environmental mitigation projects.