The California Optimization Bond: Portfolio Financing for Wildfire, Forest, and Headwaters Resilience

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Context

This California project will leverage our work in Wales, UK. There we are working with public, private and community partners to build a national-scale “nature with net-zero” pipeline, using our Universal Toolkit to turn diverse restoration projects, blue-green and grey water-management and energy infrastructure, and community initiatives into a coherent, investable portfolio that explicitly spans natural and built assets. The work is already informing government policy, attracting interest from institutional and philanthropic capital, and creating a repeatable model for aligning climate, biodiversity and just transition outcomes. By tailoring this proven, data-driven approach to California, SB 254 can draw on a live test-bed, shared technical standards and a ready-made network of

global scientists, investors and implementation partners, significantly de-risking a statewide Optimization Bond program.

From Fragmented Project Finance to a Statewide Optimization Bond

California faces rising wildfire, forest health, and headwaters risks that are currently financed through fragmented, project-by-project grants, bonds, and emergency expenditures. This raises the overall cost of capital, slows delivery, and makes it hard for utilities, insurers, and communities to see how investments in forest and watershed resilience translate into measurable risk reduction and improved economic outcomes.

This submission proposes a state-scale Optimization Bond (OB) program that treats California's forests and watersheds as a single, policy-aligned portfolio incorporating a collection of disconnected, likeminded projects. The program would coordinate multiple existing and emerging instruments—municipal and green bonds, Forest Resilience Bonds, outcomes-based contracts, beneficiary payments from utilities and insurers, and revenues from carbon, biodiversity, and water markets—inside one optimized capital stack.

Using a transparent process architecture, the OB program would: (1) intake and screen eligible headwaters and wildland–urban interface projects; (2) crosswalk them against the Wildfire & Forest Resilience Action Plan, CARB Natural & Working Lands strategy, SGMA and water planning, and equity and Tribal frameworks; (3) run portfolio optimization to sequence projects across basins and agencies to meet program-level objectives for risk reduction, carbon stability, biodiversity, and water outcomes at the lowest feasible weighted average cost of capital; and (4) structure issuance templates and safeguards that are compatible with the State Treasurer's Office, IBank, and relevant regulatory expectations.

The program would be underpinned by a digital-twin and measurement, reporting, and verification (MRV) backbone that standardizes metrics for fire risk, avoided loss, carbon stocks, habitat condition, and water yield, and links them to beneficiary and investor reporting. Shared data rooms, public dashboards, and third-party assurance would provide an auditable record of outcomes and affordability and could be designed to interface with catastrophe models and insurance-regulatory frameworks considered under SB 254. The architecture would build on an institutional framework and digital tooling already proven in a national-scale program in Wales, adapted for California's legal and policy context.

The OB concept is not a new instrument so much as a new way of coordinating existing instruments and institutional capabilities. What is novel is the combination of: program-level portfolio optimization; a stacked, multi-payer capital structure; shared MRV across agencies and beneficiaries; and repeatable issuance frameworks that can be replicated across watersheds and to other natural catastrophe perils.

We recommend that the Legislature and relevant agencies support a Feasibility & Pilot Consortium to design and test the OB model in two pilot watersheds that are representative of headwaters and wildland–urban interface risk. Subject to data availability, we would further recommend a State-wide portfolio evaluation that will frame the ultimate scale, composition and impact of the OB over time. The consortium would refine governance, MRV specifications, affordability safeguards, and issuance templates; align pipelines from existing vehicles such as Forest Resilience Bonds and landowner aggregation programs; and generate evidence on avoided loss, investor appetite, and consumer affordability. The goal is to provide SB 254 decision-makers with a concrete, implementable pathway to scale nature-based risk reduction as infrastructure for California's catastrophe resilience.