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Task 4 Report: Funding and Financial Mechanisms to Support Advance Mitigation

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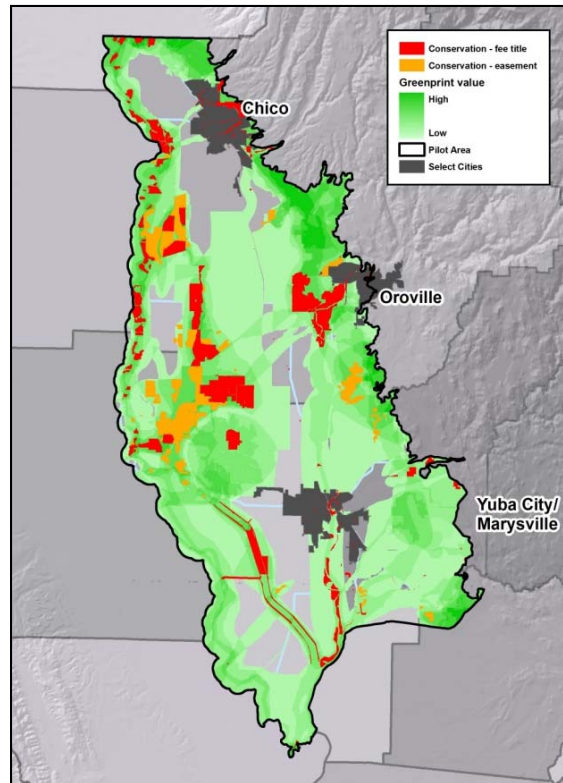
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Statewide Advance Mitigation Funding and Financial Strategies
Study for the California Department of Transportation

Task 4 Report:
Funding and Financial Mechanisms to Support Advance Mitigation

Final Research Report UCD-ITS-RP-15-04



Map: Patrick Huber, UC Davis

January 6, 2015

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Executive Summary

Overview

The mission of Caltrans is to “provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability.”¹ Meeting the state’s needs for improved mobility and preserving its environmental resources are both critical goals, but they sometimes stand in tension with one another. Avoidance, minimization and mitigation in advance of projects are important ways to achieve a sustainable transportation system. Advance mitigation can contribute to landscape-scale conservation programs while also allowing infrastructure improvements to be realized. Finding the financial means to achieve successful implementation of advance mitigation is challenging and requires adapting and developing appropriate strategies, and modifying organizational and legal barriers that block the capabilities of existing institutions.

The aim of this report is to identify some of the funding and financial mechanisms to implement an advance mitigation program, while acknowledging that certain aspects of this question are beyond the scope of this study and are being addressed by Caltrans through other pathways. For instance, some steps to make funds available for advance mitigation can be undertaken by Caltrans internally and are already known to the agency. These include creating an advance mitigation line item in the agency’s budget, or developing a mechanism for pooling mitigation funds across multiple projects, and by planning for earlier, more comprehensive mitigation actions. The agency has recently programmed annual funding for advance mitigation within the “SHOPP Program.” This allocation makes \$5 million available per year for advance mitigation of maintenance-oriented projects in its State Highway Operation and Protection Program. Recent inquiries suggest that the state is working to implement this program and that, planned mitigation banking, an important component of this program, is not yet in place.²

Given the expertise of Caltrans Division of Budgets and other staff in this domain,³ it was also defined as beyond the study scope to explore initiatives that might increase traditional or introduce new transportation revenue sources to raise funds for advance mitigation. Caltrans has undertaken several reviews of potential sources of new revenue for transportation including sources as diverse as: increasing or indexing to inflation the state motor fuel tax, introducing freight container fees, adding revenue-producing high occupancy toll (HOT) lanes throughout the state, adding truck only toll lanes, and raising vehicle registration fees throughout the state.⁴ Most of these would require action by the Legislature. It is not an objective of this study to analyze their political feasibility, though the recent decline in the pump price of gasoline has prompted many commentators to suggest that this change may have created a window of opportunity to consider raising new transportation revenue.

While this study was being conducted, the California Legislature enacted and the Governor signed into law SB 1077, which provides for a trial of substantial scale of road user charges (RUCs),

1 California Department of Transportation. Mission and Vision. Retrieved 18 Jul 2014 from the Department’s website: <http://www.caltrans.ca.gov/hq/paffairs/about/mission.htm>.

2 Gliddon, Athena. Personal communication. October 13, 2014.

3 Gliddon, A. (2009). Potential Transportation Revenue Options for California. Sacramento, CA: California Department of Transportation (Caltrans) Division of Budgets.

4 Mineta Transportation Institute, San Jose State University, Transportation Financing Opportunities for the State of California (MTI Report 06-01), October 2006

which are also referred to as mileage-based user fees (MBUFs).⁵ The California Transportation Commission (CTC) has appointed a Technical Advisory Committee (TAC) for this study and has announced that it plans to begin the legislatively-required design of a pilot program in January of 2015. The findings of this study suggest that Caltrans should explore with the Commission and its TAC the merits of including funding for advance mitigation in the development of plans for the development and allocation of such new funding for transportation.

To finance advance mitigation in California, Caltrans should focus on the need to take direct, near-term action consistent with existing programs, while keeping clearly focused on a longer-term vision that can change and shape those programs over time. Advance mitigation is already being achieved by Caltrans through partnerships with several counties through Habitat Conservation Plans (HCPs) that are funded by Local Option Sales Taxes (LOSTs). Building upon that experience, the longer term vision would likely include larger numbers of partnerships with other agencies and broader, statewide funding and finance programs, and surely these will require more substantial and stable sources of funding.

The four key findings of this study are:

1. **There is no single available external funding source that Caltrans can tap immediately and independently to fund a state-initiated advance mitigation initiative.**
2. **Partnerships between Caltrans and other agencies provide important opportunities for Caltrans to leverage potential funding sources and to make advance mitigation a reality.**
3. **New revenue sources will be needed to support advance mitigation in California. Where local option sales taxes are being considered, there is a particular opportunity to pair advance mitigation with a new or renewed revenue measure for transportation investment. Additional sources of federal, state, and local funds could be pursued for advance mitigation too, especially for mitigation efforts paired with complementary activities in a wider partnership.**
4. **Financing tools will be equally important to pursuing advance mitigation. Various federal and state infrastructure financing tools are promising but untested sources of borrowed funds for mitigation investment.**

Key Finding #1: There is no single available external funding source that Caltrans can tap immediately and independently to fund a state-initiated advance mitigation program.

Few of the funding sources studied here provide an uncomplicated solution to paying well in advance for the anticipated legally required minimum mitigation needs of Caltrans. Such solutions may lie more expeditiously in internal restructuring efforts, such as the SHOPP Program, to reserve funds available through existing programs in order to support advance mitigation. A pool of reserved funds would enable Caltrans to make mitigation investments sooner, benefitting projects developed later. Such funds could also be reimbursed later, by individual projects, as they pay for mitigation activities in real time, and Caltrans could work internally to create this flexibility in its cash flow. Caltrans could also pursue dedication of existing revenue streams like motor fuel tax or vehicle registration fees for advance mitigation, or even a state bond measure. These are all transportation revenue and finance tools well known to the agency, and up to its leadership to pursue. Advance mitigation should be included as its own

⁵ California Legislative Information. SB-1077 Vehicles: road usage charge pilot program (2013-2014). http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140SB1077

expenditure item in any such revenue initiative that is pursued in the future. These kinds of solutions were beyond the scope of this study and are covered in Gliddon (2009).

Absent dedicated funds from new or enhanced traditional transportation revenue streams, there are few obvious sources of available funding that Caltrans could tap on its own to support advance mitigation. Instead, many of the existing sources of funding we identify would involve partnerships. Further, some sources have not yet been tested for advance mitigation applications. Others may prove useful for activities that lie beyond legally required mitigation but that may be essential components to more comprehensive advance mitigation partnerships, supported by Caltrans, other transportation agencies, local governments, and conservationists alike.

Key Finding #2: Partnerships between Caltrans and other agencies provide important opportunities for Caltrans to leverage potential funding sources and to make advance mitigation a reality.

The findings of earlier SAMFFS tasks and the current trajectory of California transportation policy strongly suggest that partnerships will be increasingly central to the future funding of advance mitigation of state transportation investments. In contrast with earlier decades, Caltrans today rarely undertakes new transportation capital investment programs entirely on its own. Over time, multi-agency and multi-jurisdictional projects are becoming the norm, even for rehabilitation and maintenance. Financing advance mitigation brings opportunities—and often legal requirements—for partnerships with resources and conservation agencies as well as other transportation agencies. Caltrans is more likely to achieve its advance mitigation goals by partnering with other agencies in pursuit of funding for particular projects and by tapping funds more closely associated with resources and conservation than with traditional core funding programs for transportation.

The importance of partnerships was explicitly noted by the California Strategic Growth Council when it approved in October, 2014, a resolution calling for “integrated regional planning” that effectively links regional development planning with regional conservation planning. The resolution specifically acknowledged that “This approach uses the combined assessment of regional development and conservation priorities to implement planning solutions that mitigate development impacts through the protection and stewardship of regional conservation priorities.”⁶

Among the most important reasons for partnering are:

- Through collaboration on a large, landscape level mitigation program, economies of scale in land acquisition can be achieved by pursuing larger scale mitigation than Caltrans would implement on its own for project-level mitigation. Economies of scale can be achieved whether Caltrans leads the partnership with others, as with Programmatic Mitigation under Section 7, or joins in a partnership led by other, as with a Habitat Conservation Plan (HCP) or with a Natural Community Conservation Plan (NCCP).
- Partnerships with other agencies and entities allow Caltrans to “leverage” whatever funding it can itself bring to the table. While acquisition and maintenance costs for an agency acting alone can prohibit an advance regional approach, joint funding through partnerships makes a larger number of advance mitigation projects financially feasible.

⁶ California Strategic Growth Council Meeting of October 6, 2014, Agenda Item 5, http://sgc.ca.gov/docs/Agenda_Item_5_Integrated_Regional_Planning_Resolution.pdf

- Other county, state, and federal organizations by law or precedent are directly eligible for sources of funding that could indirectly benefit advance mitigation of transportation projects. Caltrans may be ineligible for such funds itself or may not have experience applying for or using these sources, and could benefit from partnering with organizations that do.
- Caltrans is not well suited to permanently owning large tracts of land for purposes other than operating transportation services, nor is it ideal in principle that a state transportation agency perform habitat or land maintenance functions continuously or on a large scale.
- Other state agencies, and non-profit organizations like land trusts may have the legal responsibility and/or personnel to aid the recovery of listed species and their habitats, as well as annual budgets that provide for components of habitat maintenance and land management over long time periods.
- This study found that the majority of existing sources of funding limit support to the acquisition of land, and fewer sources are available to support ongoing maintenance of habitat and long-term management of land resources. Even fewer sources of funding were identified which support advance planning of habitat conservation programs, even though planning and public participation programs are necessary to the success of advance mitigation. Caltrans commitment of staff time and effort to planning and to long-term land management, especially in partnership with local authorities, can increase the probability of success in obtaining land acquisition grants from other agencies. Caltrans, the State Transportation Agency, and the Strategic Growth Council can contribute to future efforts which enable funding ongoing maintenance of land and advance planning of mitigation programs in addition to funding land acquisition.

Leveraging Funding through Multi-party Partnerships in Advance Mitigation

By partnering with other state agencies and/or local agencies and other entities to broaden a mitigation initiative, Caltrans can both achieve economies of scale to address its own mitigation needs and benefit from the non-Caltrans resources attracted to such an initiative.

To comply with the Endangered Species Act, for example, projects that do not incorporate federal funding must comply with Section 10 by completing a complete biological review of the impact of proposed projects. Projects that are federally funded, however, can employ a streamlined biological review by complying with Section 7, since it is understood that projects having a federal nexus will conduct thorough biological review to comply with NEPA. When Caltrans joins in partnership with other agencies, it often brings a federal nexus to the effort, creating the potential for a much simpler biological review under Section 7. This is because Caltrans projects often incorporate federal highway funding, because Caltrans has been designated the NEPA lead agency for federally-funded highway projects in California, and for these and other reasons Caltrans projects are often considered to have been “federalized” and therefore eligible for Section 7 reviews.

A second way that Caltrans might engage in partnerships to leverage funding to support advance mitigation is through Habitat Conservation Plans. Regional HCPs, described in greater depth in the Task 2 Report, are collaborations among public and private landowners and resource agencies to establish a permanent habitat reserve and perpetual land management program while accommodating urban development, including transportation infrastructure. Although HCPs also provide *other* benefits of interest to advance mitigation, HCPs are of interest in this study *principally because they can serve as a mechanism for leveraging funding* for advance mitigation from sources beyond Caltrans. HCPs draw on a variety of funding sources – from local development impact fees to conservation trust funds to contributions from infrastructure agencies. Thus, the expenditures Caltrans makes for mitigation

undertaken in the context of an HCP benefits from economies of scale resulting from the broader scale of mitigation – and potentially conservation – activities funded by these varied sources. Beyond this potential for leveraging funding, HCPs can provide many of the benefits that attend other forms of programmatic mitigation, such as Programmatic Biological Opinions. These benefits include streamlined environmental review and permitting, along with associated cost and time savings.

While HCPs are not appropriate for every Caltrans project, participation in HCPs can reduce the cost involved in individual project permitting, by enabling Caltrans not only to cooperate with but also to share a portion of the environmental clearance process with another entity. While Caltrans is unlikely to lead the development of an HCP, it can achieve advance mitigation through participation in a pre-existing HCP. In several California cases, county funds have been used by HCPs to assemble land for HCPs that have later been used as mitigation for Caltrans projects that are highly valued by local jurisdictions. Although created to comply with the Endangered Species Act, partnerships created through the formation of HCPs have proven useful in efforts to comply with other environmental mitigation requirements, such as those specified in Section 404 of the Clean Water Act. Partnerships also allow Caltrans to benefit from the economies of scale inherent in regional mitigation. Caltrans is able to contribute per project funding as it has always done for capital projects, though under these arrangements it often makes its contribution to a local entity that is providing the advance mitigation.

Caltrans should continue to develop more in-depth and formal partnerships with resource agencies explicitly to further advance mitigation.

Partnering with such agencies to explicitly seek funding for advance mitigation and complementary activities could increase Caltrans' access to conservation-oriented funding sources. A large portion of funding for conservation in California flows to resource agencies and regional conservancies. For example, the EPA recommends that Caltrans partner with the state wetlands protection program to leverage grants offered through state programs. Such partnerships can also result in more “programmatic” agreements that establish standardized procedures to streamline advanced mitigation and strengthen cooperation between DOTs and resource agencies.⁷

One example of such a partnership is an in-lieu fee (ILF) arrangements with state and federal wildlife agencies. ILFs allow the resource agency to manage creation, restoration and preservation of wetlands or endangered species habitat, using fees paid by the DOT in lieu of the transportation agency participating directly in the mitigation activity. This reduces both project costs and risks.⁸ One example of an ILF program is the partnership between the North Carolina Department of Transportation and the state Department of Environment and Natural Resources, which created a Stream & Wetland ILF program specifically tailored to the DOT.⁹

Caltrans currently partners to some degree with each state and federal agency related to the full range of biological and environmental laws. It also supports 35 liaison positions at various agencies to pursue its environmental and project delivery efforts. Current partners include CDFW, CCC, USFWS, NMFS, EPA, USACE, and others. Caltrans additionally conceived of and initiated the Statewide Advance Mitigation Initiative among all of these agencies. These established relationships are an asset,

⁷ <https://www.fhwa.dot.gov/everydaycounts/projects/toolkit/programatic.cfm>

⁸ <https://www.fhwa.dot.gov/everydaycounts/projects/toolkit/banking.cfm>

⁹ <http://portal.ncdenr.org/web/eep/in-lieu-fee-programs> North Carolina currently has four ILF programs sponsored by the North Carolina Department of Environment and Natural Resources under its “Ecosystem Enhancement Program. NCDOT is eligible to participate in the three other ILF programs.

providing an established foundation upon which to build more implementation-driven efforts to realize an advance mitigation pilot program.

Key Finding #3: New revenue sources will be needed to support advance mitigation in California. Where local option sales taxes are being considered, there is a particular opportunity to pair advance mitigation with new or renewed revenue measures for transportation investment. Additional sources of federal, state, and local funds could be pursued for advance mitigation too, especially for mitigation efforts paired with complementary activities in a wider partnership.

Revenue

In both the short and the long term, Caltrans must address the state's need to pursue new transportation revenue sources, as well as financing tools. By revenues, we mean finding funds that can be tapped today and in the future to realize the benefits of that financing.

The current shortage of revenue for transportation investments is frequently called a crisis; real returns from traditional sources of transportation revenue, especially motor fuel taxes, have been and are expected to continue falling precipitously. If advance mitigation is to become part of Caltrans programs, substantial amounts of revenue will be required that are predictable and reliable. Funding will be needed for large amounts of mitigation at landscape scale, and a continuing revenue stream will also be required for annual maintenance and continual improvement of mitigation. Until dedicated funds become available from new or enhanced traditional transportation revenue streams, there are few sources of available funding designated for support of advance mitigation. However, many existing sources of funding we identify have been largely untried for advance mitigation applications and explorations with several agencies revealed that advance mitigation is considered eligible for funding by the managers of those programs. Further, some of them may prove most useful for activities that lie beyond mitigation but that could be essential components of a larger, advance mitigation program with broad-based support from Caltrans, other transportation agencies, local governments, conservation groups, and the public.

In all likelihood, funding for land acquisition and longer-term operation and maintenance will be sought through partnerships in which Caltrans works with other public agencies and private institutions.

Local Option Sales Taxes (LOSTs)

Local option sales taxes (LOSTs) are extremely important since these measures now exist in a third of the counties in California and those counties are home to 85 percent of the state's residents. Local sales tax measures have typically funded improvement projects on the state highway system which is owned and operated by Caltrans. Close state-local cooperation is essential to aligning projects and priorities, as well as funding. Communication and coordination are needed before, during and after a sales tax measure is approved.¹⁰

Advance mitigation components recently have been incorporated into several local sales tax measures, to improve mitigation outcomes and expedite project delivery for transportation agencies. LOSTs are in the short run central to partnerships with Caltrans and are a promising avenue by which to accomplish advance project mitigation until funding is available through additional means. Of particular interest to Caltrans are the LOST-funded improvements made by local and regional transportation

¹⁰ Flynn, Chris. Supervising Environmental Planner, Environmental Programs. CalTrans, District 7 & 12. Teleconference on 16 Jul 2014.

agencies to the state highway system, which Caltrans owns and operates. Further, some measures have bonded against future revenues, enabling flexibility to time land acquisitions to favorable market conditions and to begin key transport projects sooner. Thus, to the extent that the state wishes to pursue advance mitigation, state-local partnerships in the context of tax measures are an important arena for leveraging local partnerships, especially those measures with advance mitigation funding.

County	Total Measure Budget	Advance Mitigation Budget	Advance Mitigation as % of Entire Measure	Restrictions
San Diego	\$14 B	\$850 M	6%	Allocates \$650 million for advance mitigation for 11 Major Transportation Corridor Improvement projects and \$200 million to mitigate local projects (street & roads).
Orange	\$11.6 B	\$243.5 M	2%	Allocates a minimum of 5% of the Freeway Program budget to mitigate for 13 freeway project impacts.
Sacramento	\$4.7 B	\$5 M	0.1%	Allocates a specified amount to mitigate impacts from the I-5/SR-99/SR-50 connector road.
Riverside	\$4.6 B	\$83 M	1.8%	Allocates 5% of the freeway program budget to mitigate cumulative and indirect impacts.

State Revenue Sources

Other state revenue sources, mainly but not exclusively in the form of project grants, are listed below, either as potential revenue sources themselves or as models for potential sources. These are addressed in the context of advance mitigation even though some of the programs listed provide explicitly for acquisition of land for the direct mitigation of specific public works projects rather than for regional or landscape-scale advance mitigation.

When landscape scale advance mitigation programs are in place, they enable applications for specific grants under these programs to be undertaken more quickly and efficiently than is the case where the applications for project-level mitigation activities must be initiated and negotiated among several agencies over an extended period of time.

Where larger-scale advance mitigation programs are in place, economies of scale can result from acquisitions of parcels that are part of a landscape-level plan, but are larger than required for mitigation of a specific project. Where they exceed the amount of land required to mitigate the impacts of a particular project, acquisitions may both provide additional mitigation for future projects and can result in lower per acre land cost than if smaller parcels are purchased as needed directly to mitigate the impacts of a single transportation improvement. Similarly, advance mitigation programs can provide endowments for long-term maintenance and operation of previously acquired habitat. Caltrans can benefit from the fact that particular grants may be sought under programs listed here to be used for the maintenance of mitigation lands both that serve legal obligations for specific transportation projects and that are included in larger regional mitigation plans. Put more simply, advance mitigation can be promoted by through partnerships involving the assembly of lands and/or the combination of funds acquired under specific individual grants.

- **California Environmental Enhancement and Mitigation Program (EEMP).** The program, managed by the Natural Resources Agency since the 2013 passage of SB 99, awards grants to local, state, and federal governmental agencies and nonprofit organizations and can fund environmental enhancement and mitigation directly or indirectly related to transportation projects. While highway landscaping and roadside recreation had formerly been among the activities eligible for EEMP grants, awards now support projects related only to urban forestry and resource lands. Caltrans mitigation efforts would not be eligible for such grants in *all* instances, but this source and its eligibility criteria deserve consideration case by case. The state's 2013-2014 budget allocates \$7 million to the EEMP.
- **Fisheries Restoration Grant Program (CDFW)**¹¹ This program (FRGP) was established in 1981 in response to rapidly declining populations of wild salmon and steelhead trout and deteriorating fish habitat in California. This program supports projects that improve waterways throughout coastal California. Contributing partners include federal and local governments, tribes, water districts, fisheries organizations, watershed restoration groups, the California Conservation Corps, AmeriCorps, and private landowners.
- **Various California voter-approved bond issuances, including:**
 - *Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (Proposition 84)*
 - *California Clean Water, Clean Air, Safe Neighborhood Parks, and Coastal Protection Act of 2002 (State Prop 40)*
- **Desert Renewable Energy Conservation Plan (SB 34).** This collaborative mitigation program for electricity infrastructure provides a model for future advance mitigation funding. California SB 34 provides for collection of fees in lieu of direct mitigation from energy project developers. It also authorizes the California Department of Fish and Wildlife to design and implement mitigation actions on behalf of the several contributing entities. While this bill does not explicitly provide funds for transportation projects, it is of interest to Caltrans because it is a model for one type of program Caltrans could pursue in the future, and of innovative partnerships between infrastructure projects and resource agencies.¹²
- **Cap-and-Trade** revenues from the auction of tradable greenhouse gas (GHG) emissions permits must be invested in support of greenhouse gas reductions, making potential use of the state-owned allowance proceeds to fund advance mitigation of transportation projects both somewhat promising and uncertain. Such efforts would benefit from close and continuing communication and coordination with ARB staff, to ensure that ARB's own legal requirements for Cap-and-Trade expenditures are understood and adequately addressed and to insure that the Caltrans perspective is represented in forthcoming discussions. There is reason to think that a case can be made for the expenditure of Cap-and-Trade revenues on advance mitigation where carbon reduction can be quantified.
 - Orange County's success in integrating advance mitigation of transportation projects with regional GHG reduction efforts under SB 375 suggests that some advance mitigation initiatives may facilitate GHG reduction.
 - The current Cap-and-Trade expenditure plan already funds some ecosystem restoration activities throughout the state.
 - Third, there is growing scientific interest in measuring the carbon benefits of land conservation and restoration activities.

¹¹ California Department of Fish and Wildlife. <https://www.dfg.ca.gov/fish/Administration/Grants/FRGP/>

¹² California Department of Fish and Game. SB 34 Advance Mitigation Land Acquisition Grants Program. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=36426>

Federal Revenue Sources

When local and state agencies form partnerships to develop transportation infrastructure projects collaboratively, it is likely that they will seek supportive federal funding. In many instances, we found that federal authorities regarded these programs to be available for advance mitigation, even though there had been very few applications submitted for some of the Federal programs we discuss. Thus, we include them with encouragement that Caltrans should presume that few precedents do not imply the programs are not open to them.

- **Transportation Investment Generating Economic Recovery (TIGER).** The U.S. Department of Transportation (USDOT) expanded its 2014 TIGER Grant program (TIGER VI) to include planning grants in addition to capital grants. Planning grants were only offered once before, under TIGER II (2010). TIGER Grants are awarded in stiff competition among many applicants – to date there have been 270 awards made in response to the receipt of over 5,300 applications. While the 2014 program explicitly prioritizes “ladders of opportunity,” which implies linkages between transportation and economic development, the 2014 program guidelines also state that the program would fund planning grants, and also highlight programmatic mitigation as an area of eligibility.¹³ Caltrans submitted two proposals that included advance mitigation to USDOT; neither proposal received an award (nor were any awards made to programmatic mitigation proposals). The competitiveness of future Caltrans proposals seeking TIGER funding for advance mitigation of transportation projects may be enhanced by discussing the potential for economic efficiencies and benefits from advance mitigation, as documented in the Task 3 report.

Funding for the 2015 TIGER Grant Program is proposed to be doubled to \$1.2 billion under current drafts of the GROW America Act, but it is unclear as of the writing of this report whether the bill will pass Congress, how much TIGER funding might be approved, or whether planning grants will remain eligible. Although there was an opportunity to fund advance mitigation planning through the 2014 TIGER Program, Caltrans experience with TIGER applications for advance mitigation suggests this program should be monitored as an uncertain but potential source of funding for advance mitigation.

- **Federal Environmental and Resources Agency Grant Funding.** Currently existing environmental and conservation grant programs at the state and federal levels, listed below, will not provide sufficient resources to enable Caltrans to establish an agency-wide advance mitigation program. The amounts that are available are small in relation to the needs of transportation programs and limited availability causes competition for these funds to be vigorous. Further, some sources limit whether or the extent to which they may be used to pay for legally required compensatory mitigation activities. However, these programs could provide partial funding for comprehensive or landscape scale advance mitigation programs that incorporate mitigation for eligible projects along with others. These programs are included because they may prove valuable sources of support for mitigation enhancements that could feature in any partnership-driven advance mitigation program, supporting larger conservation programs that include compensatory mitigation. We emphasize partnerships as central to our findings in part because of the availability of such funds. In the short term, we recommend that applications for such funds be pursued to complement the budgets of advance mitigation projects undertaken by partnerships between Caltrans and local governments. When funds are sought to “leverage” commitments already made by Caltrans and counties, the applications under these state and federal programs can often be made more competitive.

¹³ Assistant Secretary for Policy, US Department of Transportation, TIGER 2014: Plan Application Preparation Webinar. http://www.dot.gov/sites/dot.dev/files/docs/TIGER_2014_Planning_Webinar_FINAL.pdf

- Section 6 Grants (USFWS)
- North American Wetlands Conservation Act Grant Program (USFWS)
- National Coastal Wetlands Conservation Grant Program (USFWS)¹⁴
- Wetlands Program Development Grants¹⁵ (EPA)
- Land and Water Conservation Fund ¹⁶(Department of Interior)

The pursuit of funding from such sources in connection with transportation project mitigation may appear unusual, but it is not entirely without precedent. The application on behalf of the New York State Thruway Authority for loan funds from the national Clean Water State Revolving Fund (CWSRF) for activities related to the planned replacement of the Tappan Zee Bridge represents an instance of, albeit not an entirely appropriate model for, seeking federal environmental funds in connection with a major infrastructure improvement.¹⁷ New York State had sought a loan of \$510 million from the fund to support a package of 12 different construction, mitigation, and enhancement projects related to the bridge's replacement. EPA deemed only five of those projects, worth \$30 million, eligible for the funds: restoration of Gay's Point and Piermont Marshes, the installation of storm water management measures, and the creation of a net conservation benefit plan, including an Atlantic sturgeon outreach program. The projects are eligible for the CWSRF loan because they are not required because of bridge construction alone and are actions that would implement the existing Comprehensive Conservation and Management Plan (CCMP) for the New York-New Jersey Harbor Estuary. Loan requests for the remaining seven projects, including Removal of Existing Bridge (\$65 million), dredging for construction vessels (\$110 million), and armoring the Hudson River bottom (\$30 million), were rejected, as they "are intended to mitigate harms caused by major new construction within the estuary, and therefore, they do not implement the CCMP."¹⁸ This interesting recent case illustrates that existence of a complex advance mitigation program does increase the probability of funding its elements, though the rejected funding requests are also instructive and reinforce points made earlier about the unwillingness of federal agencies to use conservation grant and loan funds for direct mitigation of the impacts of infrastructure projects.

Key Finding #4: Financing tools will be equally important to pursuing advance mitigation. Various federal and state infrastructure financing tools are promising but untested sources of loans for mitigation investment.

Financing tools are central elements of strategies by which California will achieve advance mitigation. By financing, we mean borrowing against future revenues to meet the need for capital while appropriately protecting the citizens of the state from unreasonable risk. Of course, financial obligations will be created by the financing and these must be met by the funding.

Financial mechanisms seldom constitute new sources of revenue, and typically incur some costs. Credit and advances of funds on a substantial scale may be indispensable to the financing of advance mitigation, but loans must be repaid with interest.

¹⁴ Contact: Christy Kuczak ,Grant Management Specialist ,Phone 703-358-1748 christy_kuczak@fws.gov

¹⁵ United States Environmental Protection Agency, Wetlands Program Development Grants, http://water.epa.gov/grants_funding/wetlands/grantguidelines/index.cfm

¹⁶ California Department of Parks and Recreation, http://www.parks.ca.gov/?Page_id=21360

¹⁷ *New York Times*. <http://www.nytimes.com/2014/09/17/nyregion/epa-rejects-most-of-511-million-loan-for-tappan-zee-project.html>

¹⁸ United States Environmental Protection Agency, Letter to Commissioner Martens and Mr. Driscoll, September 16, 2014, http://www.streetsblog.org/wp-content/uploads/2014/09/2014_09_16_tappanzeeletter.pdf

California I-Bank

The State Infrastructure and Economic Development Bank (I-Bank) has an Infrastructure State Revolving Fund (ISRF),¹⁹ which provides direct low-cost loans for public infrastructure. It is authorized to make loans in 16 statutorily designated categories, including environmental mitigation measures and many transportation activities directly relevant to the work of Caltrans and its regional and local partners, including improvements to state and county highways and local streets.²⁰ Eligible applicants "... may be any subdivision of a local or state government, including departments, agencies, commissions, cities, counties, non-profit corporations formed on behalf of an applicant, special districts, assessment districts, and joint powers authorities within the state or any combination of these subdivisions,"²¹ which could emerge from partnerships between Caltrans and local bodies to facilitate advanced mitigation, or from Caltrans acting on its own initiative. No loans have been granted under this category, although according to interviews with staff members, none have been applied for, and advanced mitigation projects would be eligible.²²

Transportation Infrastructure Finance and Innovation Act (TIFIA)

The TIFIA program offers federal credit assistance to nationally and regionally significant surface transportation projects, allowing them to leverage other funds. The program is competitive, but flexible and applications that differ substantially from one another have been approved. Caltrans should consider including expenditures on advance mitigation in TIFIA applications where appropriate.

Although TIFIA has not yet supported advanced mitigation, doing so is clearly not prohibited by program rules. And, very importantly, amendments to TIFIA have been proposed by a California Senator that would explicitly make advanced mitigation an eligible expense under TIFIA. TIFIA may also facilitate advance mitigation by supporting other elements of projects that are subject to advanced mitigation requirements, thereby freeing state resources for those. Since prior projects funded under TIFIA have included the costs of project-specific environmental mitigation and since advance mitigation contributes to other stated goals of the TIFIA program, including economic development, Caltrans could approach TIFIA staff for discussions of the role of the TIFIA program in future advance mitigation project funding.

¹⁹ Puentes, Robert, and Jennifer Thompson. "Banking on Infrastructure: Enhancing State Revolving Funds for Transportation." (2012)

²⁰ The Brandeis Project. "California Infrastructure and Economic Development Bank."

<http://www.brandeisproject.org/alice/toolkits/I-Bank-Overview-01-21-09.pdf>. (1) city streets; (2) county highways; (3) drainage, water supply and flood control; (4) educational facilities; (5) environmental mitigation measures; (6) parks and recreational facilities; (7) port facilities; (8) power and communications; (9) public transit; (10) sewage collection and treatment; (11) solid waste collection and disposal; (12) water treatment and distribution; (13) defense conversion; (14) public safety facilities; (15) state highways; and (16) military infrastructure.

²¹ California Infrastructure and Economic Development Bank (IBank).

<http://www.ibank.ca.gov/res/docs/pdfs/ISRF%20Criteria%20Priorities%20and%20Guidelines%20-%20Adopted%2010-29-13.pdf>

²² Interview, 5.18.14 Diane Cummings.

Water Infrastructure Finance and Innovation Authority (WIFIA)

President Obama on June 10, 2014 signed into law the Water Resources Reform and Development Act (WRDA).²³ As of the date of this report, it is in the process of being implemented, and it would appear to incorporate several measures that establish and/or fund programs that might finance advance mitigation projects related to transportation, especially where they affect waterways and other water resources.

One section reauthorizes the previously existing wastewater state revolving loan fund program and expands the types of projects the SRF may fund. Another section of the bill establishes WIFIA, a program specifically designed to imitate the TIFIA program. Amounts appropriated for WIFIA financing assistance are allocated jointly to the Corps of Engineers and the EPA to loan to eligible projects. While the eligibility of transportation advance mitigation programs is not yet clearly delineated, the size of the program is substantial and thus is worth tracking. As stated above, landscape scale advance mitigation programs will most likely succeed as partnerships involving numerous state agencies and numerous funding sources, of which this could be an important one, yielding indirect benefits for transportation programs.

GARVEEs, GANs, and Private Activity Bonds

Under Federal transportation programs, it is possible to borrow money so that a state may proceed with a project in anticipation of the later receipt of federal funds for which the project is eligible. GARVEE (Grant Anticipation Revenue Vehicle) and Grant Anticipation Notes (GANs) consist of securities (debt instruments) issued when moneys are anticipated from expected Federal-aid grants to accelerate land acquisition and construction.

The contribution of a specific project to an advanced mitigation program is more likely eligible for GARVEE financing than is an advance mitigation program itself, though this is subject to amendment in new federal transportation legislation.²⁴ We suggest that a useful path to exploring their applicability to advance mitigation would be in collaboration with other states through the AASHTO Center of Excellence in Project Finance, the staff of which expressed interest in collaboration with respect to this possibility.²⁵ In a conversation specifically about advance mitigation, the current Director of the Center indicated interest in developing a formal position about this possibility because no current documents exist to promote the use of these funding mechanisms for advance mitigation though it is also not excluded by any legislation or program guidelines.

²³ This law was discussed earlier in the report on Task 2 when it was still being considered by Congress and some of the terms were revised prior to its enactment.

²⁴ Personal communication with Weijan Ni, Caltrans Office of Innovative Finance, July 7, 2014.

²⁵ AASHTO Center for Excellence in Project Finance. <http://www.transportation-finance.org/about/>

1. Introduction: Meeting Today's Needs While Addressing Tomorrow's

The mission of Caltrans is to “provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability.”²⁶ Sometimes in tension with one another, meeting the state's needs for improved mobility and preserving its environmental resources are both critical goals. To achieve a sustainable transportation system that enhances livability, steps to avoid and minimize any impacts are always paramount. Where impacts are unavoidable and require mitigation, undertaking mitigation in advance of projects and in ways that contribute to landscape-scale conservation programs is an important emerging strategy to further sustainable transportation improvements.

As conceived, even though empirical evidence is still being accumulated, regional landscape-scale advance mitigation saves money and time and is environmentally superior to piecemeal mitigation. The business case developed in Task 3 reflects this as do the goals for advance mitigation as stated in the *2012 Draft Statewide Framework for Regional Advance Mitigation Planning in California*. Many recommendations that reflect these goals directly affect financing and funding transportation projects and advanced mitigation of their impacts. These were carefully considered in preparing this report.

Growing acceptance of the view that advance mitigation is good policy is leading policymakers to focus on making it happen. This means that attention is needed to finding the financial means to make it happen, adapting and developing appropriate institutions, and removing legal and organizational barriers that block the capabilities of existing institutions.

This is the third report completed by the research team. The report of Task 2 provided a broad overview of advance mitigation in support of improved mobility in California, citing legislative and regulatory requirements and providing case examples of advance mitigation as it is unfolding over time in this state. The report of Task 3 provided a “business case” for advance mitigation by demonstrating benefits and costs associated with this approach in comparison with piecemeal or project-specific mitigation to comply with federal and state environmental requirements in association with transportation projects. This final report presents work done under Task 4, and it addresses the funding and financing of advance mitigation.

This work demonstrates that the state requires both new sources of revenue and creative methods of financing in order to accomplish advance mitigation on a substantial scale. That, in turn, will require partnerships between Caltrans and many other organizations, including local governments, state resources agencies, and federal funding and environmental regulatory agencies.

The findings and recommendations reported here are consistent with the recommendations of the *State Smart Transportation Initiative (SSTI) Assessment and Recommendations*, which calls for the Department to put a renewed emphasis on sustainability and maintenance of existing and planned infrastructure.²⁷ For example, the SSTI Report notes “one of Caltrans' most important tasks is to understand what sustainability means to a state DOT and to operationalize it in goals, measures, and actions.” Implementing advance mitigation is one way for the agency to do so. Further, the SSTI notes that Caltrans has been too isolated in the past, and suggests greater emphasis on partnerships, one of the major recommendations emerging from our research as well.

²⁶ California Department of Transportation. Mission and Vision. Retrieved 18 Jul 2014 from the Department's website: <http://www.caltrans.ca.gov/hq/paffairs/about/mission.htm>.

²⁷ California State Transportation Agency. SSTI Assessment and Recommendations. Retrieved 22 Jul 2014: www.calsta.ca.gov/res/docs/pdfs/2013/SSTI_Independent%20Caltrans%20Review%201.28.14.pdf.

Our key findings are that both new revenue sources and financing tools will be needed to support advance mitigation in California, and that partnerships between Caltrans and other agencies will be necessary to make advance mitigation a reality, regardless what revenue or financing strategies are employed. In the second chapter we make the case for partnerships and outline examples of partnerships in financing advance mitigation that have already occurred and others that are in formative stages in California, and comment on mechanisms by which other states have recently advanced the financing of advance mitigation. In the third chapter we address some of the most promising revenue sources and in the fourth we turn to existing and emerging financing tools. Where possible, the findings included in reports of the earlier tasks are referred to and not repeated.

Driving along a road is a useful metaphor for achieving a robust program for advance mitigation in California over the coming few decades. To safely reach an intended destination, a driver must have clearly in mind the ultimate destination and the route for arriving there. Meanwhile, the traveler must also focus on immediate surroundings like obstacles, road signs, and current traffic conditions. To pursue advance mitigation in California transportation finance, Caltrans similarly should focus on the need to take direct, near-term action consistent with existing programs, while keeping clearly focused on a longer term vision that can change and shape those programs over time to better fit the emerging context. Advance mitigation is today already being achieved by Caltrans through partnerships with several counties through Habitat Conservation Plans (HCPs) that are funded by Local Option Sales Taxes (LOSTs). Building upon that experience, the longer term vision or ultimate destination would likely include larger numbers of partnerships with other agencies and broader, statewide funding and finance programs, and surely these will require more substantial and stable sources of funding.

Methodology

This report is based on the premise that the essence of policymaking is resource allocation. Elected officials, the state legislature, and citizen task forces may offer advice and adopt policy statements related to the shaping of state policies, but these are most often implemented through the commitment of funds to specific initiatives.

To conduct Task 4 the research team carefully studied and elaborated upon the results of the previous tasks and incorporated the advice of the Technical Advisory Committee, including the TAC's careful review of a draft of this report. We reviewed many public documents and internal Caltrans reports regarding advance mitigation and revenue and finance of transportation programs and projects more generally. We conducted a great deal of research using descriptions of programs that are widely available on the internet, and complemented those by conducting dozens of telephone and in-person interviews of federal, state, and local officials. Promising methods to enhance revenue and prospects for new or creative approaches to finance were identified from the literature, by Caltrans staff, through interviews, and by identifying activity being undertaken in other states. It was especially important to review local programs developed by several counties and metropolitan planning organizations (MPOs) and to explore the many ways in which local agencies are building partnerships in order to achieve advance mitigation.

Because there is not yet a complete body of convincing data, at many points in this report, the judgment of the research team about directions for change complements the presentation of factual information when those uncertainties are addressed. For instance, even in the short term, it is not completely certain that advanced landscape-level regional mitigation will save money and time and result in an improved natural environment for Californians. Uncertainty grows as the potential for regulatory and legislative change over a long time period is incorporated into the discussion.

The Growing Centrality of Partnerships

The findings of earlier SAMFFS tasks and the current trajectory of California transportation policy strongly suggest that partnerships will be increasingly central to the future funding of advance mitigation of state transportation investments. For this reason, this report pays explicit attention to the role of partnerships between Caltrans and local agencies, state and federal resources agencies, and transportation organizations. In contrast with earlier decades, Caltrans today rarely undertakes new transportation capital investment programs entirely on its own. Over time, multi-agency and multi-jurisdictional projects are becoming the norm, even for rehabilitation and maintenance. State-MPO partnerships are increasingly common, reflecting the redirection of financial resources under SB 45. State-county partnerships also are increasingly common, as projects of statewide significance increasingly depend on LOSTs levied by self-help counties. Financing advance mitigation brings opportunities—and often legal requirements—for partnerships with resources and conservation agencies as well as other transportation agencies. Given their centrality, partnerships are addressed in Chapter 2 before revenue and financing are taken up in the following chapters.

Financing and New Revenue Sources are Both Important

This report addresses moving forward with advance mitigation both in current programs and in strategic future direction by Caltrans. Doing both requires balancing the state's need to address new revenue sources and financing tools. By revenues, we mean finding funds that can be tapped today and in the future to realize the benefits of that financing. By financing, we mean borrowing against future revenues to meet the need for capital while appropriately protecting the citizens of the state from unreasonable risk. Financial obligations will be created by the financing that must be met by the funding. Revenue sources are addressed in Chapter 3 and Financing tools are the subject of Chapter 4.

The current shortage of revenue for transportation investments is frequently called a crisis; real returns from traditional sources of transportation revenue, especially motor fuel taxes, have been and are expected to continue falling precipitously. Because steps to develop new revenue for transportation programs are important to the improvement of transportation programs in California generally, they are addressed in Chapter 3 before we turn to the financing of advance mitigation. Advance mitigation can to some extent be funded by the same sources of revenue as are other Caltrans programs like highway building and maintenance.

Because financing to leverage existing and future revenues is critical to the success of advance mitigation, and recognizing that specific finance mechanisms exist for advance mitigation that might not be appropriate for all transportation programs, this report addresses those after the general discussion of revenue needs and sources. Paying the direct costs of advance mitigation may be challenging, even though valuable long-term benefits may be realized by successful advance mitigation. Our investigations suggest that financing tools like Transportation Infrastructure Finance and Innovation Act (TIFIA) and State Infrastructure Bank (SIB) loans are extremely important and will be central elements of strategies by which California will achieve advance mitigation. Financial mechanisms like these, discussed in Chapter 4, seldom constitute new sources of revenue, although in several instances they have not yet been tested for application to an advance mitigation effort. Financial mechanisms also typically incur some costs. Credit and advances of funds on a substantial scale may be indispensable to the financing of advance mitigation, but loans must be repaid with interest.

The need for revenue, finance, and advance mitigation are felt most directly at the local level, and will also call upon state and federal sources. Further, local entities will be key partners in any Caltrans'

advance mitigation effort. For this reason, we organize the presentation of both revenue and finance starting with local programs and complement those with discussions of state and federal resources.

The next chapter explores in depth the roles of partnerships in advanced mitigation, acknowledging the reality that advance mitigation will have to compete for revenue with many other programs central to the mission of Caltrans. We believe Caltrans is more likely to achieve advance mitigation by partnering with other agencies in pursuit of funding for particular projects and by tapping funds more closely associated with resources and conservation than with traditional core funding programs for transportation.

2. An Increasing Role for Partnerships

“Alone we can do so little; together we can do so much.”

--Helen Keller

Advance mitigation is inherently best done through partnerships. This is true not only because of a general trend across the nation toward collaborative project funding and sponsorship, but also because of special considerations that arise in advance mitigation concerning regulatory compliance, land transactions, ownership, and management. Caltrans currently partners to some degree with state and federal agencies related to the full range of biological and environmental laws, and such relationships are a valuable foundation for building more implementation-driven efforts to realize advance mitigation. Partnerships between Caltrans and other entities and agencies can provide important opportunities for Caltrans to leverage potential funding sources to implement advance mitigation. Partnerships are both advisable and likely between Caltrans and state and federal resources agencies, private land trusts, and local agencies created through joint powers agreements to acquire and operate mitigation sites that meet the needs of multiple development and that reflect pre-determined conservation priorities. Furthermore, with local, regional, and other state entities likely to undertake expansions of transportation facilities, some involving major mitigation investments, it is also likely that Caltrans will find it increasingly beneficial to partner with them in the advance preservation and acquisition of mitigation lands. A prominent example is the California High Speed Rail Authority (HSRA), which will face advance mitigation opportunities and responsibilities similar to those of Caltrans.

Forms and Nature of Partnerships

The concept of a partnership in the context of advance mitigation is broad and difficult to define, yet very important. Caltrans today is engaged in many joint or collaborative activities which can be considered partnerships with counties, MPOs, other state agencies, other states, and federal agencies. The forms of these partnerships differ greatly and reflect a wide variety of legal and political conditions and circumstances relevant to the particular arrangement.

Formally, a partnership can result from a letter agreement or memorandum of understanding (MOU) or memorandum of agreement (MOA) among agencies which meet, confer, and agree to work together; or a more formal signed contractual agreement among agencies that assigns specific financial, land ownership, and governance or operating responsibilities to the signatories. One familiar example of a formal mechanism for partnership that we found in several advance mitigation programs is Joint Powers Agreements (JPAs) in which two or more government bodies agree “to create an agency or entity that is separate from the parties to the agreement and is responsible for the administration of the agreement” (California Government Code, Sections 6500 - 6536).²⁸ The Western Riverside County Multispecies Habitat Conservation Agency is a JPA, as are many local development agencies. For an agency to obtain a permit allowing capital investment projects under federal legislation such as the federal Endangered Species Act or the federal Clean Water Act, a permit must be granted by the relevant federal agency. Partnerships relevant to advance mitigation often relate to the issuance of such permits allowing specific projects to proceed. Sometimes Caltrans can be a permittee, but often a county or a JPA is the formal legal entity designated as the permittee, and Caltrans is a partner in the sense that its projects can proceed because of the permit, whether or not it is formally named as a partner in the agreement. Caltrans, for example, is named explicitly as a permittee, among others, in the San Joaquin, Western Riverside, and

²⁸ Legislative Counsel of California. California legislative information.
<http://www.leginfo.ca.gov/cgi-bin/displaycode?section=gov&group=06001-07000&file=6500-6536>

Coachella Valley MSHCPs, and its projects benefit though it is not named as a permittee in the Santa Clara County JPA.²⁹

The formation of partnerships among agencies is a time-consuming process because it requires a great deal of staff time and public participation. Arriving at a joint powers agreement or a similar contractual agreement among agencies can take many years and requires deep understanding of local conditions and project characteristics on the part of representatives of multiple agencies. The process is often contentious and politically charged and it depends for success upon dedicated leadership. And, while funding is limited even for the implementation of agreements through, for example, the acquisition of land, resources are even more limited for the support of planning processes and the development of agreements. There is growing recognition, however, that investment of staff time and energy in building a working partnership at the early stages can save time and money later. The importance of partnerships was explicitly noted by the California Strategic Growth Council when it approved in October, 2014, a resolution calling for “integrated regional planning” that effectively links regional development planning with regional conservation planning.³⁰

In our discussion of partnerships, we focus on Caltrans participation in regional Habitat Conservation Plans (HCP) as one—but not the only³¹—important form of collaboration in which Caltrans is already engaged in several parts of the state. The HCP examples we present are useful as models as advance mitigation is considered more broadly, and HCPs are reasonably well developed. Many were described more fully in Task 2 Report, with a focus on the mechanics of the interaction between Caltrans and the HCPs to highlight successful partnerships. Here, we attend to the financial dimensions of these partnerships between State DOTs and regional HCPs that allow both parties to benefit. In addition, we survey several ways that Caltrans can partner with HCPs in order to provide guidance towards an institutional policy to leverage these partnerships. We also highlight the potential for partnerships with state resource agencies and regional conservancies, the entities through which the majority of state conservation funding in California flows. Through such partnerships, Caltrans could pursue access to existing and future grant funding; the dedication of funds for advance mitigation in any future state propositions funding either transportation or conservation initiatives; as well as programmatic agreements establishing procedures to streamline advanced mitigation and strengthen cooperation with resource agencies.

Why Partnerships?

There are several reasons that the future of advanced mitigation should be undertaken through partnerships, with the form of particular agreements responding to local conditions and a variety of

²⁹ Jaimee Lederman and Martin Wachs. Transportation and Habitat Conservation Plans: Improving Planning and Project Delivery While Preserving Species, University of California Transportation Center, April 2014, p. 107.
<http://www.uctc.net/research/papers/UCTC-FR-2014-04.pdf>

³⁰ California Strategic Growth Council Meeting of October 6, 2014, Agenda Item 5,
http://sgc.ca.gov/docs/Agenda_Item_5_Integrated_Regional_Planning_Resolution.pdf

³¹ For instance, Caltrans may also pursue partnerships by attracting other non-federal entities to participate in Caltrans-led programmatic mitigation initiatives (e.g. Programmatic Biological Opinions that expedite Section 7 analysis under the ESA). Because Caltrans projects are typically “federalized,” Caltrans can pursue these forms of streamlined environmental review and permitting when it mitigates project impacts. The “federalized” status of Caltrans projects stems from the agency’s assignment as NEPA lead and from the fact that, for most of its projects, at least some costs are supported by federal transportation dollars. Caltrans’ eligibility for these forms of programmatic mitigation can be attractive to other entities, such as the state Department of Water Resources, that are not “federalized” and hence not directly eligible themselves but that wish to benefit from the expedited environmental review they allow. By attracting partner entities into a programmatic mitigation plan that it leads and by pooling its funding with partner entities, Caltrans could realize some economies of scale in its own mitigation expenditures.

federal and state laws and program rules. Overall, creative solutions can be found through partnerships. For instance, advance mitigation administrators may work closely with local park districts, county parks, state parks, land trusts and other entities that may become short-term or permanent owners of mitigation lands. Further, where partnerships existed before land is acquired, it may be easier to secure a future owner. Working with Caltrans, the future owner could be negotiated and secured through an advance mitigation process prior to the acquisition of the land. Among the most important reasons for partnering are:

- It is unlikely that any new or enhanced revenue source will be funded explicitly to support a Caltrans advance mitigation initiative focused on legally required mitigation under NEPA/CEQA/CWA/ESA/CESA permits.
- Through collaboration, economies of scale can be achieved by pursuing projects of much large scale than Caltrans would implement on its own, even if some of these project exceed legal mitigation requirements.
- Caltrans is not well suited to permanently owning large tracts of land for purposes other than operating transportation services, nor is it ideal in principle that a state transportation agency perform habitat or land maintenance functions continuously or on a large scale except on transportation facility rights-of-way. While it can prove convenient that a transportation agency acquire or restore land via advance mitigation, it is not in the long-term interest of Caltrans to become a land management agency;
- Other local, state, and federal agencies and non-profits like land trusts have more skilled personnel and annual budgets that provide for habitat maintenance and land management over long time periods;
- Other county, state, and federal organizations by law or precedent are directly eligible for sources of funding that could indirectly benefit advance mitigation of transportation projects. Caltrans is itself ineligible for some of these funds and may not have experience applying for or using these sources, and could benefit from partnering with organizations that do.

Habitat Conservation Plans: A Precedent for Future Partnerships in Advance Mitigation

Caltrans is already party to several successful operating partnerships and additional emerging partnerships that aim to facilitate advanced mitigation in the state. In many cases these exist as Habitat Conservation Plans (HCPs) developed under the Endangered Species Act (ESA). Where Federal Funds and requirements of the ESA are not applicable, similar partnerships have been developed as Natural Community Conservation Plans (NCCPs) under state law. Where the ESA does apply, one organization can be both an NCCP under state law and an HCP in reflection of the requirements of federal law. Some of these are partly funded by local option sales taxes, funding mechanisms discussed in greater detail later in the report. While HCPs are not appropriate for every Caltrans project, participation where it is possible helps to achieve advance mitigation. Such participation has already allowed Caltrans to achieve economies of scale for mitigation, by spreading mitigation costs across all development in the plan area, improving administrative efficiency and enabling landscape-scale mitigation.

Regional HCPs, described in greater depth in the Task 2 report, are collaborations among public and private landowners and resource agencies to establish a permanent habitat reserve and perpetual land management program while accommodating urban development, including transportation infrastructure. HCPs are formed to meet permitting requirements under Section 10 of the Endangered Species Act, and often double as NCCPs to meet California state requirements. Regional HCPs seek to negotiate with USFWS suitable advance mitigation for future development activities in the region, often for 30 years but in some cases longer. Once the HCP is approved, USFWS issues an Incidental Take Permit (ITP) to

participating entities, granting them permission to proceed with project activities and the mitigation as prescribed by the HCP.

As evidenced by the examples below, such partnerships can reduce the time and cost involved in individual project permitting, by enabling Caltrans not only to cooperate with but also to share a portion of the environmental clearance process with another entity. Partnerships also allow Caltrans to benefit by the economies of scale inherent in regional mitigation. Caltrans is able to contribute per project funding as it has always done for capital projects, though under these arrangements it often makes its contribution to a local entity that is providing the advance mitigation.

In the cases presented we observe that, to gain the benefits of advance mitigation, Caltrans has engaged proactively and early with local entities in cooperative advance mitigation planning. Yet we also observe that Caltrans has often chosen to play a supporting role rather than to be the lead agency in the partnership.

While the cases reported below illustrate benefits from partnering, they mostly arose from initiatives undertaken by individuals deeply committed to making them happen in their particular communities. We recommend that Caltrans develop a systematic approach to building partnerships with local stakeholders early in the advance mitigation process to avail themselves of the advantages of these programs (Lederman and Wachs 2014). Regional Habitat Conservation Plans (HCPs) under Section 10 of the Endangered Species Act are important examples of operating partnerships, and their establishment presents opportunities for Caltrans to further leverage involvement with County-led initiatives to achieve advance mitigation.

Caltrans Partnerships with and Specific Roles in HCPs

To date, Caltrans has participated in and achieved advance mitigation through several regional HCPs, including the Western Riverside Multiple Species Habitat Conservation Plan and the Coachella Valley Multiple Species Habitat Conservation Plan, all of which are also NCCPs. Southern California also has the San Diego County HCPs for which transportation mitigation funding from a LOST contributes a large portion of transportation advance mitigation funding, and an HCP that is still under development is being undertaken by the Orange County Transportation Authority (OCTA) relying on funding from a portion of a county-wide transportation sales tax revenues that are dedicated to it. The synergy between regional HCPs and county-wide transportation sales tax measures demonstrates the strength of local initiatives and sources of funding throughout California, especially in Southern California, and provides further support for the strategy of leveraging local partnerships to achieve advanced mitigation. While there has been less direct Caltrans participation in the established HCPs in Northern California, Caltrans projects there are receiving benefits from inclusion in regional HCPs. (California Department of Transportation, 2012). And, since these are also NCCPs, the California Department of Fish and Wildlife (CDFW), formerly the California Department of Fish and Game, has also been a party to many of these partnerships.

Establishing regional HCPs requires an intensive collaborative planning process among local governments, state resources agencies, infrastructure agencies, the private development community and other interested stakeholders, and in some instances this process has taken as long as a decade. USFWS staff members urge the early involvement of transportation planning agencies in HCP development to enable an expedited permitting process in the future. Early collaboration has been shown to save time and resources in the longer run.

Transportation agencies regularly contribute to HCP funding as partners in the creation of an HCP, in order to benefit from streamlined permitting, regulatory certainty, and mitigation economies of scale that flow from the inclusion of transportation projects in the plan. There is no standard method by which transportation agencies contribute to HCP funding. These contributions depend upon numerous factors, including the number and type of transportation projects covered by the HCP, whether the agency is chartered by the state or is local, whether there is a local transportation sales tax, and upon the relationship between the relevant transportation agencies and the HCP governing entity. The cases detailed below highlight the financial dimensions of these partnerships between State DOTs and regional HCPs that allow both parties to benefit.

Because of the variation among HCPs and the political environments in the areas they cover, there are also many ways in which transportation agencies and projects have been incorporated into HCPs. According to one representative of FWS, each HCP approaches integrating transportation planning uniquely because “they have different tools in their toolbox.” Thus while it is generally recommended that Caltrans leverage partnerships with local HCPs, the specifics of the partnerships will depend on Caltrans’ needs in that area and the HCP structure, and this variety of arrangements is another good reason that Caltrans should begin involvement in HCP planning as early as possible.

When a State DOT’s projects are not subject to review under Section 7 of the ESA, which affords more streamlined biological review, the DOT sometimes is included as a permittee in larger plans having multiple permittees, including county and local governments and other utility and infrastructure agencies. Examples of this structure can be found in the case studies later in this section. Another example is the Nevada Department of Transportation, which is a permittee under the Clark County MSHCP, permitted in September 2000.³²

The ability of Caltrans to serve as a permittee is not fundamentally changed but its roles are influenced by Caltrans receiving NEPA assignment, the authority to replace the US Department of Transportation as the NEPA approval agency. California was the only state granted that authority under SAFETEA-LU in 2007, and it was continued under MAP-21 (P.L. 112-141) which went into effect in October of 2012.

When the state DOT is not a permittee, municipalities often still have an interest in mitigation of state DOT projects located in the HCP area. Many HCPs cover planned transportation projects even without extensive DOT participation in the planning process. These projects use the HCP biological findings and mitigation strategy for their own project permitting, streamlining the process and gaining from economies of scale. According to an HCP representative, the Santa Clara HCP explicitly included Caltrans projects in its list of covered activities without Caltrans involvement but with the understanding that Caltrans mitigation activities will follow the HCP guidelines to the benefit of both Caltrans and the local community. Caltrans also actively participates in the San Diego area HCPs under the EMP although it is not a permittee, attending monthly meetings on environmental mitigation held by SANDAG and working closely with HCP managers. The HCPs include planned Caltrans projects throughout the life of the plan, and Caltrans works with the HCPs on a project-by-project basis to identify current priorities, with the HCP funding and managing the acquisition of land for advance mitigation according to the plan. Both parties see the benefit of working together, and have been able to expedite projects both by facilitating environmental review and leveraging funding available through the HCP. Caltrans must contribute to the mitigation of its own projects taking advantage of cost savings and economies of scale that are the result of the larger HCP and from the acquisition of land for mitigation well in advance of the construction of its projects.

³² Jaimee Lederman and Martin Wachs. (2014) Transportation and Habitat Conservation Plans.

In our research we also found examples where Caltrans had been reluctant to partner with HCPs, although they have developed a better working relationship while implementing the plan after the ITP was granted. In East Contra Costa, Caltrans declined to participate, but applicants anticipated local Caltrans projects and included them in the plan. The HCP negotiated with FWS that, even without Caltrans participation, FWS would not require any additional mitigation beyond the HCP requirements. Further, the San Joaquin MSHCP began its negotiations with Caltrans as a potential permittee, but Caltrans later dropped out when it felt that there wasn't sufficient emphasis on transportation projects to make the HCP planning beneficial compared to standard project-by-project permitting.³³ Particularly in light of such advance mitigation partnering opportunities, we support the recommendation of the State Smart Transportation Initiative that Caltrans be attentive to "communications with local stakeholders [that] are genuine and two-way."³⁴

Case Study: Western Riverside Multiple Species HCP

The Western Riverside MSHCP has leveraged various sources of transportation funding and participation to implement the HCP, which in turn facilitates transportation projects in the area. Caltrans was an active participant in the planning process and is a named permittee on the ITP. It contributes directly to the acquisition, monitoring, and management of mitigation land for its planned projects covered by the permit while the HCP assembles the mitigation land. The plan requires a total of 500,000 acres for mitigation, but a large portion was already in public ownership, leaving 153,000 acres to be acquired to complete the MSHCP reserve. Of the 153,000 acres, federal and state agencies are obligated to fund the acquisition of about 56,000 acres. As described in Task 2, the cost of land needed to complete the reserve was estimated to be \$4.2 billion. At the time the MSHCP was adopted planners anticipated that transportation projects would contribute be \$371 million (in nominal dollars) to mitigation over the plan's first 25 years.³⁵

- \$64 million in local Transportation Uniform Mitigation Fees, a pre-existing fee on new development in western Riverside County, and uses the funds to provide infrastructure improvements to accommodate the new development.
- \$121 million from local transportation projects funded by Measure A (a Regional Conservation Authority resolution stipulates a 5% contribution of construction costs for local roads covered by the MSHCP); and
- \$186 million from non-Measure A and non-TUMF transportation projects, including Caltrans.

During the first eight years of the plan, Caltrans was to acquire approximately 3,000 acres of land suitable to mitigate planned transportation projects for \$36 million. Land acquisition, though taking place very much behind schedule, is still considered a commitment. Caltrans' challenges meeting the acquisition commitments underscore the conclusion drawn in this report that no single

³³ San Joaquin has recently seen more involvement from Caltrans, a result attributed by an interviewee to multiple factors. First, a change in state leadership has increased the presence of environmental programs within Caltrans in the years since the beginning of the plan, and second, there is growing familiarity with the model. After struggling with FWS on the biological outcomes of a particular project, Caltrans brought the project under the plan and was able to get approval after only 90 days. Caltrans realized it could benefit both from the certainty the plan provided and from the HCP taking responsibility for fulfilling many more environmental obligations, including the acquisition and monitoring of mitigation land.

³⁴ The California Department of Transportation SSTI Assessment and Recommendations, State Smart Transportation Initiative, January 2014, Executive Summary.

³⁵ Non transportation funding including Local Development Mitigation Fees on new development, tipping fees from local landfills, fees from non-transportation infrastructure. The HCP also facilitates access to other state and federal conservation grants.

approach is sufficient to implement advance mitigation, and also highlight the importance of new revenue sources to support advance mitigation. Caltrans also agreed to either provide the salaries for three positions for management and monitoring of conservation reserve lands, or fund an endowment supporting monitoring and management. Caltrans funds to meet these obligations came from the State Transportation Improvement Program. (Riverside County Transportation Land Management Agency, 2003, Section 8.4.4). This commitment of funding recognizes that Caltrans will ultimately benefit from sharing in the costs of land acquisition, biological surveys and management of the HCP lands all in advance of the construction of Caltrans facilities that would otherwise require specific mitigation later. The exact amount of cost savings to the agency are difficult to calculate because the exact timing of the Caltrans projects has not been determined, but by carrying out these functions in advance in partnership with other agencies, the anticipated savings are considerable.

Case Study: Coachella Valley Multiple Species HCP

The HCP was planned collaboratively to be funded from a combination of a local development impact fees, a conservation trust fund, and contributions from infrastructure agencies (including Caltrans). The total cost of the HCP over its 75-year permit will be over \$2 billion.

Under what is labeled fair share policies, by contributing funds toward the purchase of land in advance of the construction of transportation projects, Caltrans is credited with having purchased acres of land in proportion to its contributions. Since land is expected in the future to cost more than its current purchase price, these purchases constitute advance mitigation. In addition, savings that accrue from purchasing land early can be applied to credits toward meeting Caltrans' obligations to contribute to the ongoing costs of land management.

Caltrans is a permittee under the Coachella Valley MSHCP and pledged both funding and land contribution to cover the mitigation required for its planned projects in the region. Caltrans is to acquire 1,795 acres to mitigate the interchange and associated arterial projects, and contributed \$1,077,000 to the endowment for the Monitoring Program, Management Program, and Adaptive Management of those lands. (CVAG, 2007). When Caltrans was slow to meet these commitments, to move the project forward, CVAG contributed local money for both the project and the required mitigation. For additional regional projects Caltrans is obligated to acquire 5,791 acres of land to mitigate its non-interchange projects. Caltrans must also contribute \$7,600,000 towards the Endowment Fund for monitoring and management of the mitigation land. Caltrans proposes contributing \$1.5 million to this effort through the 2018 State Highway Operation and Protection Program (SHOPP). Regional transportation projects are funded through the county transportation sales tax measure (Measure A), of which \$30 million will be contributed to plan implementation to help accomplish the permittees' mitigation.

Since 1996, for example, the HCP reports that Caltrans has been authorized to disturb 40 acres of sensitive habitat in order to construct an interchange between Highway 111 and Interstate 10 by taking mitigation credit for protection of 52 acres that were acquired and are managed by the HCP.³⁶

³⁶ Coachella Valley Multispecies Habitat Conservation Plan/Natural Community Conservation Plan, 2013 Annual Report, Table 3, p. 4. http://www.cvmshcp.org/doc/2013%20Annual%20Report_2014_0610.pdf

Case Study: East Contra Costa County HCP

Although Caltrans was not part of the planning process, it was later able to gain the benefits of HCP coverage by paying an additional fee beyond the per-acre development fee enumerated in the plan. Through this plan option, a “special participating entity” may participate in the plan even if they had not been involved in the original planning process (East Contra Costa County Habitat Conservation Plan Association, 2006, Sec. 8.4). According to a Plan representative, during the recent economic downturn, development fees have contributed little to the land acquisition fund, and the HCP has relied both on grant funding and fees from participating infrastructure development agencies, such as Caltrans, to acquire land at twice their goal pace.

Case Study: Butte County HCP

Caltrans presently is participating in planning the Butte County HCP, actively under development. According to an HCP representative, the HCP relied upon a grant from Caltrans Regional Blueprint program. The timing of the funds allowed Butte County to gather biological data and establish environmental baseline information to be used in HCP planning before local general plans were updated. Caltrans had upcoming projects in the area that would benefit from the plan’s coverage, including improvements to SR 99 and SR 149. Whether Caltrans will be a formal permittee or participate in another way has yet to be determined.

Resource Agency Partnerships

As stated above, one of the major themes that emerged from our research is the value of partnerships, and we presented at some length the value of HCPs as a prototype of a partnership in advance mitigation. Partnerships with local players, such as governments, transportation agencies, and HCPs, will allow Caltrans to leverage local funding and managements of mitigation and increase returns on existing revenue streams. Caltrans should also consider more in-depth and formal partnerships with resource agencies.

In our research into possible funding sources for advanced mitigation, discussed fully in Chapter 3 of this report, we found that the majority of state level funding for conservation in California flows to state resource agencies and regional conservancies.³⁷ Our review of state grant programs (largely funded

³⁷ For example, while Caltrans currently receives 13% of state DMV fees, the DMV also offers an environmental Special License Plate for \$49, with revenues of \$43 million in 2011 per year. Aside from operations, these funds are dedicated various environmental agencies. See:

California Department of Motor Vehicles. http://apps.dmv.ca.gov/pubs/brochures/fast_facts/ffvr34.pdf

California Department of Finance.

http://www.dof.ca.gov/accounting/manual_of_state_funds/index/documents/0140.pdf

California Environmental License Plate Fund.

http://www.ecoplates.com/docs/Environmental_License_Plate_fund_description.pdf

by state bond propositions) also found that most funding was dedicated to state resource agencies and conservancies, who administer grants. Caltrans may already qualify for grants that could support advance mitigation efforts, either in the present or as a result of future grant programs. At the same time, we also recommend that Caltrans pursue dedicated funds for advance mitigation in future state propositions that would fund either transportation or conservation initiatives. The pursuit of such funds could be undertaken by Caltrans in partnership with resource agencies and regional conservancies. For example, the regional office of the EPA recommends that Caltrans partner with the state wetlands protection program to streamline mitigation and to leverage grants offered through state programs.

The benefits of partnerships with resource agencies are not only limited to access to specific project grants. Such partnerships can also result in more “programmatically” agreements that establish standardized procedures to streamline advanced mitigation and strengthen cooperation between DOTs and resource agencies.³⁸ One mechanism adopted by other state DOTs is in-lieu fee (ILF) arrangements with state and federal wildlife agencies, which allow the resource agency to manage creation, restoration, and preservation of wetlands or endangered species habitat, using fees paid by the DOT in lieu of the transportation agency participating directly in the mitigation activity. ILF programs establish a similar agreement to a mitigation bank agreement, with state DOTs relieved of any further mitigation responsibility when they pay fees to an ILF program. ILF sponsors bear the responsibility of ensuring that that mitigation credits will be available when needed. This reduces both project costs and risks.³⁹ The FHWA advocates ILF programs under its “Every Day Counts Initiative,” stating that banks and ILF programs should become “standard operating procedure for mitigation requirements under the Clean Water Act and Endangered Species Act.”⁴⁰

ILF fee programs also have flexibility to be tailored to the needs of the agency seeking mitigation credit via partnership with the sponsor (typically but not always a resource agency). For example, some of the environmental impacts of transportation projects are experienced prior to the opening of the projects to traffic. In some cases, the ILF program implements the project in a watershed as funding for mitigation is received as a result of a preexisting agreement with the entity managing the site. Unlike banks, ILF agreements may also provide flexibility to perform environmental enhancement activities throughout a watershed rather than at one particular site.⁴¹

An example of an ILF program is the partnership between the North Carolina Department of Transportation and the state Department of Environment and Natural Resources, which created a Stream & Wetland ILF program, under the Ecosystem Enhancement Program (EEP), specifically tailored to the DOT.⁴² The Florida DOT has also recently established a similarly structured program.⁴³ EEP's nationally recognized NCDOT Stream & Wetland ILF fee program provides off-site compensatory wetland and stream mitigation for the N.C. Department of Transportation in advance of permitted impacts. Each year,

³⁸ Federal Highway Administration (FHWA).

<https://www.fhwa.dot.gov/everydaycounts/projects/toolkit/programatic.cfm>

³⁹ FHWA. <https://www.fhwa.dot.gov/everydaycounts/projects/toolkit/banking.cfm>

⁴⁰ FHWA. <https://www.fhwa.dot.gov/everydaycounts/projects/toolkit/banking.cfm>. According to the FHWA, “Some states have never used mitigation banks or ILF programs, while others use banks or ILF programs for the majority of their mitigation needs. Currently 33 states use mitigation banks. Conservation banks are harder to track, but at least 11 States have them. 20 states use ILF programs.”

⁴¹ FHWA. <https://www.fhwa.dot.gov/everydaycounts/projects/toolkit/banking.cfm>

⁴² N.C. Department of Environment and Natural Resources. <http://portal.ncdenr.org/web/eep/in-lieu-fee-programs>. North Carolina currently has four ILF programs sponsored by the North Carolina Department of Environment and Natural Resources under its “Ecosystem Enhancement Program. NCDOT is eligible to participate in the three other ILF programs.

⁴³ This program is described in the Statewide Advance Mitigation Funding and Financial Strategies Task 2 Report: *Setting the Stage for Statewide Advance Mitigation in California*.

NCDOT provides EEP an updated list of planned NCDOT transportation projects that are scheduled to go to construction over the next seven years, along with each project's estimated wetland and stream mitigation needs.

EEP continuously updates its planning to produce the necessary mitigation (i.e., land acquisition, and mitigation site design, construction, planting, and monitoring) to meet NCDOT's future mitigation needs in advance of impacts. Since its establishment in 2003, the program has allowed NCDOT to move forward nearly \$14 billion in transportation projects reportedly without a single delay resulting from a lack of mitigation permits. The program operates on a cash-flow basis, whereby EEP invoices NCDOT quarterly and secures funds required to cover anticipated operating costs for the upcoming quarter. Each quarter, NCDOT pays EEP the actual mitigation production costs using funds from the budgets of the projects being mitigated.

Conclusion

This chapter urges Caltrans to undertake partnerships to achieve advance mitigation goals. HCPs are created specifically to comply with requirements of the Endangered Species Act, and they have been presented here as case studies because they are perhaps the most sophisticated form of advance mitigation partnerships that we encountered already underway in California. In the future, in addition to the creation of additional HCPs, similar arrangements could broaden advance mitigation beyond concerns related to the preservation of endangered species. The foregoing cases do illustrate, however, that vigorous Caltrans participation in such partnerships is a major element of the development of a plan for financing advance mitigation in support of the streamlining of transportation infrastructure development in California. This chapter also calls attention to the potential for partnerships with state resource agencies and regional conservancies, to access existing and future grant funding; to encourage dedication of funds for advance mitigation in any future state transportation- or conservation-related bond propositions; as well as to develop programmatic agreements to streamline advance mitigation.

3. Promising Sources of Revenue to Support Advance Mitigation

Local Option Sales Tax (LOST) Measures If advance mitigation is to become part of the mainstream of California policy and Caltrans programs, substantial amounts of revenue will be required that are predictable and reliable. Funding will be needed for large amounts of land acquisition at landscape scale, and a continuing revenue stream will also be required for annual maintenance and continual improvement of mitigation lands. In all likelihood, funding for land acquisition and longer-term operation and maintenance will be sought through partnerships in which Caltrans works with other public agencies and private institutions.

The next two chapters enumerate new revenue sources and mechanisms for financing partnerships that are critical to the future success of advance mitigation. The research team approached this task considering both funding sources and financing mechanisms that, when taken alone, would be sufficient to facilitate advanced mitigation. After careful research, our review of funding and financing options further underscored the importance of partnerships to any environmental effort Caltrans may undertake. Funding and financing were ultimately assessed in consideration of the increasing likelihood that Caltrans will be a major player in their development; however, because of partnerships like those addressed in the previous chapter, Caltrans is unlikely to be their sole or principal manager or operator.

In this chapter, we present potential new revenue sources that could support advance mitigation, directly and indirectly. In some cases these could be used directly to acquire land and to fund maintenance activities. In other cases, these revenue sources can contribute to larger packages of funding that would match or expand direct agency expenditures and thereby enable landscape-scale mitigation planning. In the following chapter we discuss financing program options, recognizing that their employment in the planning of particular advance mitigation projects will in most instances also require new or enhanced revenue streams. While it is ultimately, likely that some potential new revenue sources most logically would be paired with particular financing programs, we discuss these separately to highlight the potential contributions of each to advance mitigation. In the discussions that follow, new revenue sources and financing programs can be thought of as relatively independent of each other as well as potentially susceptible to “mixing and matching,” reflecting the evolving nature of federal, state, and local programs and the political environments within which their application to advance mitigation will be pursued.

In this chapter and the next, we have employed the metaphor presented in Chapter 1 of traveling down a highway, which requires the driver to have a grasp of immediate, local surroundings while keeping clearly in mind the final destination which is farther down the road. We examined shorter-term more immediate sources of financial support for advance mitigation and also considered longer-term and more speculative possibilities that we reason are worth pursuing. Because funding possibilities are unlimited in number when considered in the abstract, and because Caltrans has already reviewed many transportation revenue possibilities in other studies and in many contexts,⁴⁴ we limited our review to the revenue sources we considered to be most realistic and relevant to advance mitigation. We organize the presentation starting with the most local sources of revenue, which also are likely to be the most implementable in the short term. In subsequent chapter sections, we identify state and later federal options. A given project will in all likelihood be financed by multiple sources of revenue, and the combination used by each partnership will likely be unique to its particular circumstances.

⁴⁴ Caltrans Division of Budgets, *Potential Revenue Options for California*, December 14, 2009.

Revenue Options for Local Governments

In the current strained fiscal climate in California, one funding mechanism, local option sales taxes (LOSTs) is extremely important since these measures now exist in a third of the counties. Local sales tax measures have typically funded improvement projects on the state highway system which is owned and operated by Caltrans. Close state-local cooperation is essential to aligning projects and priorities, as well as funding, needing communication and coordination before, during, and after a sales tax measure is approved.⁴⁵

LOSTs are today one of the most significant mechanisms by which local governments participate in large-scale habitat conservation programs and are likely to remain so for some time to come. Although most counties do not include an advance mitigation feature in their local option tax plans, the inclusion of these is gradually increasing. Some counties may include advance mitigation in current local sales tax programs by amendment without voter approval, but advance mitigation will likely be more often included in new sales tax measures or in renewals, often called “reauthorizations” of sales taxes in advance of their current expiration dates. In the short run, LOSTs are central to the partnerships through which Caltrans can pursue advance mitigation, and should be understood as a central force in habitat conservation over the coming few years.

LOSTs are enacted by ballot measures and bring in revenue generally over a set time period following a specified expenditure plan to fund identified infrastructure projects including freeway upgrades, transit and rail projects, and improvements to local streets and roads. Of particular interest to Caltrans are the LOST-funded improvements made by local and regional transportation agencies to the state highway system, which Caltrans owns and operates. Some sales tax measures provide mitigation funds for which projects on the state highway system are eligible. Other measures enable projects to be built sooner than they would otherwise be built by matching or advancing funds expected from state and federal sources.

Advance mitigation components increasingly have been incorporated into local sales tax measures, to improve mitigation outcomes and expedite project delivery for transportation agencies. Further, some measures have fruitfully included an early action program, bonding against future revenues before revenue collections under the measure officially begin. Bonding against future revenues can provide capital earlier, enabling flexibility to time land acquisitions to favorable market conditions and to begin key transport projects sooner. The history and nature of LOSTs is discussed in Appendix A. Self Help Counties.

Twenty of the state’s 58 counties achieved voter approval of transportation sales tax measures, several on multiple occasions, and approximately 83% of the state’s population resides in counties that have enacted such measures. These are largely the state’s most urban, populous, and congested counties, though several suburban and rural counties have also enacted measures. These so-called “Self Help” Counties now have a consistent revenue stream to fund transportation projects. Many local jurisdictions have extended or “reauthorized” existing measures. However, in some instances, the reauthorization took multiple attempts before it passed.⁴⁶ California’s Self Help Counties Coalition⁴⁷ advances sales tax issues,

⁴⁵ Flynn, Chris. Supervising Environmental Planner, Environmental Programs. CalTrans – District 7 & 12. Teleconference on 16 Jul 2014.

⁴⁶ R. Hannay and M. Wachs. “Factors Influencing Support for Local Transportation Sales Tax Measures,” *Transportation*, Vol. 34 (January 2007), pp. 17-35.

⁴⁷ Self Help Counties Coalition. California’s Economy Fueled by Local Sales Tax Measures. Retrieved on 17 Jul 2014: http://www.selfhelpcounties.org/Brochure_Self-HelpCounties_011813.pdf.

watches funding trends and challenges, and collaborates with and convenes existing Self Help Counties and counties aspiring to pass a local transportation tax measure.⁴⁸ Appendix A provides more details on the population of Self Help Counties.



Caltrans and Local Sales Tax Measures

Though local transportation agencies actively seek endorsements for their ballot measures, Caltrans may not be listed as a supporter and may not lobby for the passage of such measures. Caltrans and its individual districts remain neutral while staff can certify that measures meet regional transportation needs and confirm that listed projects have been identified in the RTP/LRTP. Caltrans brings to the table a comprehensive understanding of highway needs, constraints, and opportunities. Additionally, through State Transportation Improvement Program (STIP) funds, and other funds, Caltrans contributes matching state funds to a project also supported by a transportation sales tax. Based on numerous conversations with local transportation agency staff members, consultants and Caltrans staff, it seems the projects included in these sales tax measures are determined in a number of ways. Included measure projects may be drawn from the Regional Transportation Plan (RTP), Long Range Transportation Plan (LRTP), Major Investment Studies (MIS), or local transportation studies. They may also be selected with an eye toward securing voter approval, given the local political climate, voter “appetite,” and other stakeholder interests.

⁴⁸ Ward, Monte. Special Projects Consultant to the Orange County Transportation Authority. Teleconference on 17 Jul 2014.

Mitigation Programs in LOSTs

Environmental mitigation, including dedicated funding for advance mitigation of transportation projects, can be included in LOSTs, has been assuming a growing role in LOST measures, and has been credited in some prominent instances with helping the LOST measure win voter approval. Thus, to the extent that the state wishes to pursue advance mitigation, state-local partnerships in the context of tax measures are an important arena for leveraging local partnerships, especially those measures with advance mitigation funding.

SCAG completed a survey in the Fall of 2013 of its member organizations specifically about advanced mitigation. SCAG found that county transportation commissions having sales tax measures in place believe they already have enough flexibility in their implementing ordinance language to incorporate advance mitigation (if it was not already). This provides an opportunity for Caltrans to benefit from local measures and flexibility in funding advance mitigation for freeway projects. A substantive change in the allocation of funds from one category to another category in the Expenditure Plan, such as freeways to transit or local roads to freeways, usually requires voter approval. If the funds remained in the voter-approved transportation project categories but were redirected to advance mitigation, no action by the voters was considered necessary. Counties in the SCAG region that currently do not have advance mitigation programs include San Bernardino and Los Angeles, and based on the survey results those transportation agencies may begin to incorporate advance mitigation features in the future. Conservation organizations have been working for two years with SCAG and local transportation agencies to adjust the measures and implement said programs.⁴⁹

With the two-thirds super-majority vote required to pass transportation sales tax measures, agencies must rely increasingly on support from non-traditional partners. The most obvious way to align stakeholder interests and goals with a proposed transportation measure is to include in the measure projects or programs that they would support. Finding mutually beneficial additions to the measure ultimately reduces opposition and aids in getting it passed.

Whereas conservation-focused organizations have historically either opposed or remained neutral when transportation sales tax measures reached the ballot, prominent recent experiences show the support of environmental coalitions can be won when such measures include ambitious mitigation components. In some cases, these organizations have sued the transportation agency either over the measure itself, the underlying regional transportation plan or Sustainable Communities Strategy (SCS), or a specific transportation project. For example, the Sierra Club sued the San Francisco Bay Area Metropolitan Transportation Commission, claiming its RTP devoted insufficient funds to transit.⁵⁰ In San Diego, the Cleveland National Forest Foundation, Center for Biological Diversity and others sued San Diego Association of Governments claiming its SCS promoted sprawling development and increased greenhouse gas emissions and air pollution.⁵¹

Yet, several transportation agencies have successfully incorporated innovative environmental features into their sales tax measures. For example: Santa Clara Valley Transportation Authority has a Sustainability component that “strengthens its commitment to the environment through the conservation

⁴⁹ Lieb, Jacob. Sustainability Program Manager, Southern California Association of Governments. Meeting about the SCAG Sustainability Program on 13 Mar 2014.

⁵⁰ Planetizen. Plan Bay Area: Sued From the Right, Now the Left. Retrieved 24 Jul 2014: <http://www.planetizen.com/node/64780>.

⁵¹ Center for Biological Diversity. Press Release: Judge Rules SANDAG’s Transportation Plan Violated California Law. Retrieved 24 Jul 2014: http://www.biologicaldiversity.org/news/press_releases/2012/transportation-plan-12-04-2012.html.

of natural resources, the reduction of greenhouse gases, the prevention of pollution and the use of renewable energy and materials.”⁵² San Diego, Riverside, Orange, and Sacramento Counties stand out because their measures all include comprehensive mitigation and several recently renewed transportation sales measures included advanced mitigation programs. Mitigation components were viewed by the conservation community as a mechanism to protect important habitat lands, and built support for the measures among environmental groups. This alignment of mutually beneficial goals coupled with strategic voter outreach and marketing aided in achieving passage of sales tax measures in San Diego and Orange Counties.⁵³

Table 1. Examples of Sales Tax Measures that Include Advance Mitigation.

County	Total Measure Budget	Advance Mitigation Budget	Advance Mitigation as % of Entire Measure	Restrictions
San Diego	\$14 B	\$850 M	6%	Allocates \$650 million for advance mitigation for 11 Major Transportation Corridor Improvement projects and \$200 million to mitigate local projects (street & roads).
Orange	\$11.6 B	\$243.5 M	2%	Allocates a minimum of 5% of the Freeway Program budget to mitigate for 13 freeway project impacts.
Sacramento	\$4.7 B	\$5 M	0.1%	Allocates a specified amount to mitigate impacts from the I-5/SR-99/SR-50 connector road.
Riverside	\$4.6 B	\$83 M	1.8%	Allocates 5% of the freeway program budget to mitigate cumulative and indirect impacts.

LOST Case Studies

Presented in **Appendix B** are several instructive examples of sales tax measures that have or have not incorporated advance mitigation and their associated outcomes. These cases offer rich detail about the circumstances leading to inclusion or exclusion of advance mitigation features in LOST measures. While they deserve close attention, they are placed in an appendix to increase the readers’ ability to navigate the report as a whole.

State Revenue Options

Because LOSTS are increasingly funding projects that are part of the state highway system, and revenue from sales taxes is growing faster than state motor fuel taxes or federal allocation, this is a promising revenue source. It is likely that advance mitigation partnerships will grow as part of ballot measures because local governments are increasingly recognizing their utility. Counties will of course seek state and Federal funding for which such efforts are considered eligible applicants, but increasingly they are doing so to leverage local sales tax revenue. While it is also possible to envision new legislation increasing the state role in advance mitigation via access to general funds or state borrowing authority, we

⁵² Santa Clara Valley Transportation Authority. Environment. Retrieved 22 Jul 2014 from the Authority’s website: <http://www.vta.org/projects-and-programs/programs/environment>.

⁵³ Yes on M Committee. Environmental Mailer. Mailed to High Propensity Voters in Fall 2006.

emphasize here discrete existing sources. We also highlight state funding available for conservation and mitigation efforts from specific bond initiatives, even where such bonds are currently almost entirely or fully encumbered or may not provide funds for transportation projects. Such initiatives may not provide an immediate funding solution for an advance mitigation program, but they do serve as examples of programs that Caltrans could use to meet advance mitigation objectives in the future.

In this section, we also call attention to the potential for using state Cap-and-Trade revenues to support advance mitigation in certain instances, particularly where mitigation efforts not only meet legal requirements for protecting species and ecosystems, but also provide quantifiable carbon benefits. Consistent with the emphasis we have placed on partnerships, we believe Cap-and-Trade funding for advance mitigation may be most fruitfully pursued by Caltrans in cooperation with such other entities as the State Transportation Agency, the Strategic Growth Council, the Air Resources Board, state legislative staff, and the Governor's office.

State Grant Sources

State level environmental grants are a promising source of funding for Caltrans advance mitigation. California has a long history of enacting voter-approved environmental measures that provide grant funding for conservation objectives.⁵⁴ State level grants can satisfy federal mitigation requirements, and may be designed to meet state level mitigation requirements as well. For some of the grant programs that are discussed, the funds cannot be mingled with mitigation funds nor can the mitigation and grant funded restoration on site be mingled, and these limitations are specifically noted in the relevant sections below. However, in combination funding can be used synergistically for a better conservation outcome, resulting in lower costs for Caltrans per unit of mitigation. In addition to grant funding that may be a current option for Caltrans, this section also discusses already encumbered grants and model programs for other infrastructure. These provide examples of the types of future grant programs Caltrans could use to fund advance mitigation, should the Legislature enact legislation that extends or expands such programs.

Environmental Enhancement and Mitigation (EEM) Program⁵⁵

The California Environmental Enhancement and Mitigation Program (EEMP) awards grants to local, state, and federal governmental agencies and to nonprofit organizations. Eligible projects must be directly or indirectly related to the environmental impact of the modification of an existing transportation facility or construction of a new transportation facility (CA Constitution, Art. XIX, Sec.1).⁵⁶

Up to \$10 million per year is appropriated to the Secretary of the California Natural Resources Agency (CNRA) for grants awarded by the Secretary to support local environmental enhancement and mitigation programs.⁵⁷ Though grants have averaged around \$300,000, they may reach \$1,000,000 for land acquisition and are evaluated by CNRA on the basis of maximum benefits from a one-time or limited opportunity, the acquisition of resource lands of a considerable size, the leveraging ability of funds

⁵⁴ Often these are propositions that authorize bond issuances.

⁵⁵ Caltrans Division of Local Assistance. <http://www.dot.ca.gov/hq/LocalPrograms/EEM/homepage.htm>

⁵⁶ California Natural Resources Agency, <http://resources.ca.gov/eem/>; California Department of Transportation, <http://www.dot.ca.gov/hq/LocalPrograms/EEM/homepage.htm>

⁵⁷ California Department of Transportation. Local Assistance Program Guidelines. http://www.dot.ca.gov/hq/LocalPrograms/lam/prog_g/g20eem.pdf

(matching is not required),⁵⁸ and the statewide significance of the project.⁵⁹ Recommendations on grants are then made by CNRA to the CTC,⁶⁰ which allocates funds according to a 60/40 split between Southern and Northern Counties. (Sections 187 and 188 of the Streets and Highways Code).⁶¹ Grant submission guidance suggests that both matching funds and partnerships, while not required, are looked upon favorably, as they signal buy-in and collaboration from other stakeholders and agencies.

There are two types of grants for which Caltrans may be able to gain funding for advanced mitigation.

- Resource Lands Projects are for the acquisition, restoration, or enhancement of resource lands (watersheds, wildlife habitat, wetlands, forests, or other significant natural areas) to mitigate the loss of or detriment to such lands within or near the right of way for transportation improvements.
- Mitigation Projects beyond the Scope of the Lead Agency. This type of grant is used for required mitigation where the mitigation or enhancement measures are beyond the scope of the lead agency's ability to effectuate.⁶² For example, if the acquisition of land beyond the minimum required for direct mitigation of Caltrans infrastructure would make a partnership more attractive to other partners, the partnership could apply for support under this program. This category is new as of 2012 and has not been used by Caltrans.
- This category is new as of 2012 and has not been used by Caltrans.

While it is not clear that Caltrans mitigation efforts would be eligible for such grants in all instances, this source belongs on the menu of potential advance mitigation sources to consider, situation by situation. Where there is potential for fit with the mitigation and complementary activities of Caltrans and its potential partners, it is worth consulting with the EEMP application review team. According to EEMP records, most grants recipients have been cities and non-profit agencies, though as of 2012 Caltrans has used it for three projects:⁶³

- Diamond Bar Urban Reforestation Project (2007) - \$320,000 (HLUR)
- Aliso Creek Vista Point Enhancement (2007) - \$350,000 (RL)
- Caltrans District 11 EEMP (2009) - \$297,000 (RL).

Also, other eligible recipients can apply if Caltrans is the lead agency on the project, and partnership is encouraged. One project for which the EEMP has benefited Caltrans, although not advance mitigation, is the South Fork American River Trail, for which the Placer Land Trust received \$250,000 EEMP funding to mitigate effects of the nearby widening of I-80.⁶⁴

Fisheries Restoration Grant Program

⁵⁸ California Natural Resources Agency. Environmental Enhancement and Mitigation Program Workshop. https://www.youtube.com/watch?v=cB_NWKEatMk&feature=youtu.be

⁵⁹ California Natural Resources Agency. http://resources.ca.gov/eem/docs/2013_14_EEMP_GUIDELINES_FINAL.pdf

⁶⁰ California Department of Transportation. http://www.dot.ca.gov/hq/LocalPrograms/lam/prog_g/g20eem.pdf

⁶¹ California Natural Resources Agency. Environmental Enhancement and Mitigation Program Workshop.

⁶² California Natural Resources Agency. Environmental Enhancement and Mitigation Program Workshop.

⁶³ California Department of Transportation. <http://www.dot.ca.gov/hq/LocalPrograms/EEM/status2012-30-7.pdf>. Also, cities can apply if Caltrans is the lead agency on the project, and partnership is encouraged, so it may have used on other projects.

⁶⁴ Placer Land Trust. <http://www.placerlandtrust.org/land-lines-springsummer-2004/>

The Fisheries Restoration Grant Program (FRGP) was established in 1981 in response to rapidly declining populations of wild salmon and steelhead trout and deteriorating fish habitat in California. This competitive grant program has invested millions of dollars appropriated annually by the State Legislature to support projects such as channelization and sediment reduction, replacement of barriers by culverts and similar actions to enable migrating species to access California waterways in coastal areas. Contributing partners include federal and local governments, tribes, water districts, fisheries organizations, watershed restoration groups, the California Conservation Corps, AmeriCorps, and private landowners. This project will use grant funds approved by the California Legislature to initiate activities that are designed to restore salmon and steelhead habitat in coastal streams and watersheds that historically produced large populations of salmon and steelhead. Application procedures, annual budgets, and lists of recently funded projects are available at the program's web site.⁶⁵

Encumbered Funds That May Be Models for Future Revenue Initiatives

Whereas several existing funding sources could in principle compatibly support the broader conservation and environmental improvement aims of a comprehensive advance mitigation partnership program, many of these sources are already encumbered. We highlight some of these funds here, as models of the kinds of sources that could be developed in the future to more explicitly support advance mitigation activities. In seeking a bond measure that could support both conservation and legally required mitigation activities, Caltrans could partner with stakeholders both within and beyond the transportation sector.

Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (Proposition 84)

California State Proposition 84 was approved by the voters in 2006 with 53.8% of the vote. It authorized \$5.388 billion in general obligation bonds to fund water quality improvement and other environmental efforts, including mitigation necessary to make the projects feasible.⁶⁶ The bond issue provided for:

- \$450 million for forest and wildlife conservation;
- \$1.525 million for water quality projects; and
- \$580 million for Sustainable Communities and Climate Change Reduction. This money is administered by Caltrans on behalf of the Natural Resources Agency and the Strategic Growth Council to help MPOs comply with SB 375.⁶⁷

The bonds are currently almost entirely encumbered and therefore do not provide a funding solution for a Caltrans advance mitigation programs. But the fund has contributed grants to many conservation programs that indicate that it is the type of program Caltrans could use to meet advanced mitigation objectives in the future. If renewed in the future, Caltrans could pursue the inclusion in the related text of the Public Resources Code to make bond funds eligible for expenditure on the planning,

⁶⁵ California Department of Fish and Wildlife, Fisheries Restoration Grant Program, <http://www.dfg.ca.gov/fish/Administration/Grants/FRGP/>.

⁶⁶ California Natural Resources Agency. <http://bondaccountability.resources.ca.gov/p84.aspx>

⁶⁷ California Department of Transportation.

http://www.dot.ca.gov/hq/tpp/offices/orip/Collaborative_Planning/Strategic_Growth_Council.html

implementation, or monitoring and maintenance of landscape scale mitigation efforts linked with complementary activities.

As of 2014 some available funding remains that is dedicated to regional conservancies, and these may lead to beneficial partnerships with Caltrans that would benefit from reduced administrative costs, mitigation economies of scale, and land ownership issues.⁶⁸

California Clean Water, Clean Air, Safe Neighborhood Parks, and Coastal Protection Act of 2002 (State Prop 40)

Though now fully encumbered,⁶⁹ California State Proposition 40, was approved by voters in 2002, and authorized \$2.6 billion in bonds to fund local assistance grants to federal, state and local government agencies, as well as non-profit conservation organizations. Some \$1.275 billion of the revenue was dedicated to land, water, and air conservation, including \$300 million for wildlife habitat acquisition and restoration administered by the state Wildlife Conservation Board (WCB).⁷⁰ WCB grants were given for projects with the following aims (among others):⁷¹

(1) Recovery of Threatened and Endangered Species

Includes projects and habitats that are critical to the sustainability of federal or state listed threatened or endangered species, or species of special concern. NCCP or HCP properties or projects which have received California Department of Fish and Wildlife approval and are part of a long-term conservation plan can also be funded.

(2) Linkages and Corridors

Includes projects with actively used habitat lands that connect larger, already protected habitats for multiple species. These may be selected according to the following priorities:

- High development threat; high-use route for species that migrate annually;
- High development threat; one of few remaining routes for species that use and additional habitats; a true corridor for species' safe transfer from one habitat block to another; and
- Future likely threat; connecting acreage between intact ecological communities which would provide greater diversity as a whole for the watershed.

Caltrans utilized funding from Proposition 40 for the Trabuco Creek Fish Passage Steelhead Restoration project done in partnership Trout Unlimited (the grant recipient), Orange County, the California Conservation Corps and the California Department of Fish and Game. They received a \$357,000 to “improve fish passage by modifying the concrete channel that carries Trabuco Creek under Interstate 5 and Camino Capistrano Road approximately one mile north of San Juan Capistrano, located on public land in Orange County.”⁷²

⁶⁸ For a complete breakdown of fund allocation see

<http://bondaccountability.resources.ca.gov/PDF/Prop84/Prop84AllocationBalanceReport.pdf>

⁶⁹ California Department of Parks and Recreation. http://www.parks.ca.gov/?page_id=21876

⁷⁰ California Wildlife Conservation Board.

<https://www.wcb.ca.gov/FundingSources/Prop40/EligibilityandFundAllocation.aspx>

⁷¹ California Wildlife Conservation Board.

<https://www.wcb.ca.gov/FundingSources/Prop40/PublicResourceCode.aspx>.

⁷² <http://www.4050bonds.resources.ca.gov/ProjectDetail.asp?RecordID=50357>

Other similar bond-supported programs that have been enacted in California to support water quality with funding dedicated to conservation projects include:

- Proposition 12: The Safe Neighborhood, Parks, Clean Water, Clean Air, and Coastal Protection Bond Act of 2000 — \$3.8 billion;⁷³
- Proposition 13: The Safe Drinking Water, Clean Water, Watershed Protection, and Flood Protection Bond Act of 2000 — \$3.4 billion;⁷⁴
- Proposition 50: The Water Quality, Supply, and Safe Drinking Water Projects (Coastal Wetlands Purchase and Protection) Act of 2002 — \$5.7 billion.⁷⁵

Model Programs: SB 34 – Grants for Advanced mitigation for renewable energy projects

The Desert Renewable Energy Conservation Plan is a collaborative effort to “conserve and manage plant and wildlife communities in the desert regions of California while facilitating the timely permitting of compatible renewable energy projects.”⁷⁶ California SB 34 provides grants for advanced mitigation specifically for renewable energy projects in the California desert. While this bill does not provide funds for transportation projects, it is of interest to Caltrans because it provides a model for the type of grant programs Caltrans could pursue in the future, as well as innovative partnerships between infrastructure projects and resource agencies.

Under this program, project developers pay in-lieu fees to the California Department of Fish and Game, which then designs and implements advanced mitigation projects in cooperation with USFW, California Energy Commission, and the Bureau of Land Management.⁷⁷ The land purchased as part of the program is pooled and can be applied to qualifying renewable energy projects.⁷⁸ One aim of the program is to put “forward a regional planning perspective that provides a foundation for or that will complement, any conservation strategy to be developed for the Desert Renewable Energy Conservation Plan (DRECP), and will be incorporated into the DRECP.”⁷⁹

⁷³ Ballotpedia.

[http://ballotpedia.org/wiki/index.php/California_Proposition_12,_Bonds_for_Water,_Forests_and_Open_Space_\(2000\)](http://ballotpedia.org/wiki/index.php/California_Proposition_12,_Bonds_for_Water,_Forests_and_Open_Space_(2000))

⁷⁴ Ballotpedia.

[http://ballotpedia.org/wiki/index.php/California_Proposition_13,_Bonds_for_Water_Infrastructure_\(2000\)](http://ballotpedia.org/wiki/index.php/California_Proposition_13,_Bonds_for_Water_Infrastructure_(2000))

⁷⁵ Ballotpedia. [http://ballotpedia.org/wiki/index.php/California_Proposition_50,_Bonds_for_Water_Projects_\(2002\)](http://ballotpedia.org/wiki/index.php/California_Proposition_50,_Bonds_for_Water_Projects_(2002))

⁷⁶ Desert Renewable Energy Conservation Plan. <http://www.drecp.org/whatisdrecp/>. Partners include the California Energy Commission, California Department of Fish and Wildlife, Bureau of Land Management, and the U.S. Fish and Wildlife Service. Memoranda of Understanding (MOUs) were signed by the participating agencies. Other participating agencies include the California Public Utilities Commission, the California State Lands Commission, California Department of Parks and Recreation, the California Independent System Operator, the National Park Service, the U.S. Environmental Protection Agency, and the U.S. Department of Defense.

<http://www.drecp.org/participants/>. An extensive list of other stakeholders, including local governments and private energy companies, can be found at <http://www.drecp.org/participants/stakeholder.html>.

⁷⁷ California Department of Fish and Game. SB 34 Advance Mitigation Land Acquisition Grants Program.

<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentVersionID=66510>

⁷⁸ California Department of Fish and Wildlife News. <http://cdfgnews.wordpress.com/2013/04/18/california-department-of-fish-and-wildlife-and-energy-commission-complete-landmark-land-mitigation-deal-for-ivanpah-solar-project/>

⁷⁹ California Department of Fish and Game. SB 34 Advance Mitigation Land Acquisition Grants Program.

California Cap-and-Trade Revenue

California's recently established Cap-and-Trade Program, first discussed in the report of Task 2 of this study, is relevant to Caltrans' efforts to establish a systematic, strategically funded advance mitigation program. Launched in 2012, the Cap-and-Trade program yields revenues from the auction of tradable greenhouse gas (GHG) emissions permits, or allowances. The program was outlined as one of the GHG emissions reduction strategies in the *Climate Change Scoping Plan*⁸⁰ for AB 32, the law that committed the state to reducing GHG emissions to 1990 levels by 2020 and helped spur climate action by other states. Under the Cap-and-Trade program, the state Air Resources Board (ARB) determines the cap on GHG reductions needed to achieve intended emissions reduction in the state and limits the number of tradable allowances accordingly. It then allocates the allowances to industrial facilities,⁸¹ investor-owned utilities (IOU) and publicly owned electrical utilities (POU) and natural gas suppliers,⁸² while also retaining some state-owned allowances.

By law, revenues from the sale of allowances must be invested in support of greenhouse gas reductions, making potential use of the state-owned allowance proceeds to fund advance mitigation of transportation projects both somewhat promising and uncertain. Reduction opportunities outlined in the *Climate Change Scoping Plan* are consistent with the state's climate policy goals, and the three-year Cap-and-Trade Investment Plan⁸³ identifies priority investments to be considered for budget support. Ultimately, the Governor's budget and ultimately the budget act establish the actual investments, and analysis of GHG benefits ensures a nexus between any expenditure and AB 32 goals.

The Decision-making Process for Cap-and-Trade Revenues

The California State Legislature in coordination with the Governor's office and CARB make decisions about how to spend state-owned Cap-and-Trade auction proceeds. Ultimately, the Legislature must approve of any Cap-and-Trade revenue expenditures when it enacts the annual Budget Act, by mid-June if on schedule, and the Governor must approve by signing the budget. However, well prior to the budget's enactment, the Governor's own Budget Proposal, submitted to the Legislature in January and developed in the months prior, is an important input to the budget process. A draft Cap-and-Trade Expenditure Plan, developed with ARB and other agencies' input, informs the Governor's Budget Proposal by identifying priority investments consistent with the *Scoping Plan*. The Legislature debates the Governor's proposal, making changes as it sees fit. Once the Legislature sends the Governor an approved budget, the Governor signs or vetoes the budget and can reduce but cannot increase line item expenditures. While the Legislature must also follow the statutes governing Cap-and-Trade implementation and expenditures, it can also amend or repeal those statutes through the budget process.⁸⁴

⁸⁰ California Air Resources Board. (2008). *Climate Change Scoping Plan: A Framework for Change*. Sacramento, CA; and (2014). *First Update to the Climate Change Scoping Plan: Building on the Framework*. Sacramento, CA.

⁸¹ Industrial allocations provide short-term transition assistance for smooth market start-up and also address long-term industry vulnerabilities to risks of leakage, i.e. GHG emissions reductions within the State that are offset by GHG increases outside the State.

⁸² These allocations are designed to shield electricity and natural gas ratepayers from any sudden increases in their bills associated with the Cap-and-Trade Regulation.

⁸³ State of California. (2013). *Cap-and-Trade Auction Proceeds Investment Plan: Fiscal Years 2013-14 through 2015-16*. Sacramento, CA: California Air Resources Board.

⁸⁴ The budget bill itself appropriates money to the various programs receiving cap and trade revenues, but subsequent "budget trailer bills" enact the statutory provisions governing each program, carrying out the law changes necessary to raise or spend the money the budget assumes. Both the budget bill and trailer bills require the Governor's signature, allowing neither the Legislature nor the Governor to act unilaterally and requiring both to reach agreement on the budget and trailer bills prior to their enactment by the Legislature.

With Cap-and-Trade only a few years old, California is just beginning to accumulate experience administering the program and choosing how to expend its revenues. The state Legislative Analyst's Office observes that the "amount of revenues that the state will receive from Cap-and-Trade auctions will be significant, particularly in the long run," and estimates "total Cap-and-Trade revenues from all auctions through 2020 could range from \$12 billion to \$45 billion."⁸⁵ Eight quarterly auctions have been held between November 2012 and August 2014, yielding \$2.27 billion in total to date, of which \$833 million is state revenue (See Appendix B). Per auction revenues to the state have ranged from \$55 million (November 2012) to \$138 million (August 2013). A significant increase in auction revenues is anticipated after January 1, 2015, when the Cap-and-Trade program expands to include transportation and natural gas fuel suppliers. There is much public discussion underway about the possibility of delaying this step in Cap-and-Trade's expansion, and the ARB board is expected to discuss the matter at its September 18, 2014, meeting.⁸⁶ A delay might provide additional time for Caltrans and potential partners to consider the application of Cap-and-Trade revenues to advance mitigation.

To date, transportation investments supporting High Speed Rail, bus and rail transit service, and intercity rail have found places in the 2014-2015 Cap-and-Trade Expenditure Plan, with the expectation that such efforts will contribute to increased transit ridership and decreased GHG emissions. (See Table 2.) Sixty percent of future auction proceeds is permanently allocated to these investments, with remaining proceeds to be allocated in future budgets. Additionally, 2014-2015 Cap-and-Trade proceeds have also been appropriated to support restoration of wetlands, coastal watersheds, and mountain meadows, acknowledging their carbon sequestration benefits.

⁸⁵ Taylor, M. (2014). The 2014-15 Budget: Cap-and-Trade Auction Revenue Expenditure Plan. Sacramento, CA: Legislative Analyst's Office. p. 4.

⁸⁶ Air Resources Board. Meeting Agenda. <http://www.arb.ca.gov/board/ma/2014/ma091814.pdf>

Table 2. Cap-and-Trade Expenditure Plan

Cap and Trade Expenditure Plan (Dollars in Millions)				
Investment Category	Department	Program	2014-15	Ongoing
Sustainable Communities and Clean Transportation	High-Speed Rail Authority	High-Speed Rail Project	\$250	25 percent
	State Transit Assistance	Low Carbon Transit Operations Program	\$25	
	Caltrans	Transit and Intercity Rail Capital Program	\$25	35 percent
	Strategic Growth Council	Affordable Housing and Sustainable Communities Program	\$130	
	Air Resources Board	Low Carbon Transportation	\$200	Annual Appropriations
Energy Efficiency and Clean Energy*	Department of Community Services and Development	Energy Efficiency Upgrades/Weatherization	\$75	Annual Appropriations
	Energy Commission	Energy Efficiency for Public Buildings	\$20	
	Department of Food and Agriculture	Agricultural Energy and Operational Efficiency	\$15	
Natural Resources and Waste Diversion	Department of Fish and Wildlife	Wetlands and Watershed Restoration	\$25	Annual Appropriations
	Department of Forestry and Fire Protection	Fire Prevention and Urban Forestry Projects	\$42	
	Cal Recycle	Waste Diversion	\$25	
Total			\$832	

Source: Enacted Budget Summary, California State Budget (2014-2015)

Prospects for Using Cap-and-Trade Revenue for Mitigation

Given the newness of the Cap-and-Trade program, its emphasis on GHG reduction, the scale of anticipated future revenues, and the potential for mitigation and conservation lands to provide carbon benefits, it may be appropriate to pursue future allocations of Cap-and-Trade revenue for advance mitigation of transportation projects. Our interviews with ARB staff suggest that ARB may be interested in projects that jointly address transportation mitigation and GHG reduction, particularly where projects go beyond legally required mitigation itself and where any funded mitigation would not offset GHG increases from the transportation project(s) being mitigated.⁸⁷ For instance, transportation projects that would improve highway capacity in congested metro areas are unlikely to reduce congestion or associated GHG in the long run,⁸⁸ whereas construction of high speed rail in California is expected to “reduce vehicle miles traveled in cars, as well as planes, thereby reducing total GHG emissions.”⁸⁹ (The State High Speed Rail Authority has consequently won a continuous appropriation of 25 percent of Cap-and-Trade revenues beginning in FY 2015-16.) CARB is likely to look for evidence of the potential for quantifiable GHG reductions from such mitigation investments, making it important for Caltrans and any

⁸⁷ Marvin, C., Livingston, S., & Livingston, A. (2014, May 28) Personal communication.

⁸⁸ Handy, S. L., & Boarnet, M. G. (2014). Impact of Highway Capacity and Induced Travel on Passenger Vehicle Use and Greenhouse Gas Emissions: Policy Brief.

http://www.arb.ca.gov/cc/sb375/policies/hwycapacity/highway_capacity_brief.pdf

⁸⁹ Taylor, M. (2014). The 2014-15 Budget: Cap-and-Trade Auction Revenue Expenditure Plan. Sacramento, CA: Legislative Analyst’s Office.

partners in a statewide advance mitigation effort to estimate GHG sequestration and reduction potential from mitigation and conservation efforts.

While it is beyond the scope of this project to develop such evidence, and while it is possible that the Legislature or Governor could promote the use of Cap-and-Trade funds for advance mitigation without such evidence, there are several reasons to think that a quantifiable case could be made for the expenditure of Cap-and-Trade revenues on advance mitigation *in certain instances*.

First, the Cap-and-Trade Expenditure Plan already specifies that activities related to (a) “strategic planning and development of sustainable infrastructure projects, including, but not limited to, transportation and housing,” and to (b) “land and natural resource conservation and management, forestry, and agriculture” are both eligible and recommended categories of investment. Programs in these domains that are “implemented by state, local and regional agencies, local and regional collaboratives, and non-profit organizations coordinating with local governments” are eligible as well, suggesting the importance of partnerships.⁹⁰ Additionally, the Scoping Plan explicitly observes that “[l]oss of forest land to development increases greenhouse gas emissions levels because less carbon is sequestered. Avoiding or mitigating such conversions will support efforts to meet the 2020 goal” (2008, p. 65). It further notes that “[i]ncreasing carbon sequestration, including on working rangelands, hardwood and riparian woodland reforestation, also hold potential as a greenhouse gas strategies” for which ARB seeks to develop quantification protocols (2008, p. 67).

Second, the 2014-2015 Expenditure Plan already funds some ecosystem restoration activities throughout the state—including in the Delta, on the coast, and in mountain meadows—with the intention of increasing land that can naturally capture and store carbon. Estimates reported by the Department of Fish and Wildlife suggest that:

“the carbon storage potential from restored wetlands and meadows range widely, but can be as much as 25 metric tons of CO₂e per year per acre restored. The amount of carbon stored depends on numerous factors, including: (1) the type of wetland, (2) whether the land is adequately maintained, (3) the type of vegetation in the ecosystem, (4) the rate at which the soil accumulates, and (5) whether the restoration increases methane emissions.”⁹¹

Third, there is growing scientific interest in measuring the carbon sequestration benefits of land conservation and restoration activities. In California, research staff at The Nature Conservancy are working with the Sonoma County Agricultural Preservation and Open Space District to account for carbon savings that may accrue to land use scenarios offered as alternatives to dispersed green-field development, or sprawl. Further, the U.S. Geological Service is funding study of the carbon dynamics associated with changes in land use.⁹² Ultimately, empirical quantification of the carbon benefits from avoided land conversion, land conservation, and land restoration might take the form of new carbon offset protocols developed for such activities. Such protocols provide the requirements and methods for quantifying the net climate benefits of activities that sequester carbon,⁹³ and would play an important role in establishing the factual record for and legitimacy of Cap-and-Trade expenditures on certain applications of advance mitigation.

⁹⁰ State of California. (2013). Cap-and-Trade Auction Proceeds Investment Plan: Fiscal Years 2013-14 through 2015-16. Sacramento, CA: California Air Resources Board.

⁹¹ Taylor, M. (2014).

⁹² Cameron, Dick. (2014, July 24). Personal communication.

⁹³ For example: California Air Resources Board. (2011). *Compliance Offset Protocol U.S. Forest Projects*: California Environmental Protection Agency.

Finally, as described earlier and in the report of Task 2, Orange County’s success in integrating advance mitigation of transportation projects with regional GHG reduction efforts under SB 375 suggests that some advance mitigation initiatives may facilitate GHG reductions as a secondary result, while achieving the primary aim of mitigating impacts of transportation projects on natural lands and habitats.

Experience with *TransNet* and Measure M2, two prominent California transportation funding measures reviewed earlier, suggests that inclusion of advance mitigation programs is one way to increase the likelihood of public approval for transportation investment packages. Where such programs are planned, it is important to explore how planned mitigation actions might also contribute to carbon storage, reduction, and avoidance, and therefore may also be eligible for Cap-and-Trade expenditure. This is especially relevant for advance mitigation programs including so-called “net benefit” provisions, where mitigation exceeds legal requirements. Such “net benefit” mitigation activities—and their associated GHG reductions—may align particularly well with Cap-and-Trade eligibility guidelines, which suggest that expenditures must support activities that would otherwise not happen.

As described in the report of work done in Task 2, a suite of laws establishes the legal framework for Cap-and-Trade implementation (AB 32, SB 1018, AB 1532, & SB 535). To abide by legal limitations on the use of auction revenue, the state must act consistently with provisions of these statutes and with constitutional restrictions on the use of regulatory fees when making revenue allocation decisions.⁹⁴ Notably, because Cap-and-Trade revenues are fees, not taxes, their expenditure must have a nexus to address the impacts (GHG emissions) for which the fee was imposed. While the Cap-and-Trade Program has withstood legal challenges from the California Chamber of Commerce and the Pacific Legal Foundation, who had maintained that the auctions themselves were an unconstitutional tax,⁹⁵ later allocation decisions on disposition of auction revenues could also be challenged. Recognizing this, the LAO and others have called for caution in expenditure decisions.

“Given these legal uncertainties, funding certain activities with these revenues might be riskier than other activities. Therefore, the Legislature may want to consult with Legislative Counsel when considering its options for spending auction revenues.”⁹⁶

From a litigation risk perspective, a report from the UCLA Emmett Center on Climate Change and Law concludes that “the safest [Cap-and-Trade expenditure] proposals are:

- 1) proposals primarily aimed at funding greenhouse gas reductions;
- 2) proposals that achieve other goals explicitly endorsed by AB 32;
- 3) proposals supported by a factual record developed by the Legislature or by CARB concerning the achievement of reductions or other goals; and
- 4) proposals that avoid direct allocation of money for revenue purposes unrelated to AB 32.”⁹⁷

Unless modifications are made to state law by the California Legislature, to the extent that transportation mitigation programs can be tailored to address these concerns directly, they will be more appealing as potential Cap-and-Trade expenditure items. The key question determining the appropriateness of an expenditure of Cap-and-Trade revenues is whether the supported activity can produce a quantifiable and significant GHG reduction. Thus, when considering advance mitigation as such an activity, an important consideration will be:

- Whether and to what extent there is overlap between natural lands desirable for CO₂ sequestration and GHG reduction and natural lands desirable for their mitigation value, given landscape, habitat, species, and wetlands considerations.

⁹⁴ Horowitz, C., Enion, M. R., Hecht, S. B., & Carlson, A. (2012). *Spending California’s Cap-and-Trade Auction Revenue: Understanding the Sinclair Paint Risk Spectrum*. Los Angeles, CA: Emmett Center on Climate Change and the Environment, UCLA School of Law.

⁹⁵ Kasler, D. (2013, Nov. 14). Court rejects challenge to California’s carbon auctions, *Sacramento Bee*. Retrieved from <http://www.sacbee.com/2013/11/14/5912277/court-rejects-challenge-to-californias.html>

⁹⁶ Taylor, M. (2014)

⁹⁷ Horowitz, et al (2012).

The answers to these questions are likely to be quite complex and strongly influenced by the assumptions embedded in any analysis. For instance, in the case of the local sales tax-funded advance mitigation programs in San Diego's *TransNet* and Orange County's Measure 2, significant advance mitigation and conservation efforts would not have happened without the support of the local tax revenues. Yet, one could argue that environmental mitigation would have been undertaken anyway for projects as they were implemented, but that such mitigation (and project construction) would likely have occurred many years later and in a piecemeal fashion, without linkages to larger conservation efforts or net environmental benefit provisions. Thus, credit could be given for the long-term mitigation achieved by the expenditure of these funds, while by other measures credit might be given only for the difference in mitigation achieved by the measure in comparison with more piecemeal implementation.

These issues are complex and likely to be resolved only when ARB reviews specific requests for use of Cap-and-Trade funds. To date, however, no precedent has been set precluding Cap-and-Trade support for certain advance mitigation efforts, where GHG benefits are clear.

For this reason, we recommend that Caltrans pursue the potential use of Cap-and-Trade revenues for advance mitigation of transportation projects. Such efforts would benefit from close and continuing communication and coordination with ARB staff, to ensure that ARB's own legal requirements for Cap-and-Trade expenditures are understood and adequately addressed and to insure that the Caltrans perspective is represented in forthcoming discussions. Caltrans might also consider partnering with the HSRA and the Strategic Growth Council to explore such possibilities.

Specifically, Caltrans could explore the potential for securing Cap-and-Trade funds to support advance mitigation in the framework of the 2015-2016 budget cycle. Early engagement with respect to this issue with ARB in context of the Governor's Budget Proposal and the 2015 Cap-and-Trade expenditure plan update could afford all parties ample time to explore the eligibility of candidate mitigation applications for Cap-and-Trade funds and to address issues related to measurement and quantification of associated GHG reductions.

Revenue Options Involving Federal Participation

When local and state agencies form partnerships to develop transportation infrastructure projects collaboratively, it is likely that they will seek supportive federal funding. We reviewed federal funding possibilities for advance mitigation and enumerated the most promising in this section. In many instances, we found that federal authorities regarded these programs to be available for advance mitigation, even though there had been very few applications submitted for some of the Federal programs we discuss. Thus, we include them with encouragement that Caltrans should presume that few precedents imply the programs are not open to them.

Transportation Investment Generating Economic Recovery (TIGER)

TIGER Grants are made by a federal program that is increasingly well known among transportation agencies. The TIGER grant program is both growing and more flexible than traditional federal formula funding programs. While the application process is highly competitive and the long-term future of the program is not assured, the Research Team regards the TIGER Program to be a promising avenue by which to seek federal funding for transportation infrastructure investment. The 2014 federal Consolidated Appropriations Act includes \$600 million for competitive TIGER grants,⁹⁸ of which \$120 million is dedicated to projects in rural areas. TIGER Discretionary Grants may be used for up to 80 percent of the cost of an urban project, and 100% of the cost of a rural project, with the average among projects for which awards were made employing about 3.5 additional non-federal dollars for every TIGER grant dollar.⁹⁹

⁹⁸ U.S. Department of Transportation. <http://www.dot.gov/tiger>

⁹⁹ U.S. Department of Transportation.

http://www.dot.gov/sites/dot.gov/files/docs/TIGER%202014%20NOFA_FINAL.pdf

TIGER Grants are awarded in stiff competition among many applicants – to date there have been 270 awards made in response to the receipt of over 5,300 applications. While the 2014 program explicitly prioritizes “ladders of opportunity,” which implies linkages between transportation and economic development, the 2014 program guidelines also explicitly enumerate that the program would fund planning grants, and also explicitly highlight programmatic mitigation as an area of eligibility.¹⁰⁰ Caltrans subsequently submitted two proposals including advance mitigation to USDOT; neither proposal received an award. The competitiveness of future Caltrans proposals seeking TIGER funding for advance mitigation of transportation projects may be enhanced by including proposal text that addresses the potential for economic efficiencies and benefits from advance mitigation, as documented in the Task 3 report.

The program was initiated in 2009 with the purpose of stimulating economic activity and thus contributing to the economic recovery from the “great recession.” The program proved both popular and effective and it was continued for several additional rounds of funding applications. The promise of the TIGER grant program as a potential though uncertain source of funding for advance mitigation was enhanced in April 2014, when planning for programmatic mitigation activities were specifically named among eligible activities under planning grants.

Applications for TIGER grants are ranked according to primary and secondary selection criteria. Primary selection criteria are weighed more heavily and address long-term positive effects of the project. In addition, job creation and economic stimulus effects are evaluated. These primary criteria include:¹⁰¹

- State of Good Repair: Improving the condition of existing transportation facilities and systems, with particular emphasis on projects that minimize life-cycle costs.
- Economic Competitiveness: Contributing to the economic competitiveness of the United States over the medium- to long-term.
- Livability: Fostering livable communities through place-based policies and investments that increase transportation choices and access to transportation services for people in communities across the United States.
- Environmental Sustainability: Improving energy efficiency, reducing dependence on oil, reducing greenhouse gas emissions and benefitting the environment.
- Safety: Improving the safety of U.S. transportation facilities and systems.

The environmental sustainability criterion appears most directly related to the goals of advance environmental mitigation and is further defined in the Notice of Funding Availability for the Department of Transportation's National Infrastructure Investments under the Consolidated Appropriations Act, 2014 as:¹⁰²

Improving energy efficiency, reducing dependence on oil, reducing greenhouse gas emissions, addressing storm water through natural means, avoiding and mitigating environmental impacts and otherwise benefitting the environment. DOT will assess the project's ability to (i) reduce energy use and air or water pollution; **(ii) avoid adverse environmental impacts to air or water quality, wetlands, and endangered species; (iii) provide environmental benefits, such as brownfield redevelopment, ground water recharge in areas of water scarcity, wetlands creation or improved habitat connectivity, and stormwater mitigation, including green infrastructure or** (iv) improve the

¹⁰⁰ Assistant Secretary for Policy, US Department of Transportation, TIGER 2014: Plan Application Preparation Webinar. http://www.dot.gov/sites/dot.dev/files/docs/TIGER_2014_Planning_Webinar_FINAL.pdf

¹⁰¹ U.S. DOT. <http://www.dot.gov/tiger/application-resources>

¹⁰² U.S. DOT. http://www.dot.gov/sites/dot.gov/files/docs/TIGER%202014%20NOFA_FINAL.pdf

resilience of a transportation asset or the transportation system. Applicants are encouraged to provide quantitative information, including baseline information that demonstrates how the project will reduce energy consumption, stormwater runoff, or achieve other benefits for the environment.

The TIGER selection process weighs all criteria, and applications must be tied to projects considered eligible under all other rules and programs for federal capital grants. Very few previous grantees listed mitigation as a benefit, with most focusing on the environmental benefits of reduced emissions from congestion relief. One example of a project that includes advance mitigation is the Auke Bay Loading Facility in Juneau, AK; it received \$3.64 million in TIGER funding to complete a freight loading facility, including required environmental mitigation.¹⁰³ Another example is the Port of Garibaldi Wharf Revitalization project in Oregon, which was noted for improving environmental habitat in the Tillamook Bay National Estuary.¹⁰⁴ Both projects also stressed economic development as well as environmental benefits.

Secondary Selection Criteria, which are weighed less heavily but also taken into consideration, include:¹⁰⁵

- Innovation: DOT will give priority to projects that use innovative strategies to pursue the long-term outcomes outlined above. Such strategies include innovations in funding and finance that leverage new and existing sources of funding.
- Partnership: DOT will give priority to projects that demonstrate strong collaboration among a broad range of participants and/or integration of transportation with other public service efforts. Such partnerships could include multiple jurisdictions, stakeholder collaboration, or partnerships with non-transportation agencies (e.g. resource agencies).

As already noted, in addition to capital project grants, TIGER also makes available planning grants related to the planning, preparation, or design—including environmental analysis, feasibility studies, and other pre-construction activities—of surface transportation projects. Applications for planning grants are evaluated under the same criteria as enumerated for capital grants. Among the planning activities listed as eligible for TIGER support in the description of the program is:¹⁰⁶

Planning to encourage multiple projects within a common area to engage in programmatic mitigation in order to increase efficiency and improve outcomes for communities and the environment (Sec VI.B).

Federal Environmental and Resources Agency Grant Funding as a Revenue Source

A variety of grants available from the federal government now or in the recent past may offer funding for Caltrans advance mitigation. In addition to currently applicable grant funding opportunities, we identified past grant funding programs which have expired or have been fully spent for which advance mitigation by Caltrans would have probably qualified. We include those even though they are not currently available in order to illustrate the range of possibilities.

¹⁰³ U.S. DOT. http://www.dot.gov/sites/dot.gov/files/docs/Tiger_I_Awards.pdf

¹⁰⁴ U.S. DOT. http://www.dot.gov/sites/dot.gov/files/docs/TIGER_2013_FactSheets.pdf

¹⁰⁵ U.S. DOT. http://www.dot.gov/sites/dot.gov/files/docs/TIGER%202014%20NOFA_FINAL.pdf

¹⁰⁶ U.S. DOT. http://www.dot.gov/sites/dot.gov/files/docs/TIGER%202014%20NOFA_FINAL.pdf

Federal Conservation and Resources Grants

As a general rule, federal government conservation and resource agency grants cannot be used to carry out mitigation required by federal law, unless the use of grants for mitigation is stipulated in statute. Such grants may be an important source of support for advance mitigation where state mitigation requirements exceed those required under federal law or where they are attached to larger conservation or species recovery strategies that, in order to meet local needs, happen to exceed minimum compensatory mitigation requirements under federal law.

Whereas federal transportation funds can be used to support the mitigation of state and local transportation projects drawing on federal funds, federal conservation grants cannot be. The reasons for this distinction are several. First, the majority of federal transportation funding has traditionally come from user fees like the federal motor fuel tax, and federal transportation finance policy has supported the use of such revenues for local projects, including their mitigation. Secondly, the resource agencies that administer conservation grants are regulatory, not implementing, entities. They are charged with enforcing federal laws meant to protect the environment. While regulatory compromises, including mitigation, have been made to allow development under federal environmental laws, federal resources agencies would not fund the required mitigation of activities that ultimately conflict with environmental protection. In addition we found that Federal grants under these programs were often for much smaller amounts of money than are frequently needed to mitigate transportation projects. Still, many federal grants can often *supplement* required mitigation within partnership-driven efforts considering serve larger conservation goals as well as required mitigation. Funds expended on legally required mitigation can be thus valuably leveraged by partners to encourage species recovery beyond the requirements of federal law.

Federal grants also can be used to meet state mitigation requirements that exceed Federal standards. In the next section we review grants from the USFWS under Section 6 of the Endangered Species Act that may support land acquisition to meet restoration requirements under California's Natural Community Conservation Planning (NCCP) program or to complement required mitigation. Some federal grants, such as Wetlands Program Development Grants, can also be used to cover costs associated with advance mitigation programs other than land acquisition, such as comprehensive planning and biological analysis, and on-going management of mitigation lands.

Table 3. USFWS Section 6 Grants¹⁰⁷

Grant Program	Purpose	Species Benefiting	Applicants	Competition	Financial Match Requirement*
Conservation Grants	Implementation of conservation projects	Federally listed threatened or endangered species	States or Territories that have entered into cooperative agreements with the Service for endangered and threatened species conservation	Formula	25% of estimated project cost; or 10% when two or more States or Territories implement a joint project
Recovery Land Acquisition	Acquisition of habitat in support of approved recovery goals or objectives	Federally listed threatened or endangered species	States or Territories that have entered into cooperative agreements with the Service for endangered and threatened species conservation	Regional competition	25% of estimated project cost; or 10% when two or more States or Territories implement a joint project
Habitat Conservation Planning Assistance	Support development of Habitat Conservation Plans (HCPs)	Federally listed threatened or endangered species, proposed and candidate species, and unlisted species proposed to be covered by the HCP	States or Territories that have entered into cooperative agreements with the Service for endangered and threatened species conservation	National competition	25% of estimated project cost; or 10% when two or more States or Territories implement a joint project
Habitat Conservation Plan (HCP) Land Acquisition	Acquisition of land associated with approved HCPs	Federally listed threatened or endangered species, unlisted (including State-listed species), proposed and candidate species covered by the HCP*	States or Territories that have entered into cooperative agreements with the Service for endangered and threatened species conservation	National competition	25% of estimated project cost; or 10% when two or more States or Territories implement a joint project

*As required under Section 6 of the Endangered Species Act, grants to states and territories must include a minimum contribution by the project's non-federal partners. These contributions can be in-kind, through staff time or use of non-federal equipment, or financial assistance.

¹⁰⁷ U.S. Fish and Wildlife Service. <http://www.fws.gov/endangered/grants/grant-programs.html>

USFWS Grants

Section 6 Grants (USFWS)

Under Section 6 of the Federal Endangered Species Act, which established a “Cooperative Endangered Species Conservation Fund,” grants are available to aid non-Federal habitat conservation programs. Section 6 Land Acquisition Grants cannot be used for “compensatory mitigation” under the Endangered Species Act. Compensatory mitigation would consist of acquiring land to directly offset the effects of covered projects. Instead, land acquisition grants must be used to fund acquisition of land that goes beyond direct compensation, either complementing the required mitigation or contributing to species recovery,¹⁰⁸ as might occur with advance mitigation efforts including a “net benefit” feature.

The individual grant programs funded under Section 6 are:

Habitat Conservation Plan (HCP) Land Acquisition Grants (\$14.2 M in 2013)

This program was designed to reduce conflicts between the conservation of listed species and land uses on specific parcels of land. Under this program, the Service provides grants to states for land acquisitions that are associated with approved HCPs. The Service considers the use of federal acquisition dollars by states for habitat protection within and adjacent to HCP areas to be an important and effective mechanism to promote the recovery of threatened and endangered species.

The HCP Land Acquisition program has three primary purposes:

1. to fund land acquisitions that complement, but do not replace, private mitigation responsibilities contained in HCPs;
2. to fund land acquisitions that have important benefits for listed, proposed, and candidate species; and
3. to fund land acquisitions that have important benefits for ecosystems that support listed, proposed and candidate species. (United States Fish and Wildlife Service, 2013).

Habitat Conservation Planning (HCP) Assistance Grants (\$8M in 2013)

Through the development of regional Habitat Conservation Plans (HCPs), local governments incorporate species conservation into local land use planning, which streamlines the project approval process and facilitates economic development. The Habitat Conservation Planning Assistance Grants program makes funding available to states to support the development of HCPs. Planning assistance grants may support planning activities such as document preparation, outreach, and baseline surveys, and inventories. The funding for the Habitat Conservation Planning Assistance Grants is competed for at the national level.

Grants dedicated to HCPs are received by the HCP implementing authority as a whole; therefore they cannot directly fund Caltrans to perform advance mitigation, but can help fund regional HCPs in which Caltrans is a partner. HCP planning grants similarly cannot fund independent advance mitigation programs, but can help further HCP planning efforts in which Caltrans is a stakeholder. For example, the

¹⁰⁸ Such acquisitions are part of the biological plan of many area-wide HCPs, and recovery programs are required under California’s Natural Community Conservation Planning Act (NCCP), which are typically implemented jointly with California HCPs (California Fish and Game Code, Section 2800; Pollack, 2001).

development of the Butte County HCP, led by the Butte County Association of Governments with Caltrans District 3 as a partner, received \$1 million in planning funding from Section 6 in 2012.¹⁰⁹

In addition, to land acquisition and planning grants specifically designated for HCPs, section 6 includes two additional broad categories of conservation grants that are not specific for HCPs, though they also cannot be used for federally required mitigation.¹¹⁰

Conservation Grants (\$10.5 M in 2013)

The Conservation Grants program provides financial assistance to States' projects that conserve listed species and species which are at-risk. Funded activities include habitat restoration, species status surveys, public education, and outreach, captive propagation and reintroduction, nesting surveys, genetic studies, and development of management plans. Project selection is generally conducted by Service Endangered Species staff in conjunction with the States. Funding is allocated by formula to the Service Regions based on the number of species covered in cooperative agreements with the states within that Region. Regional offices further allocate the funding to the states within that Region by formula or through a competitive process.¹¹¹

Recovery Land Acquisition Grants (\$9.4 M in 2013)

Loss of habitat is the primary threat to most listed endangered species, and land acquisition is often the most effective and efficient means of protecting habitats essential for recovery of listed species before development or other land use changes impair or destroy key habitat values. Land acquisition is costly and often neither the USFWS nor the states individually have the necessary resources to acquire habitats essential for recovery of listed species. Recovery Land Acquisition grant funds are matched by states and non-federal entities to acquire these habitats from willing sellers in support of approved species recovery plans.

Other grants programs administered by USFWS are similarly prohibited from using funds for federally required mitigation, but can be used as part of a comprehensive conservation strategy as enumerated in their descriptions. Several additional programs are described in the following short sections.

North American Wetlands Conservation Act Grant Program (USFWS)

The North American Wetlands Conservation Act (NAWCA) of 1989 is administered by USFWS and provides grants to organizations to partner with USFWS for wetlands conservation projects that protect wetlands-associated migratory birds.

The Congressional appropriation to fund the Act's Grants Program in FY 2014 is \$31,175,000, which is supplemented by \$31.5 million from fines and other sources. Grants range from \$75,000 to \$1,000,000. NAWCA is a competitive grant process that requires matching funds from the non-federal partner,¹¹² and as of 2013, each federal dollar has been matched by \$3.20 of local funding on average.¹¹³

¹⁰⁹ U.S. Fish and Wildlife Service. <http://www.fws.gov/endangered/esa-library/pdf/FY12Section6AwardSummariesFinal.pdf>

¹¹⁰ Adams, T. US Fish and Wildlife Service HCP Coordinator. (2014, July 23) Personal communication.

¹¹¹ U.S. Fish and Wildlife Service. http://www.fws.gov/midwest/endangered/grants/S6_grants.html

¹¹² U.S. Fish and Wildlife Service. <http://www.fws.gov/birdhabitat/Grants/NAWCA/index.shtm>

¹¹³ U.S. Sen. David Vitter. <http://www.vitter.senate.gov/newsroom/press/vitters-wetlands-conservation-act-passes-committee>

NAWCA funding cannot be used for either federally required mitigation or planning, but can be used for restoration and enhancement of qualifying lands.¹¹⁴ NAWCA has been used by a partnership including the Washington State Department of Transportation, Washington State Department of Fish and Wildlife and other local partners to fund Wetland Restoration of the Lower Dungeness associated with highway expansion.¹¹⁵

National Coastal Wetlands Conservation Grant Program¹¹⁶ (USFWS)

The National Coastal Wetlands Conservation Grant Program (NCWCGP) was established under the Coastal Wetlands Planning, Protection, and Restoration Act.¹¹⁷ The program is funded through excise taxes on fishing equipment and motorboat and small engine fuels.¹¹⁸ The program dispenses funding to coastal states and appointed state agencies to acquire, restore, and enhance wetlands in through competitive matching grants. According to FWS:

States provide 50 percent of the total costs of a project. If, however, the State has established and maintains a special fund for acquiring coastal wetlands, other natural areas or opens spaces, the Federal share can be increased to 75 percent. Grants awarded under the National Coastal Wetlands Conservation Grant Program cannot exceed \$1 million for an individual project.¹¹⁹

To date, about \$183 million in grant monies have been awarded to 25 coastal states and one U.S. Territory for projects that cover over 250,000 acres of coastal wetland ecosystems. In 2013, the program offered \$20 million in grants to 24 critical coastal wetland projects in 13 states, with an additional \$21.3 million in matching funds provided by partner contributions from state and local governments, private landowners and conservation groups.¹²⁰

Other Grants from Environmental and Resources Agencies

Wetlands Program Development Grants¹²¹ (EPA)

Under the Wetland Program Development Grants (WPDGs), initiated in 1990, the EPA administers grants under Section 104(b) (3) to help states and local governments protect and improve wetlands. In order for Caltrans to be eligible, it would have to seek funding through the state California Wetlands Program Plan, which is the recipient of the EPA funds.¹²² While WPDGs can continue to be used by recipients to build and refine any element of a comprehensive wetland program, priority will be given to funding projects that address the three priority areas identified by the EPA: Developing a comprehensive monitoring and assessment program; improving the effectiveness of compensatory mitigation; and refining the protection of vulnerable wetlands and aquatic resources.

¹¹⁴ Lacy Alison, 7.12.14 interview

¹¹⁵ Washington Department of Fish and Wildlife. <http://wdfw.wa.gov/publications/01121/wdfw01121.pdf>

¹¹⁶ Contact person: Christy Kuczak, Grant Management Specialist, Tel. (703)358-1748, christy_kuczak@fws.gov

¹¹⁷ (Section 305, Title III, Public Law 101-646, 16 U.S.C. 3954).

¹¹⁸ U.S. Fish and Wildlife Service. <http://www.fws.gov/coastal/CoastalGrants/>

¹¹⁹ U.S. Fish and Wildlife Service. <http://www.fws.gov/coastal/CoastalGrants/>

¹²⁰ U.S. Fish and Wildlife Service. <http://www.fws.gov/coastal/CoastalGrants/>

¹²¹ U.S. EPA. Wetlands Program Development Grants.

http://water.epa.gov/grants_funding/wetlands/grantguidelines/index.cfm

¹²² Leana Rosetti, Wetlands Office, EPA Region 9. (2014, July 20) Interview.

Under statute, these grants cannot fund mitigation that is required, but can provide funding for other aspects of larger-scale conservation programs. It is also possible that funding could be used for planning and design of an advance mitigation pilot program, depending on the specifics of the situation. For example, one state agency is using WPDG funding for the planning of an in-lieu fee program. Funds can also be used to identify suitable mitigation land.¹²³

In order to increase competitiveness for WPDG grants, the EPA advises that Caltrans coordinate with California's Wetland Program plan under the EPA and integrate its conservation efforts with the Program's goals. The California Wetlands Program Plan is a partnership between the California Department of Fish and Wildlife, the State Water Resources Board, the Sacramento-San Joaquin Delta Conservancy, and the California Coastal Conservancy.¹²⁴

Land and Water Conservation Fund¹²⁵ (Department of Interior)

The Land and Water Conservation Fund (LWCF) is a federal grant program administered by Department of the Interior's Recreation and Conservation Funding Board. The LWCF is authorized by Congress at \$900 million annually,¹²⁶ funded by offshore drilling royalty fees paid by private companies.¹²⁷ A percentage of funding is passed through to state parks departments to set aside land in perpetuity for outdoor recreation areas through a grant program. The program is LCWF grants require matching and cannot fund more than 50% of the Total Project Costs.¹²⁸ The program, like most federal resource grant programs, does not fund compensatory mitigation activities, but it does allow a grant recipient to use its own mitigation funding as the qualified match required to access this federal grant funding.¹²⁹

While Caltrans would not be directly eligible, California Public Resources Code §5099.12 specifies the eligibility of a "Joint Powers Authority" (JPA) in which all members are public agencies. A JPA can include a state agency if at least one member is a local (non-state) public agency or district formed for the purpose of providing park and recreation areas."¹³⁰ By partnering with other agencies in a JPA, Caltrans can also address land-holding restrictions that have frustrated previous internal Caltrans advanced mitigation efforts. The program also allows funding for conservation that is complementary to federal land acquisition.¹³¹

¹²³ Leana Rosetti, Wetlands Office, EPA Region 9. (2014, July 20) Interview.

¹²⁴ U.S. EPA. <http://water.epa.gov/type/wetlands/upload/california-wpp.pdf>

¹²⁵ California Department of Parks and Recreation. http://www.parks.ca.gov/?Page_id=21360

¹²⁶ Land and Water Conservation Fund (LWCF). <http://lwcfcoalition.org/>

¹²⁷ Washington State Recreation and Conservation Funding Board.

http://www.rco.wa.gov/documents/manuals&forms/Manual_15-LWCF.pdf

¹²⁸ California Department of Parks and Recreation. http://www.parks.ca.gov/?Page_id=21360

¹²⁹ Washington State Recreation and Conservation Funding Board.

http://www.rco.wa.gov/documents/manuals&forms/Manual_15-LWCF.pdf

¹³⁰ California Department of Parks and Recreation

http://www.parks.ca.gov/pages/1008/files/final%20lwcf%20app%20guide%20state%20agencies%2012.10.13_2.pdf

¹³¹ National Park Service. [Land and Water Conservation Fund. http://www.nps.gov/lwcf/](http://www.nps.gov/lwcf/)

Conclusion

In general, currently existing grant programs at both the state and federal level will not in themselves meet the needs of Caltrans in establishing an agency-wide advance mitigation program. Our study concludes that there are no currently available, unsubscribed funding sources which are unequivocally and exclusively available to support the legally required mitigation Caltrans needs to deliver. Instead, grants available from existing programs are often small in relation to the needs of transportation programs, and limited availability causes competition for these funds to be vigorous. That is one reason, among many, that we highlight the concept of partnerships as central to our findings. Further, while many sources have limited application to legally required compensatory mitigation activities, they could be quite useful for supporting larger conservation programs in which Caltrans participates along with other partners and in which compensatory mitigation activities play a significant but not exclusive role.

In the short term, we recommend that applications for such funds be pursued to complement the budgets of advance mitigation projects undertaken by partnerships between Caltrans and local governments in the state. When funds are sought to “leverage” commitments already made by Caltrans and counties, the applications under these state and federal programs can often be made more competitive.

Additionally, we observe that the frequency with which California voters have approved propositions providing dedicated revenue streams for conservation suggests possible future opportunities for Caltrans to seek funding for advance mitigation. For example, Proposition 1 (the “Water Quality, Supply, and Infrastructure Improvement Act of 2014”) will be on the ballot in November 2014. If passed, it would allow issuance of over \$7.12 billion, including \$1.495 billion for competitive grants for ecosystem and watershed protection and restoration projects.¹³²

¹³² Ballotpedia. [http://ballotpedia.org/California_Proposition_1,_Water_Bond_\(2014\)](http://ballotpedia.org/California_Proposition_1,_Water_Bond_(2014))

4. Promising Finance Programs for Advance Mitigation

This report has noted the absence of a dedicated revenue stream to support advance planning and implementation of Caltrans' legally required mitigation activities. In the same way that potential grant sources discussed in the previous chapter will be important to crafting advance mitigation efforts, financing will also be critical to the success of advance mitigation, helping Caltrans to generate up front capital to undertake required mitigation in advance.

Potential sources of funds discussed in the preceding section are not sufficient to bring about the desired results. Because revenues will accrue in uneven steams over time but large expenditures may be needed in the short term to acquire land and for other major capital expenditures, financing also will be needed. Loans, lines of credit, loan guarantees and similar financial tools can provide the dollars needed early to make advance mitigation feasible. These tools create stability and predictability that is needed to proceed with advance mitigation.

There are today only a few financing options available, and they are discussed in this chapter. The financing mechanisms presented would allow Caltrans itself, and organizations created by the partnerships into which it enters, to borrow against funding to be received from diverse sources to achieve advance mitigation. There are federal financing programs that would allow Caltrans to borrow against future funding and thus to shift access to mitigation funding forward in a project timeline. They are reviewed following a discussion of the California State Infrastructure and Economic Development Bank, which is funded at the state level to provide loans to local infrastructure projects. Caltrans is directly eligible for loans from the infrastructure bank and it can partner with local agencies and JPAs, which also are eligible to receive loans. The nature of eligibility for financing further underscores the importance of partnerships to Caltrans, which will most likely achieve advance mitigation through partnerships in funding, financing, and implementation of mitigation strategies.

The programs outlined here have been tapped more commonly to support transportation projects themselves than the mitigation of impacts from those projects. That said, our research establishes that mitigation is indeed an eligible expenditure for these financing opportunities. Thus, while some financing sources covered here are untested sources of borrowed funds for mitigation investment, we conclude they are worthy of Caltrans' attention.

State Infrastructure Banks

California has both a federal State Infrastructure Bank (SIB) and a State Infrastructure and Economic Development Bank. Both are possible avenues to financing advance mitigation programs related to transportation, as infrastructure projects are specifically named as qualified loan applicants along with other economic development programs that would include transportation infrastructure. The state bank further specifies that environmental mitigation measures qualify for loans.

The California Federal SIB

The federally seeded SIB was established under a 1995 pilot program and is currently inactive. The federally sponsored bank is not seen as a promising avenue in its current form for participation in advance mitigation. It has provided only two loans for transportation projects, both of which were loans made to local agencies through Caltrans; were small in size, under a million dollars each; and were for capital improvements and did not emphasize mitigation.

While we conclude the federally sponsored bank is not currently a viable financing vehicle for advance mitigation efforts, it could be in the future, if it were further capitalized using other state or federal funds, and if its mission were expanded to enable it to become a more active player. It has been suggested, for example, that the SIB might borrow Cap-and-Trade revenues and repay them over time with interest so that they may be applied to the purposes for which they are intended by statute. If it is not further capitalized, the federal SIB is unlikely to play a significant role in the future expansion of advance mitigation. While this bank is not likely to be a meaningful source of finance in the short term, its future of this bank is highly uncertain and should be monitored.

California I-Bank

The State Infrastructure and Economic Development Bank (I-Bank) was developed in 1994 with an initial capitalization of \$50 million appropriated from the state's general fund. It received another appropriation of \$425 million two years later, and is currently self-funding.¹³³ The I-Bank has five separate programs that provide direct loans and bonds to a variety of borrowers, including the Infrastructure State Revolving Fund (ISRF).¹³⁴

The Infrastructure State Revolving Fund Program provides direct low-cost loans for public infrastructure. The program provides financing to public agencies for a wide variety of infrastructure projects. ISRF Program funding is available in amounts ranging from \$50,000 to \$25,000,000, with loan terms of up to 30 years. Interest rates are set on a monthly basis.¹³⁵ The ISRF has made investments valued over \$443 million and has lent to 99 projects since its creation.¹³⁶ Eligible applicants "... may be any subdivision of a local or state government, including departments, agencies, commissions, cities, counties, non-profit corporations formed on behalf of an applicant, special districts, assessment districts, and joint powers authorities within the state or any combination of these subdivisions,"¹³⁷ which could emerge from partnerships between Caltrans and local bodies to facilitate advance mitigation, or from Caltrans working on its own initiative.

It is authorized to make loans in 16 statutorily designated categories, including environmental mitigation measures and many transportation activities directly relevant to the work of Caltrans and its regional and local partners, including improvements to state and county highways and local streets.¹³⁸ The I-Bank guidelines define as "environmental mitigation measures" eligible for loans the "required

¹³³ Puentes, Robert, and Jennifer Thompson. "Banking on Infrastructure: Enhancing State Revolving Funds for Transportation." (2012) In 2001 and 2002, nearly \$300 million was swept back into the General Fund due to changing economic conditions, leaving the I-Bank with a net appropriation of just over \$181 million.

¹³⁴ Puentes, Robert, and Jennifer Thompson. "Banking on Infrastructure: Enhancing State Revolving Funds for Transportation." (2012)

¹³⁵ California Infrastructure and Economic Development Bank.

http://ibank.ca.gov/infrastructure_loans.htm

¹³⁶ Puentes, Robert, and Jennifer Thompson. "Banking on Infrastructure: Enhancing State Revolving Funds for Transportation." (2012)

¹³⁷ California Infrastructure and Economic Development Bank.

<http://www.ibank.ca.gov/res/docs/pdfs/ISRF%20Criteria%20Priorities%20and%20Guidelines%20-%20Adopted%2010-29-13.pdf>

¹³⁸ The Brandeis Project. "California Infrastructure and Economic Development Bank."

<http://www.brandeisproject.org/alice/toolkits/I-Bank-Overview-01-21-09.pdf>. (1) city streets; (2) county highways; (3) drainage, water supply and flood control; (4) educational facilities; (5) environmental mitigation measures; (6) parks and recreational facilities; (7) port facilities; (8) power and communications; (9) public transit; (10) sewage collection and treatment; (11) solid waste collection and disposal; (12) water treatment and distribution; (13) defense conversion; (14) public safety facilities; (15) state highways; and (16) military infrastructure.

construction or modification of public infrastructure and purchase and installation of pollution control and noise abatement equipment.”¹³⁹ No loans have been officially granted under this category, although according to interviews with staff members, none have been applied for, and advanced mitigation projects would be eligible.¹⁴⁰ Loans made in other categories supported projects with environmental mitigation components. For instance, the Santa Maria Airport and the North Tahoe Fire Protection District projects described below included funding for environmental mitigation though that was not the primary purpose of the projects.¹⁴¹

The ISRF is a promising source for financing advance mitigation, and it is currently underutilized while being well funded.¹⁴² Representatives whom we interviewed did not see any barriers to Caltrans using the ISRF to finance advance mitigation. Careful reading of the ISRF Criteria Priorities and Guidelines lead us to note two possible caveats. First, applications are generally written to stress the economic development potential of a project in addition to other aspects. Second, all permits are required to have been issued before applications are accepted, though planned mitigation can be implemented after permit issuance. The latter requirement could slow the issuance of loans, as an advance mitigation project would still need to fund and execute the planning, environmental, design and permitting phases of project development. Still, it should not prevent them.

The text box below highlights examples of projects funded by the ISRF that include precisely the kinds of mitigation activities that Caltrans and its partners typically confront with road projects. While advance mitigation is not the primary purpose of these loans, its inclusion as an element of local infrastructure projects suggests that the ISRF is a promising avenue for Caltrans to finance advance mitigation.

Illustrative Projects Funded by the ISRF
<p><i>North Tahoe Fire Protection District:</i> In 2009, the North Tahoe Fire Protection District was granted a \$10 million loan over 30 years to build a new fire station. The project incorporated the purchase of mitigation credits for wetland conservation under a U.S. Army Corps of Engineers Section 404 permit. While the loan was not directly given to fund the purchase of mitigation credits, they were part of the overall effort benefitting from the loan package.¹⁴³</p>
<p><i>The City of Sacramento Department of Utilities:</i>¹⁴⁴ The city of Sacramento was granted a \$4,000,000 loan to help with the construction of a detention basin to reduce flooding. The project included the relocation of wetlands and a Section 404 permit.</p>
<p><i>Santa Maria Airport Project:</i> The Santa Maria Public Airport District was granted a \$6.84 million loan for the construction of the 1,095-acre Santa Maria Research Park, including a significant mitigation element.¹⁴⁵ The research park complex includes new roadways, storm water collection and retardation systems, landfill closure, utility corridors, preservation of environmentally sensitive areas. The project includes significant roadway construction, including a road to access the site, and</p>

¹³⁹ California Infrastructure and Economic Development Bank (Ibank). <http://ibank.ca.gov/res/docs/pdfs/ISRF%20Criteria%20Priorities%20and%20Guidelines%20-%20Adopted%2010-29-13.pdf>

¹⁴⁰ Interview, 5.18.14 Diane Cummings,

¹⁴¹ California Infrastructure and Economic Development Bank (Ibank).

<http://www.ibank.ca.gov/isrfmapandsearch.htm>

¹⁴² Interview, 5.18.14 Diane Cummings,

¹⁴³ Application IB-08-250. Interviews.

¹⁴⁴ Loan application 05-0185

¹⁴⁵ Though the loan was granted, the project was halted on other grounds and the request was officially withdrawn.

enhancements to other access roads. The environmental component of the plan included significant wetland and habitat mitigation:¹⁴⁶

The Santa Maria City Council re-certified the Final Environmental Impact Report for the Santa Maria Research Park on October 20, 1998. The total open space within the project site is about 555 acres. Other open space areas include the proposed golf course, existing Pioneer Park, a biological preserve, and a large grove of eucalyptus trees. The golf course will occupy about 268 acres and surrounds a 10-acre biological preserve. In addition to providing recreational opportunities, the golf course will serve as a conservation and water recharge venue. The biological preserve includes areas of dune chaparral, riparian vegetation and a vernal pool. There are also acres of eucalyptus trees being preserved as part of the open space buffer in the southern part of the project area. ...The environmental benefits include conservation of existing potable water sources, recharge of the aquifer, and opportunity for the development of artificial wetland and habitat development/restoration. An interpretive trail is planned to educate visitors on the importance and many use of reclaimed water. Grading and capping will prevent infiltration of rainwater and degradation of the groundwater at the other disposal site. Native revegetation is also planned for this site.

Federal Loan Programs

Transportation Infrastructure Finance and Innovation Act (TIFIA)

The TIFIA program (23 USC 601-609) is well known to transportation officials because it provides federal credit assistance to nationally and regionally significant surface transportation projects. The program was originally intended to complement other state and federal program funds and, in some cases, to leverage substantial private co-investment by providing projects with supplemental or subordinate debt. The program is flexible and applications that differ substantially from one another have been approved. Over time, the shortage of capital investment funds in transportation has made TIFIA increasingly central to major investment programs, and Congress has increased funding available under the program.

Qualified projects are evaluated by the U.S. Secretary of Transportation and selected in competition with others based on the extent to which they are forecast to generate economic benefits, leverage private capital, promote innovative technologies, and meet other program objectives.

Caltrans should consider including expenditures on advance mitigation in its TIFIA applications where appropriate. Although TIFIA has not yet supported such efforts, doing so is clearly not prohibited by program rules. And, very importantly, amendments to TIFIA, proposed by a California Senator and discussed further below, would make advance mitigation explicitly an eligible expense under TIFIA. TIFIA may also facilitate advance mitigation by supporting other elements of projects that are subject to advance mitigation requirements, thereby freeing state resources for those efforts.

The TIFIA credit program consists of three types of financial assistance, designed to address requirements throughout a project's life cycle:¹⁴⁷

- *Secured loans* are direct federal loans to project sponsors offering flexible repayment terms.
- *Loan guarantees* provide full-faith-and-credit guarantees by the federal government to institutional investors, such as pension funds, that make loans for projects.

¹⁴⁶ As well as significant waste water treatment facilities, which we do not include in the description here.

¹⁴⁷ FHWA. <https://www.fhwa.dot.gov/safetealu/factsheets/tifia.htm>

- *Lines of credit* are contingent sources of funding in the form of federal loans that may be drawn upon to supplement project revenues, if needed, during the first 10 years of project operations.

Any project eligible for federal assistance through surface transportation programs under Title 23 or chapter 53 of Title 49, USC (highway projects and transit capital projects) is eligible for the TIFIA credit program. In addition, eligibility is specifically extended to international bridges and tunnels as well as inter-city passenger bus and rail facilities and vehicles (including Amtrak and magnetic levitation systems). Freight projects may combine private and public sector funds in private sector facility improvement.

Each project must meet objectively measurable thresholds to qualify. A project must be consistent with the state's Long Range Transportation Plan and be included in the transportation improvement program, and cost at least \$50 million. For intelligent transportation system projects, the minimum cost is \$15 million. Freight projects with a common objective of improving the flow of goods may be combined to meet project thresholds.

The total amount of TIFIA credit assistance may not exceed 33% of eligible project costs. The TIFIA credit instrument must be supported in whole or in part from user charges, such as motor fuel taxes or tolls, or other dedicated non-federal funding sources, such as the proceeds of local sales tax measures, that also secure the project obligations. Credit assistance must be repaid within 35 years after the project's substantial completion.

Because there is no explicit language about habitat preservation in the TIFIA authorizing legislation, members of the U.S. Senate (S. 826; 112th Congress) and House of Representatives (HR1907: 112th Congress) have during the past two years proposed legislative changes that would make land acquisition and management to comply with provisions of the Endangered Species Act eligible for support under the TIFIA program. The proposed amendment would have included as eligible for TIFIA funding any "project for the acquisition of plant and wildlife habitat pursuant to a conservation plan that (i) has been approved by the Secretary of the Interior pursuant to Section 10 of the Endangered Species Act of 1973 (16 U.S.C. 1539); and (ii) in the judgment of the Secretary, would mitigate the environmental impacts of transportation infrastructure projects otherwise eligible for assistance under [the program],"¹⁴⁸ suggesting that habitat acquisitions could be pursued as stand-alone projects.

This proposal originated in California and was introduced in the Senate by Senator Barbara Boxer. While considered by both the House and Senate, these provisions remain proposals that have not been enacted into law. Since prior projects funded under TIFIA have included the costs of project-specific environmental mitigation and advance mitigation contributes to other stated goals of the TIFIA program, including economic development, Caltrans could approach TIFIA staff for discussions of the role of the TIFIA program in future advance mitigation project funding.

Water Infrastructure Finance and Innovation Authority (WIFIA)

President Obama on June 10, 2014 signed into law the Water Resources Reform and Development Act (WRDA), which was enacted by overwhelmingly large majorities in both houses of Congress despite the political divisions that seem to characterize many of their recent actions.¹⁴⁹ As of the

¹⁴⁸ S. 2322 - MAP-21 Reauthorization Act, Section 2001(a)(2)(F), "[Transportation Infrastructure Finance and Innovation Act of 1998 amendments](https://www.congress.gov/bill/113th-congress/senate-bill/2322)," <https://www.congress.gov/bill/113th-congress/senate-bill/2322>.

¹⁴⁹ This law was discussed earlier in the report on Task 2 when it was still being considered by Congress and some of the terms were revised prior to its enactment.

date of this report, it is in the process of being implemented, and incorporates several measures that would appear to establish and/or fund programs that might finance advance mitigation projects related to transportation, especially where they affect waterways and other water resources. Port and bridge projects that impact navigable waterways would be especially appropriate for funding under this program as might be advance mitigation of environmental impacts of such projects. Funding application guidelines are not yet published by the relevant agencies and should be consulted when they become available.

One section reauthorizes the previously existing wastewater state revolving loan fund program and expands the types of projects the SRF may fund. Another section of the bill establishes WIFIA, a program specifically designed to imitate the TIFIA program that is of course more familiar to transportation agencies. This provision is intended to establish a five-year WIFIA pilot program. As agreed to by House and Senate conferees, the bill establishes WIFIA as a low-interest loan program administered by EPA, with a parallel program administered by the Corps of Engineers for flood control projects.

The EPA program is intended to support water and wastewater-related infrastructure projects, including pipe replacement or rehabilitation, construction or rehabilitation of treatment plants, desalination projects, groundwater replenishment projects, energy efficiency improvements, and others. These could include projects associated with highway or rail system expansion. The Army Corps of Engineers is authorized to carry out projects for flood damage reduction, environmental restoration, coastal or inland harbor navigation improvement, and inland and intracoastal waterways navigation improvement. The Environmental Protection Agency is authorized to carry out projects that are eligible for assistance under the Federal Water Pollution Control Act or the Safe Drinking Water Act in addition to projects that enhance energy efficiency or that repair, rehabilitate or replace public water systems or publicly owned treatment works.

Amounts appropriated for WIFIA financing assistance are allocated jointly to the Corps of Engineers and the EPA, with subsequent implementing regulations to clarify the specific amounts to be made available to each agency and to address eligibility criteria and application processes in more detail than specified in the recent legislation. Transportation agencies may be eligible to apply for funding, perhaps jointly with other agencies, when projects require substantial investments in groundwater recharge, construction of facilities related to runoff from transportation facilities, and so on. The law does specify that the program is aimed at larger projects costing at least \$20 million, though the threshold is \$5 million for communities serving no more than 25,000 people.

The WIFIA program will provide loan guarantees and direct loans at long-term Treasury rates. Projects must be deemed creditworthy, with loans repayable from a dedicated revenue source within 35 years of substantial project completion. Language in the bill¹⁵⁰ states that, among “projects” eligible for support under the bill, is the

(7) Acquisition of real property or an interest in real property—A) if the acquisition is integral to a project described in paragraphs (1) through (6) [defining other WIFIA eligible projects]; or (B) pursuant to an existing plan that, in the judgment of the Administrator or the Secretary, as applicable, would mitigate the environmental impacts of water resources infrastructure projects otherwise eligible for assistance under this section.

¹⁵⁰ H.R.3080 - Water Resources Reform and Development Act of 2014. See: “Subtitle C: Innovative Financing Pilot Projects - Water Infrastructure Finance and Innovation Act of 2014,” specifically Sections 5026 and 5027. <https://www.congress.gov/bill/113th-congress/house-bill/3080>

Further identified among “activities” eligible for WIFIA support is

“the acquisition of real property or an interest in real property (including water rights, land relating to the project, and improvements to land), environmental mitigation (including acquisitions pursuant to section 5026(7)), construction contingencies, and acquisition of equipment.”

While the eligibility of transportation advance mitigation programs is not yet clearly delineated, the size of the program is substantial and thus is worth tracking. It authorizes \$20 million in the first year, which should support at least \$200 million in loan guarantees or low-interest loans. The authorization level rises to \$50 million in year five, which should support up to \$1.65 billion in assistance, according to the Office of Management and Budget. Appropriated funds achieve this significant leverage because they only have to cover the risk of WIFIA project defaults, and the history of default in water projects is insignificant.¹⁵¹

GARVEEs, GANs, and Private Activity Bonds

Under federal transportation programs, it is possible to borrow money so that a state may proceed with a project in anticipation of the later receipt of federal funds for which the project is eligible. Interest must be paid in addition to the principal, but there often are benefits associated with building projects earlier that justify such borrowing.

Perhaps the best known instrument of this sort is the GARVEE (Grant Anticipation Revenue Vehicle) which consists of securities (debt instruments) issued when moneys are anticipated from expected federal-aid grants for highways. More specifically, a GARVEE is a debt instrument that has a pledge of future Title 23 federal-aid funding. In a time of limited access to capital, GARVEES enable a state to accelerate land acquisition and construction.

Transit agencies use similar mechanisms to borrow against future federal-aid funds (Federal Transit Administration Title 49 grants) that are allocated by formula (Section 5307) or by project (Section 5309). The transit debt mechanisms are known as Grant Anticipation Notes (GANs), and they differ from GARVEES in several ways. They utilize federal-aid funding under Title 49 rather than Title 23, and explicitly do not include debt-related financing costs such as interest and issuance costs.

In order to make such projects easier to finance, Section 11143 of Title XI of SAFETEA-LU amended Section 142 of the Internal Revenue Code to add highway and freight transfer facilities to the types of privately developed and operated projects for which private activity bonds (PABs) may be issued. This change remains in place under MAP-21 and its recent extensions. Current law limits the total amount of such bonds to \$15 billion, and as of June 2014, some \$4.6 billion in debt has been issued for 12 transportation projects, and another eight projects were in various stages of planning. While GARVEES are made available at attractive interest rates presently around 2.5% and financing is presently available for periods up to 12 years, a project must be included in a federally approved STIP to be eligible to qualify for his type of financing.

These sources of financing have not been used for advance mitigation. The contribution of a specific project to an advanced mitigation program is more likely eligible for GARVEE financing than is

¹⁵¹ American Waterworks Association. <http://www.awwa.org/legislation-regulation/issues/infrastructure-financing.aspx>

an advance mitigation program itself. However, the practices cited here are subject to amendment in new federal transportation legislation which should be monitored and which could be shaped by the California delegation to be responsive to statewide planning of advance mitigation.¹⁵²

We suggest that a useful path to exploring their applicability to advance mitigation would be in collaboration with other states through the AASHTO Center of Excellence in Project Finance, the staff of which expressed interest in collaboration with respect to this possibility.¹⁵³

Conclusion

This study confirmed the initial expectations of the research team that, in addition finding new sources of revenue, finance mechanisms would be an important addition to the toolbox that could promote the expansion of advance mitigation. For example, we were told by local HCP and county transportation commission staff members that during the recent economic downturn, land became increasingly available for purchase at favorable prices just as agency budgets became constrained because revenues from LOSTs and from local impact fees also declined at the same time. Had opportunities been available when land prices were low to borrow money that could be repaid over time from projected revenues, advance mitigation programs could have benefitted from low land prices that do result from economic cycles. The research team identified several federal and state sources of financing that are potential but not proven resources for advance mitigation. Because HCPs and county transportation commissions that administer LOSTS are among the partnerships that Caltrans has joined and will continue to enter as it expands its involvement in advance mitigation, access by such partnerships to financing programs is extremely important. The fact that the research found some promising avenues for financing, but that they are largely untested with respect to advance mitigation indicates the importance of Caltrans' continuing involvement in the development of future policies and options for such financing at the Federal and state levels.

¹⁵² Personal communication with Weijan Ni, Caltrans Office of Innovative Finance, July 7, 2014.

¹⁵³ AASHTO Center of Excellence in Project Finance. <http://www.transportation-finance.org/>

5. Conclusion

Caltrans has been exploring advance mitigation as a promising path to increasing the cost-efficiency and ecological effectiveness of the state's mitigation investments and to improving project delivery, outcomes serving the overall interest of the Department and of the residents of California. The reports of Tasks 2 and 3 of this project demonstrated that a well-conceived approach can facilitate the achievement of advanced mitigation while also addressing attendant risks. Concentrating on the Department's core mission of improving mobility in California and recognizing that financial resources are increasingly constrained and likely to be for some time, the value of advance mitigation is threefold. If pursued thoughtfully advance landscape-level mitigation can contribute to 1) improving effectiveness in environmental protection; 2) reducing the time needed to achieve mitigation of transportation projects as required by federal and state laws; and 3) reducing long-term costs of fulfilling the Department's environmental obligations. As stated earlier, the essence of public policy is to be found in its financial and fiscal provisions, and advance mitigation will succeed or fail in California mostly because of how it is funded and financed.

If advance mitigation is to become part of mainstream California policy and central to Caltrans programs, this research has shown that substantial amounts of stable and flexible funding will be required, and that expenditure of funds must be enabled far in advance of the underlying transportation projects they would mitigate. Substantial amounts of funding are needed because large tracts of environmentally sensitive land will need to be purchased over many years. Stability is critical because advance mitigation inherently takes decades to implement and requires early commitments that will have to be fulfilled over decades, including providing for ongoing costs of maintenance and renewal of land. Flexibility is needed because each project has unique requirements reflecting its particular mix of transportation objectives and its particular mix of natural, social, and economic contexts. The many local, federal, and state programs explored in Chapters 3 and 4 were found to be helpful, but to align only partially with Caltrans' needs. Often their specific statutory and regulatory requirements meant they lacked stability over time or lacked flexibility to accommodate the particular needs of transportation projects.

Advance mitigation is a new concept and it is not surprising to learn that few existing state or federal funding programs are well matched to its requirements. California is unique among the 50 states in having pioneered LOSTs for the support of transportation infrastructure, and it is encouraging that counties are gradually starting to include advance mitigation components when they use LOSTs to address their transportation needs. In the short term, Caltrans can and should expand its partnerships with self-help counties for many reasons, and in doing so it will gain valuable experience in the planning and implementation of landscape level mitigation at the regional scale. In working with counties on sales tax measures, the Department will encounter a variety of new opportunities for partnerships, including with HCP implementing agencies and other environmentally-focused JPAs. These partners could work with state and federal resources agencies and with Caltrans to obtain funding from sources enumerated in Chapter 3 and employ financing mechanisms outlined in Chapter 4.

Partnering with counties is expedient in the short run because it will both accomplish advance mitigation where it is very much needed and will provide a base of experience on which to build additional relationships in the future. Yet, partnerships with counties are not sufficient to address the full range of issues facing Caltrans if it wishes to more actively promote advance mitigation. In the short run the funding and financing programs reviewed in this report will be helpful for the implementation of advance mitigation in association with particular projects and will be pursued on an ad hoc basis as suggested by characteristics of those projects. For example, projects involving wetlands may apply for funds from federal programs different from those pursued by projects where no hydrologic features are present. Partnerships with the state resources agencies are also important in the pursuit of funding under

these programs. As Caltrans own existing efforts to establish resource agency liaison positions and the SAMI initiative demonstrate, the development of partnerships takes a substantial investment of staff time and resources over many years.

Yet, the foregoing analysis also suggests that California would be well served in the long term by a large-scale statewide program that would itself fund advance mitigation for the benefit of the state and would also be a basis for leveraging contributions from partners such as federal resources agencies, local governments, or non-profit organizations like land trusts to extend the impact of mitigation-driven partnerships. Combining resources may allow an advance mitigation initiative to address enhancements beyond the legally required mitigation and thereby achieve economies of scale. Such funding for a large-scale statewide program will undoubtedly require new financial instruments on a substantial scale.

To move toward that objective, consideration should be given to the potential for designating some of the revenue received from transportation user fees including motor fuel taxes to a statewide Caltrans advance mitigation program, but this would be institutionally challenging and perhaps would require great effort in order to achieve limited returns. There is such vigorous competition for these revenues and the revenues themselves are shrinking in real terms due to inflation, improved fuel economy, and declining volumes of travel. It might be possible to incorporate funding specifically designated for a transportation advance mitigation program into planning for new revenue sources for California transportation, such as increased vehicle registration fees, mileage based user fees, and toll revenue programs. Such innovations will undoubtedly require that new state legislation be enacted.

While consideration of these possibilities is necessarily speculative, there is no reason to limit consideration to transportation user-based fees. Because statewide benefits would accrue from advance mitigation and since many projects in addition to transportation infrastructure would also benefit from it, general fund contributions could be justified for an advanced mitigation program, a statewide bond measure could be put before the voters to create an advance mitigation fund as part of a larger state environmental initiative, or substantial amounts of future Cap-and-Trade revenues could be used for that purpose. While the research team sees value in these possibilities, it is beyond the scope of this project to evaluate them in detail. Eventually political considerations and public acceptability will determine the directions that emerge from early investigations.

When considering statewide funding and financing initiatives, it would be important to incorporate knowledge and experience gained from experiments in other states. In our earlier report on Task 2 of this study we reported on the passage in the state of Washington of a bill in 1997 that provided direct appropriations of \$10 million in state general funds to create the Advanced Environmental Mitigation Revolving Account (AEMRA). Despite the existence of this program, experience in Washington has indicated that most transportation projects have not applied for funds under this program, and there is little documentation regarding projects that have employed this source of funding. Similarly, in a program just getting underway, the Florida DOT has reserved a small allocation of annual funding (\$5 million per year) beginning in FY 2015 to support a new advanced mitigation effort, designed “for purchase of advanced mitigation of wetlands and other surface water impacts and species impacts of transportation projects and for ecosystem or environmental management projects.” The Florida program “is intended to provide funds to take advantage of mitigation opportunities in areas of the state where mitigation options are quickly disappearing or will become cost-prohibitive due to urbanization, uniqueness or competitive factors” (Work Program Instructions, Part III, Chapter 11, p. 5). It would be useful and informative for Caltrans, the State Transportation Agency, and California legislative staff to meet with and share information with those who have been implementing these programs or to share information about them through AASHTO or the TRB. We regard these prior experiments to be worthy of continuing attention from Caltrans and other state agencies as planning for advance mitigation continues over the coming years.

Appendix A: Local Option Sales Tax Measures History and Background

Sales tax measures have been used to fund public benefit projects for over a century, most enacted by statute. In 1978, that changed when Proposition 13 required local governments imposing taxes to obtain voter approval. Specifically, “special” taxes, taxes used for a specific purpose, needed a two-thirds super-majority (66.67%) of the vote.¹ Litigation ensued (City and County of San Francisco vs. Farrell) that defined a special tax.² In 1986, Proposition 62 established new requirements for general taxes, including a super-majority vote by the local agency’s governing body and a majority of the voters; and established requirements for informing voters of the revenue collection method and proposed revenue use. The proposition failed to clarify ramifications for transportation sales measures.³ Further litigation ensued (Santa Clara County Transportation Authority vs. Guardino) with petitioners arguing Santa Clara’s Measure A was approved by less than two-thirds super-majority.⁴ In 1996, Proposition 218 amended the state constitution requiring a two-thirds supermajority vote for special taxes, which applies to transportation sales taxes.^{5 6}

Because of the two-thirds super-majority voting requirement, transportation agencies have had increasing difficulty obtaining enactment of measures to fund their programs. However in 2000, Proposition 39 was proposed to make constitutional amendments to modify the voting requirement for certain types of school bonds to a super-majority of only 55%, making school finance through votes of the citizenry a bit easier to achieve. Assembly member Darryl Steinberg sponsored legislation to similarly reduce the super-majority requirement for transportation measures (Assembly Constitutional Amendment [ACA] 14) in the 2003 legislative session. This bill died⁷ and a second bill was attempted (SB23-1X) in 2011, while Steinberg was Senate President Pro Tempore. It was more inclusive in its list of the types of taxes local governments can impose. This bill had no action taken in the Assembly and died there.⁸ As recently as 2012, Steinberg has been advocating a change to voter requirements for special taxes.⁹ In the 2013-2014 legislative session, no bill was introduced to reduce the voting requirements for transportation measures.

Since 1976, 20 ¼ to ½ cent sales tax measures have been enacted by local voters. The majority of these have sunset dates and last 20 years. With a few exceptions, these focused on transit, local streets and roads, and freeway improvements. These have collectively produced more than \$67.4 billion to fund transportation projects. The average transportation sales tax measure generates \$3.55 billion for its county but the values vary greatly and are larger in populated urban counties. Currently, only two counties—Los Angeles and Santa Clara—have permanent measures without sunset dates and both have enacted multiple measures. Table A1 provides more details on the original sales tax measures.

Sales Tax Measure Renewals

Once a sales tax measure has been in effect, promises to the voters have been kept, and projects delivered, renewing an existing sales tax measure has proven to be more feasible than passing a new one for which there is no precedent. Fourteen of the original 20 local agencies have renewed existing sales tax measures before the sunset date with one agency receiving approval on two separate measures. The earliest renewals of existing sales taxes occurred in 2000 by both Santa Clara and Alameda Counties. The majority of measure renewals remained the same rate (at ½ percent) or increased (from ¼ to ½ percent). Most of the renewals added an additional 10 years to the sunset of the measure, increasing the average measure duration from 20 years to 30 years. These renewal measures will add \$53.9 billion to infrastructure improvements with an average of \$3.85 billion per measure—a slight increase of roughly 8% above the original sales tax measure’s revenue generation. See Table A2 for more details on the sales tax measure renewals.

Table A1. Summary of Original Sales Tax Measures by County

County	Measure	Year Passed	Amount	Estimated Funding*	Time Frame	Expiration Date
Alameda	B1	1986	½ cent	\$2 B	20 Years	March 2002 ¹⁰
Contra Costa	C	1988	½ cent	\$1 B	20 Years	March 2009 ¹¹
Fresno	C1	1986	½ cent	\$696 M	20 Years	June 2007 ¹²
Imperial	D1	1989	½ cent	\$105 M	20 Years	April 2010
Los Angeles	A	1980	½ cent	--	Permanent	None ¹³
	C**	1990	½ cent	--	Permanent	None
	R	2008	½ cent	\$40 B	30 Years	July 2039 ¹⁴
Madera	T	2006	½ cent	\$213 M	20 Years	September 2027 ¹⁵
Marin	A	2004	½ cent	\$331 M	20 Years	April 2025 ¹⁶
Napa	T	2012	½ cent	\$300 M	25 Years	July 2043 ¹⁷
Orange	M1	1990	½ cent	\$3.1 B	20 Years	March 2011 ¹⁸
Riverside	A1	1988	½ cent	\$1 B	20 Years	November 2008 ¹⁹
Sacramento	A1	1988	½ cent	\$69 M	20 Years	2009 ^{20 21}
San Bernardino	I1		½ cent	\$1.8 B	20 Years	March 2010 ²²
San Diego	<i>TransNet1</i>	1987	½ cent	\$14 B	20 Years	May 2008 ²³
San Francisco	B	1989	½ cent	\$248 M	20 Years	April 2010 ²⁴
San Joaquin	K	1990	½ cent	\$500 M	20 Years	March 2011 ²⁵
San Mateo	A1	1988	½ cent	\$804 M	20 Years	December 2008 ²⁶
Santa Barbara	D	1989	¼ cent	\$650 M	20 Years	March 2010 ²⁷
Santa Clara	A1**	1976	½ cent	--	Permanent	None ²⁸
	A2***	1996	--	--	Permanent	-- ²⁹
	B****	1996	½ cent		10 Years	March 2006 ³⁰
Sonoma	M	2004	¼ cent	\$20 M	20 Years	March 2025 ³¹
Tulare	R	2006	½ cent	\$652 M	30 Year	April 2037 ³²

* These estimates tend to be based on nominal dollars estimated a few years prior to when the sales tax measure was passed. These figures vary greatly based on the expenditure plan and population of the county.

** This measure is a transit focused sales tax.

*** This was an advisory measure asking voters about the list of transportation projects that should be included *if* a ½ cent sales tax measure were to be approved. It was approved by 78% of the vote.³³

**** This measure only required 50% of the vote because it was a general purpose tax, but the projects were informed by Measure A, which was on the same ballot. It was approved by 52% of the vote.³⁴

Table A2. Summary of Sales Tax Measures Renewals by County

County	Measure	Year Passed	Amount	Estimated Funding*	Time Frame	Expiration Date
Alameda	B2	2000	½ cent	\$1.4 B	20 Years	March 2022 ³⁵
Contra Costa	J	2004	½ cent	\$2.5 B	25 Years	March 2034 ³⁶
Fresno	C2	2006	½ cent	\$1.7 B	20 Years	June 2027 ³⁷
Imperial	D2	2008	½ cent	\$15 M	40 Years	April 2040 ³⁸³⁹
Orange	M2	2006	½ cent	\$11.6 B	30 Years	March 2041 ⁴⁰
Riverside	A2	2002	½ cent	\$4.6 B	30 Years	November 2039 ⁴¹
Sacramento	A2	2004	½ cent	\$4.7 B	30 Years	2039 ⁴²
San Bernardino	I2	2004	½ cent	\$4.5 B	30 Years	March 2040 ⁴³
San Diego	<i>TransNet2</i>	2004	½ cent	\$14 B	30 Years	May 2048 ⁴⁴
San Francisco	K	2003	½ cent	\$2.35 B	30 Years	April 2035 ⁴⁵
San Joaquin	K	2006	½ cent	\$2.552 B	30 Years	March 2041 ⁴⁶
San Mateo	A2	2004	½ cent	\$1.5 B	25 Years	December 2033 ⁴⁷
Santa Barbara	A	2008	½ cent	\$1 B	30 Years	April 2040 ⁴⁸
Santa Clara	A	2000	½ cent	**	30 Years	March 2036 ⁴⁹
	B***	2008	⅛ cent	\$1.5 B	30 Years	Not indicated ⁵⁰

* These estimates tend to be based on nominal dollars estimated a few years prior to when the sales tax measure was passed. These figures vary greatly based on the expenditure plan and population of the county.

** The amount of projected revenue for the measure was not specified in the ballot language.

*** This measure is a transit focused sales tax and would only be collected if sufficient state and federal funds are secured to match local construction dollars.

Table A3. Populations in Self Help Counties⁵¹

County	Population	County	Population
Alameda	1,578,891	San Bernardino	2,088,371
Contra Costa	1,094,205	San Diego	3,211,252
Fresno	955,272	San Francisco	837,442
Imperial	176,584	San Joaquin	704,379
Los Angeles	10,017,068	San Mateo	747,373
Madera	152,389	Santa Barbara	435,697
Marin	258,365	Santa Clara	1,862,041
Orange	3,114,363	Sonoma	495,025
Riverside	2,292,507	Tulare	454,143
Sacramento	1,462,131	Total:	31,937,498

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- ¹³ LA Metro. Measures A & C and R Sales Taxes. Retrieved 22 Jul 2014 from the LA Metro website: <http://www.metro.net/about/financebudget/taxes/>.
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- ¹⁸ Orange County Transportation Authority. Measure M1 (1991 – 2011). Retrieved 18 Jul 2014 from the Authority’s website: [http://www.octa.net/Measure-M/Then-and-Now/Measure-M1-\(1991-2011\)/](http://www.octa.net/Measure-M/Then-and-Now/Measure-M1-(1991-2011)/).
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Appendix B: Case Studies of Local Option Sales Tax Measures

Case Study: San Diego: New Concepts Approved

TransNet, the local sales tax measure in San Diego, was approved by voters in 1987 and renewed in 2004. Businesses, non-profits, and taxpayer groups worked as a coalition for 18 months prior to the renewal measure reaching the ballot. Caltrans staff was included early in the formation of the measure to help identify regional transportation needs and mitigation needs. One feature included to gain support from the conservation community as a result of these negotiations was an advance mitigation program,¹ the first in the nation of its kind.² Half a dozen conservation groups supported *TransNet*'s renewal³ and the measure passed with 67% of the vote.⁴

SANDAG and Caltrans District 11 have continued to nurture their cooperative relationship defined through a Master Agreement⁵ and updated and approved annually by the SANDAG Board. The working relationship (specifically roles and responsibilities of each agency) regarding SANDAG projects are documented in the agreement.⁶ The agreement covers both *TransNet*-funded and non-*TransNet*-funded projects. Non-*TransNet*-funded projects are those funded separately from the *TransNet* program, including any funds received from the state or federal government.

The Regional Transportation Plan 2030, adopted in 2004 clearly outlines which highways, streets, roads and transit projects are included. In addition, these projects are also ranked in a priority list. Outlined in the document are the types of funding SANDAG will use to get the projects completed. If the project is not listed in the Regional Transportation Plan it cannot be funded through *TransNet*. Therefore a Caltrans project can be funded or mitigated through *TransNet* or its Environmental Mitigation Program only if the project(s) are listed in the Regional Transportation Plan. Caltrans has not contributed to financing the mitigation program.

Caltrans played a pivotal role in determining the quantity and type of habitat impacts addressed in *TransNet*'s 11 major transportation improvement projects. Early calculations were completed by District staff to determine upland and wetland impacts including acquisition cost per acre, restoration cost per acre and long term endowment needs.

One of *TransNet*'s important features was an Early Action Program for both the advance mitigation activities and the transportation projects themselves. Three major infrastructure projects were identified by decision makers for early funding. The measure was enacted in November 2004, but would not take effect until the original measure expired in 2008. SANDAG bonded against future revenues to obtain money in advance of the measure's revenue collection date in November 2008. This early infusion of money for transportation projects and their mitigation was identified by Bruce April, Caltrans District 11 staff member, as a key feature. The projects funded through this Early Action Program are listed in the Regional Transportation Plan and cover the suite of transportation improvements. Any projects Caltrans seeks to implement that are outside of the Regional Transportation Plan must have its own funding source and mitigation source. While many agencies may support advance mitigation in principle, few have the money to jump start it in practice without specific action to accelerate cash flow.⁷

Incorporated in San Diego's renewed *TransNet* implementing language are principles that describe the intent of the advance mitigation component. Language about impacts, funding and permits is incorporated, as is a significant additional feature: discussion of a new measure. The language includes a firm commitment by SANDAG to help meet long-term needs of local conservation plans through the creation of a second regional funding measure focused specifically on conservation.⁸

Case Study: Orange County - New Partnerships Approved

Measure M was first approved by Orange County voters in 1990 and later renewed in November 2006. In 2005, OCTA began circulating the initial concept of the projects/expenditures in Renewed Measure M among various stakeholder groups including the conservation community and cities. About 10 months prior to the measure reaching the ballot, the conservation community approached OCTA about the inclusion of an advance mitigation component. Conservation leaders could point to the successful example of *TransNet* and its mitigation program, as that measure had passed with the support of environmental organizations one year earlier.

The cases of San Diego's *TransNet* and Riverside's Renewed Measure A were starting points for discussion and negotiation between OCTA staff and board members and conservation leaders. After significant discussions about the benefits of doing so—such as the establishment of new partnerships with the conservation community and resource and permitting agencies; streamlined permitting; and anticipated reduction in project costs and delay—the parties agreed to bundle the environmental components of individual freeway projects to create an advance mitigation component. This was a key selling point for OCTA and Caltrans District 12.

Rather than include a new line item in the measure for advance mitigation, the measure provided for the pooling of impacts of 13 freeway projects and pooled money to mitigate those impacts from those project budgets. One integral component of the measure's implementing language was discussion of "net benefits" for both the environment and of expedited project delivery. This provided assurances to the environmental community that the intent of comprehensive mitigation would occur and assurances to OCTA that transportation project delivery would be improved as it related to permitting.⁹

Resource and permitting agencies were included in discussions prior to the measure's passage. Both US Fish and Wildlife Service and the then California Department of Fish and Game (now Fish and Wildlife) supported the landscape level ecosystem approach. Caltrans District 12 was also supportive of this mitigation approach because it helped meet the mandate to deliver transportation improvements. Advance mitigation also allows greater flexibility, in timing and site location, to meet "no net loss" policies by permitting agencies.¹⁰

The benefit to Caltrans was that a local transportation agency would be funding improvement projects on systems owned and operated by Caltrans. Only the list of 13 freeway projects approved by voters in 2006 is considered covered activities for OCTA's mitigation program. As such, none of the Caltrans-specific projects and the associated mitigation is covered under OCTA's mitigation program. Caltrans projects must be mitigated and funded separately as they were not approved by voters in the M2 plan. To date, Caltrans has not funded any of the mitigation for OCTA's 13 freeway projects.

Renewed Measure M, approved in November 2006 with 69.7% of the vote, was the first time in County history that conservation groups and OCTA had aligned to meet mutual goals. Nearly 30 conservation and community groups supported Renewed Measure M because of the mitigation component. The list of these is available at www.fhbp.org/projects/measure-m-coalition.html and included the spearheading/negotiating organization Friends of Harbors, Beaches and Parks, statewide groups (Planning and Conservation League), regional groups (Hills For Everyone and Orange County Coastkeeper), and local groups (Laguna Greenbelt, Inc. and Saddleback Canyons Conservancy).

Measure M1 appeared on the ballot three times before it achieved the required two-thirds majority required to be approved by voters. This measure had been approved with 54.8% of the vote (prior to Proposition 218 two-thirds super-majority requirement). M1 was set to expire in 2011 but OCTA began its campaign for renewal six years early to allow for the possibility that the measure might take multiple tries. With the two-thirds super-majority requirement in place for M2, it was imperative that OCTA understand what voters and decision makers would and would not like to see included in the measure. Numerous polls completed in the Spring of 2005 included specific questions about the mitigation program. With an understanding that the voters supported the concept, OCTA felt justified to include it in the measure.¹¹ Orange County Supervisor Bill Campbell (3rd District) credits the environmental community for pushing the approval past the two-thirds super-majority vote requirement.¹²

Measure M2 was enacted in November 2006 but revenue collection did not start until April 1, 2012. The OCTA Board of Directors approved early funding in 2008 through the adoption of an Early Action Plan. This Plan identified projects included in Measure M2 that were far enough along to proceed now, well before the revenues started to accrue from the sales tax. Funding for the Early Action Plan only covered M2 projects, not Caltrans projects. This financing plan allowed OCTA to bond against future revenues to begin several freeway projects as well as their mitigation, and fund improvements to streets, roads and transit. OCTA has an active investor rating (relations) program and a favorable credit rating, both of which proved beneficial in attracting interested investors. In 2008, OCTA had an AA rating and in 2014 it is AA.¹³

Ongoing working relationships among agencies contribute to enhanced ability to address newly emerging policy questions. In Orange County, where Renewed Measure M has authorized improvements to several highways, Caltrans had at one point requested that OCTA set aside funds to permanently cover ongoing management responsibilities associated with the 13 freeway improvement projects. The mitigation program will create a non-wasting endowment to cover the management and stewardship of the conserved lands, and Caltrans requested that an endowment also be established to fund the ongoing maintenance of the highway improvements that OCTA completed or would complete under M2. Because that expenditure was not identified in the Transportation Investment Plan, it may not be feasible. No estimate for the permanent maintenance of the freeways has been calculated, and directing M2 funds to freeway maintenance would need voter approval, as it constitutes a new expenditure under the measure. The constraints of the voter-approved expenditure plan must be followed or to avoid violations of state law.

Case Study: Ventura County - Lessons from Lack of Coordination/Planning

The Ventura County Transportation Commission (VCTC) has been unsuccessful at enacting a transportation sales tax measure to fund the County's transportation improvement projects. Its most recent attempt, Measure B in 2004,¹⁴ failed to secure a two-thirds super-majority vote (42%-58%). Early polling did not indicate strong voter support for the projects included in the measure.¹⁵ Many believe its failure is due, in part, to insufficient coordination between the transportation agency and stakeholders.

County Supervisor Steve Bennett, an instrumental figure in the protection of Ventura open space and agricultural resources, might have been an advocate of Measure B, had a conservation component been incorporated. Bennett had already successfully championed a 1995 measure to protect county natural resources and establish urban growth boundaries.¹⁶ However, frustrated with the lack of conservation features in Measure B, conservation advocates placed their own competing open space measure (Measure A) on the ballot in the same election cycle.¹⁷

Measure B would have secured a ½% transportation sales tax, while Measure A (the open space tax) provided for ¼% to fund the protection of open space. The open space measure had a slight advantage in terms of its location on the ballot due to its assignment of the letter "A" over the assignment of the transportation measure's "B." Voters were asked first whether they would tax themselves to conserve land, then whether they would also tax themselves to fund transportation projects. Because both measures were taxes they appeared to be competing even though they funded different projects. Neither was approved.

The results of the election were as follows:

- Measure A (Open Space) – 57% No – 43% Yes
- Measure B (Transportation) – 63% No – 37% Yes¹⁸

More recently, opportunities for open space conservation have become available. There are several hillside properties that conservation organizations would like to buy and willing sellers. Lack of open space funds, however, have made moving forward with acquisitions or option agreements with the landowners difficult. Conservation leaders are working with the VCTC to include an environmental component in a future transportation sales tax measure. Meetings are scheduled during the summer of 2014 with Supervisor Bennett personally involved.¹⁹

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² April, Bruce. Deputy District Director, Environmental Programs. Caltrans – District 11. Teleconference on 16 Jul 2014.

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⁴ San Diego Association of Governments. *TransNet* Factsheet. Retrieved 18 Jul 2014 from the Association's website: http://www.sandag.org/uploads/publicationid/publicationid_1788_16614.pdf.

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⁹ Orange County Transportation Authority. Renewed Measure M Ordinance No. 3. Retrieved 18 Jul 2014 from the Authority's website: <http://www.octa.net/pdf/m2ordinanceB.pdf>.

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¹¹ Ward, Monte. Special Projects Consultant to the Orange County Transportation Authority. Teleconference on 17 Jul 2014.

¹² Campbell, Bill. Conservation Celebration Speech. June 2011. Retrieved 18 Jun 2014 from the Friends of Harbors, Beaches and Parks website at: <http://www.fhbp.org/projects/measure-m-celebration.html>.

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¹⁶ Los Angeles Times. Ventura County Perspective: SOAR Leaders Focus on Forging Partnerships, Navigating Politics of Controlling Growth. Published 22 Feb 1998. Retrieved 18 Jun 2014 from the Times' website:

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¹⁷ Poultney, Derek. Executive Director, Ventura Hillside Conservancy. Teleconference on 15 Jul 2014.

¹⁸ Ventura County Registrar of Voters. Statement of Votes Cast in the Presidential General Election of November 2, 2004. Retrieved 18 Jun 2014 from the County's website: <http://recorder.countyofventura.org/wp-content/uploads/2012/04/2004-Nov.-SOV.pdf>

¹⁹ Poultney, Derek. Executive Director, Ventura Hillside Conservancy. Teleconference on 15 Jul 2014.

Appendix C: California Cap-and-Trade Auction Revenues

ARB Auction Number	Auction Date	Allowance Vintage	Allowance Settlement Price	State-owned Allowances Sold	State Auction Revenue	Total Allowances Sold*	Total Auction Revenue, by Vintage*	Total Auction Revenue
1	Nov-12	2013	\$10.09	0	\$ -	23,126,110	\$ 233,342,450	\$ 289,102,450
		2015	\$10.00	5,576,000	\$ 55,760,000	5,576,000	\$ 55,760,000	
2	Feb-13	2013	\$13.62	2,670,422	\$ 36,371,148	12,924,822	\$ 176,036,076	\$ 223,588,476
		2016	\$10.71	4,440,000	\$ 47,552,400	4,440,000	\$ 47,552,400	
3	May-13	2013	\$14.00	2,649,631	\$ 37,094,834	14,522,048	\$ 203,308,672	\$ 283,794,322
		2016	\$10.71	7,515,000	\$ 80,485,650	7,515,000	\$ 80,485,650	
4	Aug-13	2013	\$12.22	2,649,632	\$ 32,378,503	13,865,422	\$ 169,435,457	\$ 275,551,457
		2016	\$11.10	9,560,000	\$ 106,116,000	9,560,000	\$ 106,116,000	
5	Nov-13	2013	\$11.48	2,672,774	\$ 30,683,446	16,614,526	\$ 190,734,758	\$ 296,850,758
		2016	\$11.10	9,560,000	\$ 106,116,000	9,560,000	\$ 106,116,000	
6	Feb-14	2014	\$11.48	2,206,243	\$ 25,327,670	19,538,695	\$ 224,304,219	\$ 329,683,019
		2017	\$11.38	9,260,000	\$ 105,378,800	9,260,000	\$ 105,378,800	
7	May-14	2014	\$11.50	2,206,242	\$ 25,371,783	16,947,080	\$ 194,891,420	\$ 240,659,660
		2017	\$11.34	4,036,000	\$ 45,768,240	4,036,000	\$ 45,768,240	
8	Aug-14	2014	\$11.50	2,206,242	\$ 25,371,783	22,473,043	\$ 258,439,995	\$ 331,809,795
		2017	\$11.34	6,470,000	\$ 73,369,800	6,470,000	\$ 73,369,800	
Totals					\$ 833,146,056			\$ 2,271,039,936

Table: G.C. Sciara; Data: Archived Auction Information and Results, California Air Resources Board, http://www.arb.ca.gov/cc/capandtrade/auction/auction_archive.htm

* Includes the sale of state-owned allowances *and* investor-owned utilities' (IOU) and publicly owned utilities' (POU) allowances.