



**OPPORTUNITIES TO ADVANCE
SUSTAINABILITY IN CALIFORNIA'S CLEAN
WATER STATE REVOLVING FUND PROGRAM**

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Table of Contents

Table of Contents.....	1
I. Background.....	1
II. Context for California Sustainability Efforts.....	4
The California Strategic Growth Council.....	4
California State Planning Priorities (AB 857).....	5
California Water Plan.....	6
California Regional Blueprints and Sustainable Communities Strategies.....	7
Integration of CWSRF Program With State Planning Activities.....	8
III. Matrix of Options for Incorporating Sustainability Into the CWSRF Program.....	9
Sustainability Goal 1: Support existing communities by focusing on repairs and upgrades to existing infrastructure.....	10
Sustainability Goal 2: Prioritize projects in areas previously developed and suitable for economic use or reuse, such as brownfields or greyfields.....	12
Sustainability Goal 3: Encourage adoption of cross-sector planning processes to develop comprehensive infrastructure plans that align investments in housing, transportation, utilities, and other infrastructure.....	14
Sustainability Goal 4: Encourage sewer and stormwater capital improvement plans (CIPs) with established triggers for updates.....	16
Sustainability Goal 5: Encourage a robust analysis of alternatives.....	17
Sustainability Goal 6: Encourage project alternatives analyses to consider regional solutions.....	19
Sustainability Goal 7: Consider green infrastructure approaches to addressing combined sewer overflows.....	21
Sustainability Goal 8: Consider localized community wastewater treatment solutions to address polluting septic systems and encourage responsible management plans.....	22
Sustainability Goal 9: Preserve open spaces through land acquisition and conservation projects.....	24
Sustainability Goal 10: Encourage pricing and rate structures that reflect the true cost of construction, maintenance, operations, and replacement of infrastructure assets (with appropriate considerations for disadvantaged households).....	26
Sustainability Goal 11: Maximize capital investments that have already been made.....	28
IV. In-Depth Consideration of Most Promising Options for Incorporating Sustainability Into the CWSRF Program.....	29
1. Reexamine the SRF Technical Review Process.....	30
2. Reduce administrative hurdles for land conservation and decentralized projects.....	32
3. Explore Partnering with the Strategic Growth Council.....	38
4. Designate a DFA Demand Manager.....	40
5. Promote Sustainable Project Special Financing.....	41
V. Conclusion.....	43

I. Background

On June 16, 2009, the U.S. Environmental Protection Agency (EPA) joined the Partnership for Sustainable Communities with the U.S. Department of Housing and Urban Development (HUD) and the U.S. Department of Transportation (DOT) to help improve access to affordable housing, provide more transportation options, and lower transportation costs while protecting the environment in communities nationwide. The Partnership coordinates actions, policies, and investments across the three agencies to achieve these goals.

Ensuring that communities make wise clean water infrastructure investments is an important part of the Partnership's work. Decisions about where to provide public wastewater infrastructure affect development patterns and influence where and how a community will grow. Regions are shaped by such decisions that ultimately affect the cost of all public infrastructure, including roads; utilities; schools; and police, fire, and ambulance service. By aligning public investments across sectors to support local goals, communities can focus resources in locations that best leverage past public investments.

Many states have also undertaken initiatives to promote more sustainable communities, places that balance their economic and natural assets so that the diverse needs of local residents can be met now and in the future. State Revolving Fund (SRF) programs across the country have modified their project selection criteria and instituted other programmatic changes for consistency with statewide initiatives or to achieve their own program goals. For example, New Jersey revised its project priority system to incentivize projects that support smart growth development, which include fixing existing systems and investing in transit hub areas, by giving a 0-percent interest rate to 75 percent of the total loan. In another example, both Ohio and Oregon offer interest-rate reductions to borrowers funding traditional treatment plant projects that agree to undertake a nonpoint source or conservation project elsewhere in the watershed.

EPA has supported and encouraged such state efforts. In 2010, EPA released procedures for the Clean Water and Drinking Water SRF Programs to set forth administration priorities and address requirements included in 2010 appropriations law.¹ This document increased EPA's emphasis on the importance of directing SRF assistance to projects that support sustainable systems and that help build or maintain the technical, financial, and managerial capacity of the recipient. In 2011 EPA released a Clean Water and Drinking Water Infrastructure Sustainability Policy that helps ensure that federal investments, policies, and actions support water infrastructure in efficient and sustainable locations to support existing communities, enhance economic competitiveness, and promote affordable neighborhoods.² To help

¹ EPA. "Procedures for Implementing Certain Provisions of EPA's Fiscal Year 2010 Appropriation Affecting the Clean Water and Drinking Water State Revolving Fund Programs" (2010)
<http://www.efc.unc.edu/publications/2010/subsidization/Procedures.pdf>.

² EPA. "EPA's Clean Water and Drinking Water Infrastructure Sustainability Policy" (2011)
<http://water.epa.gov/infrastructure/sustain/upload/Sustainability-Policy.pdf>.

water and wastewater utilities manage their operations and infrastructure and support the sustainability of the communities they serve, EPA issued a handbook in 2012 that describes steps utilities can undertake to enhance their planning processes to ensure that water utilities are managed to optimize economic, environmental, and social sustainability.³ Finally, in 2012 EPA also issued a document that showcases best practices among state CWSRF programs to promote community and water infrastructure sustainability.⁴

Beginning in 2010, EPA's Office of Water and Office of Sustainable Communities jointly sponsored a pilot technical assistance program with three state Clean Water SRF (CWSRF) programs to explore potential modifications that could encourage these types of investments and to provide models for other states. EPA selected Maryland, New York, and California for this assistance. EPA worked with these state CWSRF programs to review their intended use plans, project priority systems, borrower application processes, and other funding guidelines. State limitations due to legislation, regulations, and policies were examined as well as potential avenues for change.

The result of each pilot program is a set of options for the state to consider when evaluating CWSRF program policies and documents. The states that participated in this pilot program are under no obligation to incorporate or implement any of the proposed changes. A host of factors can make a potential change more or less useful for any given state. However, the ideas (whether adopted or not) may be useful for other CWSRF programs. EPA's ultimate goal is to gather lessons learned and best practices in these pilot states and other states undertaking similar initiatives so that all CWSRF programs can consider adoption of practices that focus resources on existing communities and infrastructure systems to leverage past investments.

EPA's commitment to sustainable infrastructure has been mirrored at the state level by the California CWSRF Program, administered by the Division of Financial Assistance (DFA) at the California State Water Resources Control Board (Water Board). Over the past several years, the California CWSRF program has incorporated practices into its activities that promote community sustainability. In January 2005, the Water Board passed Resolution No. 2005-0006⁵ declaring sustainability of water and environmental resources one of the core values for its CWSRF program. The agency directed its staff to consider sustainability in all future policies, guidelines, and regulatory actions, which earned the Water Board a 2005 PISCES Award⁶ from EPA. This goal was expanded by Water Board Resolution No. 2008-0030,⁷

³ EPA. *Planning for Sustainability: A Handbook for Water and Wastewater Utilities* (2012) <http://water.epa.gov/infrastructure/sustain/upload/EPA-s-Planning-for-Sustainability-Handbook.pdf>.

⁴ EPA. *Sustainability and the Clean Water State Revolving Fund: Best Practices Guide*. (2012) http://water.epa.gov/grants_funding/cwsrf/upload/CWSRF-Best-Practices-Guide.pdf.

⁵ California State Water Resources Control Board. "Consideration of a Resolution Adopting the Concept of Sustainability as a Core Value for State Water Board Programs and Directing its Incorporation into Future State Water Board Actions" (2005) http://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2005/rs2005-0006.pdf.

⁶ EPA. "Performance and Innovation in the SRF Creating Environmental Success (PISCES) Awards" http://water.epa.gov/grants_funding/cwsrf/2006pisces.cfm. Accessed 10-31-11.

which acknowledged challenges that California faces from “urban sprawl, climate change, water overdraft, and emerging pollutants” and directed Water Board staff to promote and prioritize stormwater management techniques to maintain or restore natural hydrologic functions by detaining water on site, filtering out pollutants, and facilitating infiltration of water into the ground.

CWSRF programs use loan repayments from current projects to fund loans for new projects. The rate at which the program recycles funding is known as the “pace” of the program. Pace is measured as CWSRF assistance provided as a percent of available funds. According to the CWSRF National Information Management System (NIMS), as of 2010 the California CWSRF program had a cumulative pace of 110 percent. California has been very successful at converting available funds into loans by committing funds before they will be needed. The program also has sufficient assets to fund every project that is ready to proceed during a given year (up to a \$50 million funding cap per applicant). These measures indicate that California’s CWSRF program can efficiently process applications for funding, but that there is little competition among systems for CWSRF financing. California communities have many options when it comes to financing water infrastructure and water quality protection projects including other federal and state funding sources, municipal bonds, and private lenders. When selecting a funding source, they weigh the advantages of each against its application requirements and perceived administrative hurdles. The demand for CWSRF funding in California is also affected by the limited ability of many municipalities to afford major capital expenditures, even with favorable loan terms.

The result of these circumstances is that California’s priority ranking process does not currently significantly influence the types of projects that apply for or receive CWSRF funding. Incentives therefore play an important role in attracting high-priority projects to the CWSRF program. This report focuses primarily on ways that the California CWSRF program might attract more applicants with sustainable projects by better coordination with existing statewide sustainability initiatives, strategic outreach efforts, and incentives.

⁷ California State Water Resources Control Board. “Requiring Sustainable Water Resources Management” (2008) http://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2008/rs2008_0030.pdf.

II. Context for California Sustainability Efforts

The state of California has a number of laws, initiatives, and organizations dedicated to supporting sustainable communities. The following is a summary of major ongoing initiatives and ideas about how their connections with the California CWSRF program could be strengthened.

The California Strategic Growth Council

The California Strategic Growth Council (SGC) is a cabinet-level committee created in 2008. It is tasked with coordinating the activities of member state agencies to support the development of sustainable communities. Members include the California Environmental Protection Agency (which oversees the Water Board); the Business, Transportation, and Housing Agency; Health and Human Services; the Natural Resources Agency; the Governor's Office of Planning and Research; and a public member selected by the governor. Among other duties, one of the SGC's tasks is to identify activities and funding programs of member state agencies that could be coordinated to reach the goals of the SGC, which include improving air and water quality, protecting natural resources, encouraging sustainable land use planning, revitalizing urban and community centers in a sustainable manner, and assisting state and local entities in the planning of sustainable communities. The "Funding Wizard," currently under development by an SGC sub-committee, is an online tool that will provide information on all available financial incentives and funding mechanisms for sustainable project planning and implementation.

The SGC itself administers two grant programs: the Urban Greening Grants Program,⁸ which provides funding for entities to develop a master urban greening plan and implement community green areas; and the Sustainable Communities Planning Grants Program,⁹ which provides funds for communities to promote infill development, create stormwater and water conservation ordinances, and create infrastructure master plans, among other projects.

The California Strategic Growth Council: Integration With the CWSRF Program

The CWSRF program in particular and water infrastructure in general have not been a frequent topic of discussion within the SGC. The SGC has a relatively high profile within the state and receives many grant applications for sustainability-oriented projects, many of which they do not have the resources to fund. SGC grant applications could be a good source of projects that the CWSRF could fund, such as sustainable stormwater management projects and preservation of source water protection areas. One option could be to work with the SGC to pass project applications on to the CWSRF program (or perhaps to the California Financing Coordinating Committee) for follow-up communication. An important first step is raising the profile of the CWSRF program within the SGC, perhaps by arranging a presentation on

⁸ The California Strategic Growth Council. "Urban Greening Grants" http://sgc.ca.gov/urban_greening_grants.html. Accessed May 8, 2012.

⁹ The California Strategic Growth Council. "Planning Grants" http://www.sgc.ca.gov/planning_grants.html. Accessed May 8, 2012.

the CWSRF program’s sustainability focus (including relevant CWSRF-funded projects). Opportunities for better coordination with the SGC are explored in more detail in Section IV of this report.

California State Planning Priorities (AB 857)

California law AB 857 of 2002 established three statewide planning priorities:

1. To promote infill development and equity by rehabilitating, maintaining, and improving existing infrastructure that supports infill development and appropriate reuse and redevelopment of previously developed, underutilized land that is presently served by transit, streets, water, sewer, and other essential services, particularly in underserved areas, and to preserving cultural and historic resources.
2. To protect environmental and agricultural resources by protecting, preserving, and enhancing the state’s most valuable natural resources, including working landscapes such as farm, range, and forest lands, natural lands such as wetlands, watersheds, and wildlife habitats, and other wild-lands, recreation lands such parks, trails, greenbelts, and other open space, and landscapes with locally unique features and areas identified by the state as deserving special protection.
3. To encourage efficient development patterns by ensuring that any infrastructure associated with development, other than infill development, support new development that does all of the following:
 - Uses land efficiently.
 - Is built adjacent to existing developed areas.
 - Is located in an area appropriately planned for growth.
 - Is served by adequate transportation and other essential utilities and services.
 - Minimizes ongoing costs to taxpayers.¹⁰

Since 2005, any state agency requesting infrastructure funding must demonstrate how that infrastructure is consistent with the three planning priorities.

California State Planning Priorities (AB 857): Integration With the CWSRF Program

As a result of the Water Board’s sustainability resolutions, DFA modified the CWSRF application to include a requirement for applicants to describe how the proposed project will support the state planning priorities of promoting infill and equity, protecting environmental and agricultural resources, and encouraging efficient development patterns. However, this portion of the application does not influence DFA’s funding decisions. California’s CWSRF has enough funding to cover all ready-to-proceed projects on the priority list, limiting DFA’s ability to influence project design via the priority ranking system. However, DFA could consider establishing the three state planning priorities as a “threshold criterion,” meaning that a project would have to meet at least one of the three priorities to even be

¹⁰ California State Assembly. “Assembly Bill No. 857” (2002) http://www.leginfo.ca.gov/pub/01-02/bill/asm/ab_0851-0900/ab_857_bill_20020928_chaptered.pdf.

included on the priority list. The priorities could be broken down into discrete project characteristics, such as:

- Project promotes infill development.
- Project rehabilitates, maintains, or improves existing infrastructure.
- Project reuses or redevelops previously developed land (i.e., a brownfield or greyfield).
- Project protects, preserves, or enhances farmland, forest lands, wetlands, wildlife habitat, or areas identified by the state as deserving special attention.
- Infrastructure serves new development that is located in an area appropriately planned for growth.
- Infrastructure serves new development that is served by adequate transportation and other essential utilities and services.

By ensuring that every CWSRF project meets at least one of the three statewide planning priorities, DFA could be certain that the program is promoting the statewide priorities and encouraging smart design decisions by project sponsors.

California Water Plan

The California Water Plan was updated in 2009 by the Department of Water Resources. The plan was developed in cooperation with an interagency steering committee representing 21 state government agencies and integrates their companion planning documents. Beginning in 2011, regional forums are being held across the state to allow local stakeholder input into the water plan. Sponsored by the Department of Water Resources and developed in cooperation with local entities and organizations, the forums are intended to gather and share information related to the California Water Plan, integrated water management, flood planning, and other water-related efforts. The Department of Water Resources uses the forums to collect feedback on local conditions and priorities that will help influence statewide investments. The forums also focus on integrating data and information from Integrated Regional Water Management Plans¹¹ and Urban Water Management Plans.¹²

California Water Plan: Integration With the CWSRF Program

The California Water Plan describes a number of innovative and sustainable water management activities that could translate into sustainable CWSRF projects, such as constructing infrastructure for potable/non-potable water trading and infrastructure lifecycle costing. The water plan suggests activities that should receive priority for state funding, but it does not describe funding sources that

¹¹ Integrated Regional Water Management (IRWM) is a collaborative effort to manage all aspects of water resources in a region. IRWM crosses jurisdictional, watershed, and political boundaries; involves multiple agencies, stakeholders, individuals, and groups; and attempts to address the issues and differing perspectives of all the entities involved through mutually beneficial solutions.

¹² Urban Water Management Plans are prepared by California's urban water suppliers to support their long-term resource planning and ensure adequate water supplies are available to meet existing and future water demands. The California Department of Water Resources reviews the submitted plans to make sure they have completed the requirements identified in the [Urban Water Management Planning \(UWMP\) Act](#).

could be used to implement these activities. The document lacks any mention of the CWSRF program or the program's ability to fund many of the innovative projects suggested in the plan. As a member of the Water Plan Steering Committee, the Water Board might suggest that the next plan update in 2013 incorporate descriptions of state funding sources and eligible project types. Each section of the plan describing project solutions (e.g., Agricultural Water Use Efficiency, Pollution Prevention, etc.) could list the eligible project types in that category that could be funded by the CWSRF and other state funding programs. DFA might also consider condensing the project ideas from the Water Plan into a short "Water Plan Implementation Guide" that describes how municipalities, regions, and individuals could implement these ideas using the CWSRF program.

California Regional Blueprints and Sustainable Communities Strategies

The California Business, Transportation, and Housing Agency provides grants to metropolitan planning organizations, regional councils of government, and regional transportation planning agencies to conduct comprehensive scenario planning that results in consensus on a preferred growth scenario, or "blueprint." The process is intended to promote regional collaborative planning that integrates land use, housing, environmental resources, infrastructure, and transportation. As of 2010 blueprint planning processes were ongoing in regions covering 98 percent of California's population. They address future growth on a 20-year or longer horizon through the integration of transportation, housing, land use, environmental resources, other infrastructure, and services. These plans will guide and assist the regions with various aspects of infrastructure development to accommodate anticipated population growth.

Many regions are using their blueprint preferred growth scenario as a basis for developing a Sustainable Communities Strategy (as part of a Regional Transportation Strategy), which was required by the Sustainable Communities and Climate Protection Act of 2008 (SB 375). The bill was passed to help California meet the goal set out in the Global Warming Solutions Act of 2006 (AB 32) to reduce greenhouse gas emissions to 1990 levels by 2020. SB 375 aims to reduce greenhouse gas emissions and pollution by focusing on California's land use patterns. Among other requirements, Sustainable Communities Strategies must identify the general location of uses, residential densities, and building intensities within the region.

California Regional Blueprints and Sustainable Communities Strategies: Integration With the CWSRF Program

Several blueprints for major California metropolitan areas include only limited discussion of wastewater infrastructure, and Sustainable Communities Strategies might continue this trend in spite of the importance of wastewater infrastructure in planning efforts because the law does not specifically require its inclusion. One opportunity to address this deficiency could come through DFA's participation in the California Financing Coordination Committee (CFCC), which coordinates infrastructure projects across eight funding agencies: the Water Board, the California Department of Public Health, U.S. Department of Agriculture, the California Department of Housing and Community Development, the California Department of Water Resources, EPA, the California Infrastructure and Economic Development Bank, and the U.S. Bureau of Reclamation. The committee uses a universal funding pre-

application that is evaluated by CFCC members to determine the best funding source or sources and holds annual funding fairs across the state, allowing communities to learn about each funding source.

Because many plans address land use and transportation while failing to reflect the important role of wastewater infrastructure, DFA might consider proposing that the committee select a region to receive assistance and funding to revise its blueprint or Sustainable Communities Strategy to explicitly incorporate wastewater infrastructure. The CFCC could also provide technical assistance or develop guidance to translate land use plans into realistic wastewater infrastructure projects that support the plans' long-term goals. DFA could consider committing to fund these projects if the sponsors include certain sustainability practices in project planning, design, and construction. Other opportunities for integrating ongoing cross-sector planning processes into the work of the CWSRF program are discussed under Sustainability Goal 3 in Section III of this report.

Integration of CWSRF Program With State Planning Activities

A common element among state planning activities is that they do not acknowledge the role that the California CWSRF program currently plays in promoting sustainable infrastructure and water quality protection practices or opportunities for expanding the CWSRF program's contribution to sustainable community solutions in the future. A first step in maximizing opportunities provided by these statewide initiatives generally could be to raise the profile of the CWSRF program through targeted presentations and outreach.

III. Matrix of Options for Incorporating Sustainability Into the CWSRF Program

In addition to helping to better integrate sustainability efforts across California, the CWSRF program could encourage sustainable practices among project applicants. The matrix below presents a variety of options for each of 11 sustainability goals:

- Sustainability Goal 1: Support existing communities by focusing on repairs and upgrades to existing infrastructure.
- Sustainability Goal 2: Prioritize projects in areas previously developed and suitable for economic use or reuse, such as brownfields or greyfields.
- Sustainability Goal 3: Encourage adoption of cross-sector planning processes to develop comprehensive infrastructure plans that align investments in housing, transportation, utilities, and other infrastructure.
- Sustainability Goal 4: Encourage sewer and stormwater capital improvement plans (CIPs) with established triggers for updates.
- Sustainability Goal 5: Encourage a robust analysis of alternatives.
- Sustainability Goal 6: Encourage project alternatives analyses to consider regional solutions.
- Sustainability Goal 7: Consider green infrastructure approaches to addressing combined sewer overflows.
- Sustainability Goal 8: Consider localized community wastewater treatment solutions to address polluting septic systems and encourage responsible management plans.
- Sustainability Goal 9: Preserve open spaces through land acquisition and conservation projects.
- Sustainability Goal 10: Encourage pricing and rate structures that reflect the true cost of construction, maintenance, operations, and replacement of infrastructure assets (with appropriate considerations for disadvantaged households).
- Sustainability Goal 11: Maximize capital investments that have already been made.

<p>Sustainability Goal 1: Support existing communities by focusing on repairs and upgrades to existing infrastructure. This goal acknowledges that the location of water infrastructure influences where and how a community grows. Infrastructure projects that expand service into low-density or agricultural areas can encourage growth that contributes to increased reliance on cars to access services, increased impervious cover for roads and other infrastructure, degradation of natural areas, and the decline of traditional community centers. Although water infrastructure is only one factor contributing to development patterns, the CWSRF program could make a policy commitment towards sustainability by focusing funding toward projects that support existing communities.</p>		
Current Status	Implementation Opportunities	Examples From Other States
<p>From 1988 through 2010, 13 percent of the cumulative assistance provided by the California CWSRF program has gone to “fix-it-first” categories of projects that focus on existing rather than new infrastructure, e.g., infiltration/inflow correction, sewer system rehabilitation, and combined sewer overflow correction; while 8 percent of cumulative assistance has gone toward growth-related categories such as new collection sewers and new interceptors. (The remainder has gone to secondary and advanced treatment, recycled water systems, and storm sewers.) In comparison, the national average for all CWSRF programs is 21 percent of funds provided to fix-it-first categories of projects and 17 percent provided to expansion-related categories. Between 2006 and 2010, California's cumulative assistance equaled 9 percent for fix-it-first categories and 5 percent for growth-related categories. Of the 100 projects on California's 2011 CWSRF fundable priority list, 15 are identified as including an expansion element.</p> <p>In order to receive CWSRF principal forgiveness or Small Communities Grant funds, applicants must</p>	<ul style="list-style-type: none"> • The vast majority of the California (and national) CWSRF assistance is provided for secondary and advanced treatment projects. It is difficult to determine whether these types of projects are supporting California's sustainability goals based on information currently collected by the Clean Water National Information Management System (NIMS) and CWSRF Benefits Reporting (CBR) system. DFA could consider ways to define this information more precisely in the course of the loan process. For example, DFA could include a checkbox on the application to categorize projects as either expansion or repair/replacement/upgrade of existing infrastructure, add a field in the Loans and Grants Tracking System for project engineers to categorize projects based on project plans, include this information in the project 	<ul style="list-style-type: none"> • New York requires applicants to demonstrate how their project uses or improves existing infrastructure to be eligible for funding. Projects that use green infrastructure to complement existing grey infrastructure, projects that use decentralized infrastructure to improve or replace the service of existing septic systems, and new infrastructure projects that exclusively serve one or more municipal centers meet this requirement.¹⁴ • Vermont requires that to be eligible for CWSRF funding for a new wastewater treatment facility, an increase in the treatment capacity of an existing facility, and/or a sewer line extension the project must be designed to serve only a locally designated growth center, unless there are significant health and environmental problems located outside of a growth center. In such cases the municipality must demonstrate that the impacts of growth resulting from the infrastructure can be adequately managed and will not contribute to scattered development.¹⁵ • The Pennsylvania Department of Community and Economic Development operates a Pre-Development Grant to Loan Program for communities identified by an interagency committee. The program provides pre-development grant funds for downtowns and core urban

<p>evaluate how their projects address the HUD-DOT-EPA "Livability Principles."¹³ This evaluation is not intended to affect the priority or eligibility of a project requesting CWSRF funding, although there is potential for DFA to use this information in future funding decisions.</p> <p>California's CWSRF funding application requires applicants to complete a General Plan Compliance Certification for Publicly Owned Treatment Works certifying that the project is consistent with the land use and housing elements of the entity's general plan and that at least 75 percent of the area affected by the proposed project includes cities and counties with adopted land use and housing elements.</p>	<p>description field in CBR, or add this information to projects listed in the Intended Use Plan. By collecting this information, California could track the degree to which CWSRF funds go toward fix-it-first projects and establish goals for improvement.</p> <ul style="list-style-type: none"> • DFA could consider requiring expansion projects to meet special conditions before receiving SRF funding. For instance, sponsors of expansion projects could be required to maintain an asset management reserve or provide technical assistance to a nearby low-capacity system. 	<p>neighborhoods. Early-stage capital is provided for sketch planning, consulting fees, marketing expenses, engagement of a development team, acquiring property, and other expenses. The project must be part of a larger "IMPACT" project, a community-changing revitalization project supported by multiple federal, state, local, and private investment sources.¹⁶</p> <ul style="list-style-type: none"> • Minnesota's CWSRF ranking system provides points when existing treatment or collection facilities within the proposed project service area are over 20 years old.¹⁷ • New Jersey provides bonus priority ranking points and a reduced interest rate for projects that support smart growth, such as those located in designated growth areas.¹⁸
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¹⁴ New York State Environmental Facilities Corporation. "Smart Growth Guidance: New York State Clean Water State Revolving Fund (CWSRF)" (2011) <http://www.nysefc.org/CleanWaterStateRevolvingFund/SmartGrowth.aspx>.

¹⁵ Vermont Agency of Natural Resources. "Municipal Pollution Control Priority System" (2002) <http://www.anr.state.vt.us/dec/fed/financial/docs/finalprioritysystem.pdf>.

¹³ The livability principles were developed by HUD, DOT, and EPA to guide the federal agencies' efforts under the Partnership for Sustainable Communities. The six principles are to provide more transportation choices, promote equitable, affordable housing, enhance economic competitiveness, support existing communities, coordinate and leverage federal policies and investment, and value communities and neighborhoods. See "The Partnership for Sustainable Communities" <http://www.sustainablecommunities.gov/>.

¹⁶ Pennsylvania Department of Community and Economic Development. "Community Action Team Pre-Development Grant to Loan Program Guidelines" (2009) http://newpa.com/sites/default/files/uploads/CAT_PreDevelopment_Grant_to_Loan_Guidelines.pdf.

¹⁷ Minnesota Pollution Control Agency. "Wastewater Existing Facility Improvements Scoring Worksheet" (2009) <http://www.pca.state.mn.us/index.php/view-document.html?gid=8724>.

¹⁸ New Jersey Department of Environmental Protection. "Proposed Priority System, Intended Use Plan, And Project Priority List for Federal Fiscal Year 2012" (2011) http://www.state.nj.us/dep/dwg/pdf/cwf_2012P_cwpl.pdf.

<p>Sustainability Goal 2: Prioritize projects in areas previously developed and suitable for economic use or reuse, such as brownfields or greyfields (abandoned commercial sites). Investing in previously developed land leverages past investment and takes advantage of existing infrastructure to support development. Redevelopment of brownfields and greyfields not only conserves the natural resources that would be used if the project were located on virgin land, but it also rehabilitates abandoned sites that can be eyesores contributing to community decline. In addition, remediation of any onsite environmental toxins prevents future pollution of nearby waterways.</p>		
Current Status	Implementation Opportunities	Examples From Other States
<p>In December 2011, the California Supreme Court upheld legislation that ended a program of redevelopment agencies that developed plans and provided the initial funding for revitalization of blighted areas. This change might decrease the number of brownfield and greyfield redevelopment projects in the state.</p> <p>Given that the California CWSRF program is already able to fund all ready applicants, the best opportunity to fund additional brownfield and greyfield projects might be to attract applicants that have not previously considered the CWSRF program as a funding source.</p> <p>The cost to demolish a greyfield site (such as an abandoned building) is CWSRF-eligible if the structure is replaced by natural hydrological features, either manmade (e.g., a rain garden) or natural (e.g., restoring a riparian area to its natural state). This type of project qualifies for funding from the Green Project Reserve.¹⁹</p> <p>California's state nonpoint source program implementation plan includes management measure 6C: Vegetated Treatment Systems, which "promotes the installation of vegetated treatment systems in</p>	<ul style="list-style-type: none"> • DFA could consider promoting the demolition of greyfield sites and their replacement with green infrastructure to regional economic development committees and municipal leaders as a solution to eliminate eyesores and beautify neglected neighborhoods while improving water quality. The SRF could provide funding for the demolition of dangerous abandoned structures and replace them with attractive green space. • DFA could design a pilot funding initiative within the CWSRF program to promote and gauge demand for demolition-to-green space projects. This effort could be accompanied by a targeted marketing effort that identifies potential project sponsors (such as municipal economic development corporations), provides facts and figures on the cost of 	<ul style="list-style-type: none"> • The Puerto Rico CWSRF program funded the demolition of a decommissioned wastewater treatment plant. The demolition was CWSRF-eligible because the area will be allowed to return to natural green space. Since the plant was in a riparian area, the demolition was considered functionally equivalent to stream bank restoration. • In New Jersey, wastewater treatment and stormwater management projects that are located in one of 23 designated Brownfields Development Areas (BDAs) are eligible for a smart growth financing package that includes an interest-free loan for

¹⁹ The American Recovery and Reinvestment Act of 2009 required state CWSRF programs to allocate 20 percent of their capitalization grants to the Green Project Reserve. Categorically qualified projects must demonstrate at least a 20% savings in energy, an increase in water efficiency, or utilize green stormwater practices that demonstrate new or innovative approaches to sustainable water management. Other projects or portions of projects may qualify for the Green Project Reserve if a business case is submitted describing the green benefits of the project. As of 2012, at least 10 percent of capitalization grants must be allocated to the Green Project Reserve.

<p>areas where these systems will serve a polluted runoff-abatement function. Vegetated filter strips and engineered wetlands remove sediment and other pollutants from runoff and wastewater and prevent pollutants from entering adjacent waterbodies." Thus, demolition of greyfield sites to construct green infrastructure could be eligible for CWSRF funding in California.²⁰</p> <p>California's state nonpoint source program implementation plan does not specifically reference brownfield remediation, so this type of project is not currently eligible to receive CWSRF funding in the state.</p>	<p>abandoned buildings both socially and economically, provides statistics on the social and economic benefits of green infrastructure, and provides a roadmap for obtaining funding through the CWSRF program by identifying potential repayment sources and ways to leverage private investment.</p> <ul style="list-style-type: none">• DFA could consider promoting eligibility of brownfield remediation during the next scheduled revision of the state's nonpoint source program implementation plan.	<p>up to 75 percent of the allowable project costs and a market-rate loan for the remaining allowable costs. In addition, sites within the BDA will be handled by a single project manager, who will coordinate with partnering state agencies to direct targeted technical and financial assistance to sites within the BDA neighborhoods.²¹</p>
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²⁰ The Clean Water Act authorizes use of CWSRF funds for the following: publicly owned wastewater treatment works as defined by Section 212 of the Act, implementation of a nonpoint source pollution control management program under Section 319 of the Act, and implementation of an estuary conservation and management plan under Section 320 of the Act. In order for a nonpoint source pollution prevention or remediation project to receive funding from the CWSRF, the project must serve to implement the state's nonpoint source management program as defined in Section 319.

²¹ New Jersey Department of Environmental Protection. "Proposed Priority System, Intended Use Plan, And Project Priority List for Federal Fiscal Year 2011" (2010) http://www.nj.gov/dep/dwq/pdf/cwf_2011P_cwpl.pdf.

<p>Sustainability Goal 3: Encourage adoption of cross-sector planning processes to develop comprehensive infrastructure plans that align investments in housing, transportation, utilities, and other infrastructure. Coordinated planning efforts can prevent uncontrolled growth by ensuring that one type of infrastructure investment does not lead to other necessary but unplanned infrastructure investments. Communities can achieve better fiscal outcomes with a comprehensive planning process that empowers regions to consider how all public investments can work together to create more jobs and economic opportunities.</p>		
Current Status	Implementation Opportunities	Examples From Other States
<p>Comprehensive planning grants have been awarded to 17 metropolitan planning organizations and 16 rural planning organizations, encompassing most of the state, to develop a preferred growth scenario (a "blueprint"). In addition, SB 375 requires communities to develop a Sustainable Communities Strategy that links land use planning to the regional transportation plan. It is unclear whether these plans influence the types of projects that SRF applicants pursue. (See Section II of this report for more information about regional blueprints and Sustainable</p>	<ul style="list-style-type: none"> • DFA could consider limiting SRF funding for expansion projects and new collection systems to those areas prioritized for growth in a regional blueprint, Sustainable Communities Strategy, or the local general plan. Alternatively, DFA could consider incentivizing projects in such areas by providing additional subsidy, waiving the \$50 million funding cap, or awarding priority points. • DFA could consider the same set of requirements or incentives for projects that support water quality-specific goals included in a regional blueprint plan. If this change is implemented, DFA could publicize it through the California Business, Transportation, and Housing Agency (the blueprint funding agency) so that regions that have not yet completed their blueprints will have more incentive to consider water quality goals in their plans. • DFA could consider including a question in the CWSRF application that asks how the project has been planned to align with other infrastructure investments and/or what other improvements are expected to result from the project—e.g., the coordination of sewer replacement with street reconstruction to incorporate traffic-calming measures, pedestrian safety improvements, and better stormwater management. • The CFCC might benefit from a management-level steering committee to 	<ul style="list-style-type: none"> • In Oregon, CWSRF applicants must show that projects are consistent with local land use plans by submitting a Land Use Compatibility Statement approved by the city or county planning approval office.²² • Maryland's CWSRF program requires that projects be located in or serve a Priority Funding Area, a location the state and local governments designated to support economic development and new growth.²³ • New Jersey's Department of Transportation and New Jersey Transit formed a multi-agency partnership to designate Transit Villages, which must have an adopted a land-use strategy for achieving compact, transit-supportive, mixed-use development within walking distance of transit facilities. Wastewater treatment and stormwater infrastructure needed to address improvements in Transit Villages are

²² Oregon Department of Environmental Quality. "Clean Water State Revolving Fund Procedures Manual" (2008) <http://www.deq.state.or.us/wq/loans/docs/srfmanuals/procedures.pdf>.

²³ Maryland Department of the Environment. "Integrated Project Priority System for Water Quality Capital Projects" (2010) http://www.mde.state.md.us/programs/Water/QualityFinancing/Documents/www.mde.state.md.us/CW%20DW%20draft%20IPPS/2010%20CW%20IPPS_Final.pdf.

<p>Communities Strategies.)</p> <p>Water Board Resolutions No. 2005-0006 and No. 2008-0030 promoting sustainability provided a framework for incorporating it into the CWSRF application. As a result of these resolutions, the SRF application now encourages applicants to describe how the proposed project fits into the local general plan.</p>	<p>identify shared goals that the member agencies could work toward each year. For example, CFCC members could agree to prioritize projects that support preferred growth scenarios identified in blueprints and coordinate marketing efforts and funding fair presentations to advance this goal. (See Section II of this report for more information about the CFCC and other opportunities to advance this goal through the committee.)</p> <ul style="list-style-type: none"> • DFA could consider working with HUD to target a water efficiency rebate program in existing neighborhoods. With HUD acting as a conduit lender, residents holding HUD mortgages could roll the cost of improvements such as replacing polluting onsite systems, adding residential stormwater controls, or installing water-efficient fixtures into their existing mortgage payment at a reduced rate. 	<p>eligible for an interest-free loan from the CWSRF for up to 75% of the allowable project costs.²⁴</p> <ul style="list-style-type: none"> • Pennsylvania's CWSRF program gives priority points to projects located in a “Community Action Team” community designated by a group consisting of the state Department of Community and Economic Development, Department of Environmental Protection, Department of Transportation, the Public Utility Commission, and other local and state agencies.²⁵
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²⁴ New Jersey Department of Environmental Protection (2010) *op. cit.*, p. 13.

²⁵ Pennsylvania Department of Environmental Protection. “Project Priority Rating System Guidance Manual” (2008) http://www.portal.state.pa.us/portal/server.pt/community/municipal_finance/10564/municipal_finance_programs/554058.

<p>Sustainability Goal 4: Encourage sewer and stormwater capital improvement plans (CIPs) with established triggers for updates. Capital improvement planning is critical to effective asset management and enables a community’s decisions about wastewater infrastructure to incorporate local, regional, and state planning priorities. Coordinated planning can ensure that wastewater infrastructure investments align with investments in housing, transportation, utilities, and other public services and use public resources efficiently. Effective plans have established triggers for updates—e.g., whenever population or housing unit increases exceed a specific threshold—so that they do not lag far behind development pressures and become disconnected with land use plans. Assisting potential applicants with producing comprehensive CIPs could also help California build a pipeline of projects and increase demand for funding.</p>		
Current Status	Implementation Opportunities	Examples From Other States
<p>California CWSRF program staff have indicated that applicants’ CIPs for sewer projects are generally much more developed than CIPs for stormwater infrastructure.</p>	<ul style="list-style-type: none"> • DFA could incentivize comprehensive CIP development by creating a five-year priority list that commits to fully fund CIPs that incorporate local, regional, and state planning priorities and have established triggers for updates. • DFA could incentivize CIP development by allowing certain SRF requirements such as the environmental review and technical review to be completed once for the entire CIP, allowing an easier application and planning process for subsequent CIP projects. • DFA could provide planning grants to fund comprehensive CIP development in exchange for applicants agreeing to use CWSRF financing for a portion of the CIP projects. • DFA could consider creating a voluntary committee of industry professionals, potentially organized under the direction of a subcommittee within the CFCC, to review submitted CIPs and offer recommendations for more cost-effective project solutions. The committee could ensure a broader analysis of alternatives and better fiscal outcomes for communities. Having access to CIPs from across the state could also help committee members spot opportunities for regional solutions (see Sustainability Goal 6). • DFA could consider modifying its online application system to allow applicants to input their CIPs and update schedules. Project managers could monitor CIP progress and notify applicants when an update is needed. The system could also overlay the CWSRF funding timeline with the CIP schedule and notify applicants when they should complete steps of the CWSRF loan process. 	<ul style="list-style-type: none"> • The Hawaii CWSRF program committed to fund the city of Honolulu's CIP to the maximum extent possible. As a result, Honolulu significantly increased its use of the CWSRF. • Georgia’s CWSRF project ranking system provides points for applicants who maintain a central asset inventory and complete water system map, maintain a long-term water and/or sewer CIP, and fund a dedicated capital improvement reserve from current revenues.²⁶ • Idaho’s CWSRF project ranking system provides points for applicants with a capital budget that is funded and is supported by capital improvement plan.²⁷

²⁶ Georgia Environmental Finance Authority. “2012 CWSRF Project Solicitation Project Ranking Criteria” (2012) <http://www.gefa.org/Index.aspx?page=504>.

²⁷ Idaho Department of Environmental Quality. “Integrated Priority System Water Quality Project Ranking” (2012) <http://www.deq.idaho.gov/media/758074-cw-loan-rating-form-fy13.pdf>.

<p>Sustainability Goal 5: Encourage a robust analysis of alternatives. A robust analysis of alternative project types during project planning would consider whether a low-impact alternative could achieve the desired results with fewer resources and a smaller environmental impact. It would also evaluate whether a water quality solution is the most cost-effective and include consideration of additional benefits such as restoring natural habitat, beautifying a community, or revitalizing developed areas. Alternatives analyses can be encouraged by providing support for project planning activities.</p>		
Current Status	Implementation Opportunities	Examples From Other States
<p>California's CWSRF application process does not currently require an analysis of alternative project types. Applicants typically submit a facilities plan during the technical review phase, which can include an alternatives analysis. However, these analyses typically include a narrow spectrum of alternatives, and the DFA</p>	<ul style="list-style-type: none"> • DFA could consider requiring a robust analysis of alternative project solutions as part of the CWSRF application. This analysis could require evaluation of whether low-impact solutions such as green infrastructure, localized community treatment systems, or efficiency upgrades might achieve the desired results. • DFA could consider developing an automated “triple-bottom-line” tool that evaluates environmental, economic, and social benefits of various types of water quality projects using California-specific metrics. Such a tool could encourage communities to incorporate more sustainable design elements and smart growth features into their projects. For example, the tool could convey the cost-effectiveness of a green infrastructure solution along with estimates of property tax increases and air pollution reductions. The tool might also display the economic and environmental benefits of incorporating energy or water efficiency practices into the project design. An electronic tool could be integrated into California's current online application and project management system to help automate the priority-setting process, reducing demands on the staff. • DFA could consider splitting the CWSRF application process into two paths: one for communities that have already planned and designed a treatment approach, and one for communities that are still evaluating options to address a water quality problem. For the second group, DFA could encourage communities to submit SRF pre-applications identifying 	<ul style="list-style-type: none"> • The Texas CWSRF program requires a robust alternatives analysis as part of the application process. Project alternatives are assessed again during the technical review phase.²⁸ • The Texas CWSRF program offers financial assistance for the planning, acquisition, and design (PAD) phase of a project separately from the construction phase. Applicants who complete the PAD phase of a project within three years will receive priority for the construction phase of the project when it is ready to proceed.²⁹ • Michigan’s CWSRF program requires a systematic evaluation of all potential alternatives and documentation of the reasons why all

²⁸ Texas Water Development Board. “Guidance for the Preparation of Wastewater Project Engineering Feasibility Reports” (2010) <http://www.twdb.state.tx.us/financial/instructions/doc/TWDB-0556.pdf>.

²⁹ Texas Water Development Board. “SFY 2013 CWSRF IUP Solicitation Packet Project Submission Guidelines” (2011) http://www.twdb.state.tx.us/financial/instructions/doc/SFY13/SFY13_CWSRF_solicitation_guide.pdf.

<p>technical review typically occurs after the community has already selected and designed its preferred alternative.</p>	<p>their water quality problems before selecting and planning a treatment option. DFA could train engineering staff (or contract with an outside engineering firm using fee income) to evaluate the water quality problem and recommend solutions that use or incorporate nonpoint source solutions such as land conservation, agricultural best management practices, or green infrastructure. DFA could provide 0-percent planning and design loans for communities that proceed with developing the proposed project option. This approach could help build a pipeline of projects ready to receive CWSRF assistance.</p> <ul style="list-style-type: none">• DFA could consider expanding the priority-setting system to encompass more detailed metrics to evaluate the cost-efficiency of various project types. Additional categories could evaluate the cost-effectiveness of green infrastructure versus conventional stormwater treatment, the cost efficiencies gained by regional consolidation, and energy saved versus cost for project alternatives.	<p>other alternatives were dropped from consideration.³⁰</p> <ul style="list-style-type: none">• The Oklahoma CWSRF program developed an automated tool that evaluates the social, economic, and environmental benefits that are expected to result from a proposed project.³¹• Maryland's CWSRF priority system evaluates the cost-effectiveness of the proposed project for improving water quality.³²
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³⁰ Michigan Department of Environmental Quality. "Securing Financial Assistance Through the Clean Water Revolving Loan Funds" (2012) http://www.michigan.gov/documents/deq/deq-ess-mfs-formsguidance-SRFbook_248823_7.pdf.

³¹ Oklahoma Water Resources Board. *Oklahoma Clean Water State Revolving Fund Annual Report 2010* (2011) http://www.owrb.ok.gov/financing/pdf_fin/CWSRF-AnnualReport2010.pdf.

³² Maryland Department of the Environment (2010) *op.cit.*, p. 14.

<p>Sustainability Goal 6: Encourage project alternatives analyses to consider regional solutions. The most cost-effective wastewater treatment option could require regional cooperation, e.g., through sharing infrastructure or administrative operations with other nearby municipalities. Managing water quality on a regional watershed basis can provide more opportunities for low-impact solutions, such as using green infrastructure and land conservation to reduce downstream treatment needs. Consolidating utility management with nearby jurisdictions can prolong the life of existing assets and keep low-capacity systems operational, possibly eliminating the need to expand lines or construct new infrastructure that could attract unplanned outward growth.</p>		
Current Status	Implementation Opportunities	Examples From Other States
<p>California has largely implemented Integrated Regional Water Management (IRWM), a statewide effort to manage all aspects of water resources on a regional basis. The CWSRF program has frequently provided match funding for projects identified by Integrated Regional Watershed Management committees.</p> <p>The Water Board operates nine Regional Water Quality Control Boards statewide. Regional boundaries are based on watersheds, and the water quality priorities for each region are based on its specific climate, geographic, and hydrologic characteristics. Each Regional Board sets water quality standards, issues discharge permits, and organizes enforcement actions within the region. The funding application for nonpoint source projects and</p>	<ul style="list-style-type: none"> • Because they are delineated by watershed and specific geographical water quality priorities, the Regional Water Boards could provide a good organizational structure through which to pursue regional water quality solutions. SRF staff in many states have found that municipalities can be resistant to regional solutions. The first step in pursuing these types of solutions might be education and outreach to make regional solutions more familiar and acceptable. • DFA could consider working with Regional Water Boards staff and IRWM agencies to organize watershed workshops that demonstrate ideas such as a watershed-based nonpoint source sponsorship and regional infiltration/inflow management programs. Workshops could showcase examples of regional cooperation, such as New York City's source water protection projects that have saved the city billions in treatment costs. • Regional consolidation of utility management could also advance DFA's goal of building capacity in small and 	<ul style="list-style-type: none"> • South Carolina's CWSRF program targets principal forgiveness to viable systems willing to assume ownership and rehabilitate a non-viable system. The principal forgiveness may only be used to repair or replace existing infrastructure, including any facilities needed to connect the two systems. It may not be used to purchase the assets of the non-viable system or for any facility upgrades to accommodate growth.³³ • Rhode Island,³⁴ Missouri,³⁵ and several other states award priority ranking points for regional projects that serve more than one community. • The Texas Water Development Board offers grants for plans that document wastewater service facility needs,

³³ South Carolina Department of Health and Environmental Control. "Clean Water State Revolving Fund Intended Use Plan for State Fiscal Year 2012" (2012) http://www.scdhec.gov/environment/water/docs/srf_cwiup.pdf.

³⁴ Rhode Island Department of Environmental Management. "Rules and Regulations for the Priority Determination System for Federal and State Assistance to Local Governmental Units for Construction of Water Pollution Abatement Projects" (2003) <http://www.dem.ri.gov/pubs/regs/regs/water/ppds2003.pdf>.

³⁵ Missouri Department of Natural Resources. "Construction Grant and Loan Priority System" (2010) <http://www.sos.mo.gov/adrules/csr/current/10csr/10c20-4.pdf>.

<p>programs, development and implementation of Estuary Comprehensive Conservation and Management Plans, and stormwater treatment projects asks how the proposed project complies with the applicable Regional Board program.</p>	<p>disadvantaged communities, which often lack the in-house expertise necessary for planning projects and completing CWSRF application requirements. DFA could consider providing principal forgiveness to systems willing to take over and rehabilitate low-capacity systems.</p>	<p>identify feasible regional alternatives to meet wastewater facility needs, and present estimates of costs associated with providing regional wastewater treatment plants and collection systems.³⁶</p>
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³⁶ Texas Water Development Board. "Request for Applications for Regional Facility Planning" Accessed May 9, 2012.

<p>Sustainability Goal 7: Consider green infrastructure approaches to addressing combined sewer overflows. Green stormwater infrastructure solutions can often have lower impact and be more cost-effective than traditional grey infrastructure projects. This makes them more affordable, which means that the project sponsors are more likely to have adequate funds for long-term maintenance to maximize the life of the asset. Green infrastructure solutions such as rain gardens, landscaped swales, tree boxes, and cisterns also cool urban areas, provide wildlife habitat, and make communities more attractive and vibrant.</p>		
Current Status	Implementation Opportunities	Examples From Other States
<p>Each state CWSRF program is required to direct at least 20 percent of its capitalization grant toward projects that address green infrastructure, water and/or energy conservation and efficiency, or other environmentally innovative activities. California's CWSRF program allocated \$79 million (28 percent) of its \$280 million American Recovery and Reinvestment Act grant to such projects.</p> <p>Water Board staff indicated that many of their borrowers are hesitant to pursue technologies such as green infrastructure unless they offer a relatively short (two to three years) payback period. Nevertheless, the California CWSRF program has a history of funding projects that use innovative green technology.</p> <p>California Proposition 218 might limit DFA's ability to fund stormwater projects since it limits how water and sewer user fees can be used. An applicant might need to assess separate stormwater fees in order to fund these types of projects.</p>	<ul style="list-style-type: none"> • DFA could consider implementing an annual award program (similar to EPA's PISCES) that recognizes the SRF borrower with the most sustainable or innovative project. DFA could send a notice of the award with a description of the winning project and name of the design engineer to all communities on the SRF mailing list, as well as to statewide engineering firms. Design engineers might be more likely to suggest green solutions if their services are publicized via the award. • As part of the SRF technical review, DFA could consider having SRF project engineers discuss green project alternatives with the applicant. SRF engineers could inform communities that incentives like priority points, interest rate breaks, principal forgiveness, and planning grants could be available to applicants willing to incorporate green solutions into their project designs. 	<ul style="list-style-type: none"> •The New York CWSRF program created a Green Innovation Grant Program that provides up to 90 percent of costs for construction projects and 50 percent of costs for design projects that spur innovation in the area of green infrastructure through development or adoption of new technologies.³⁷ •The Kentucky CWSRF program awards bonus points on the project priority ranking for projects that incorporate green infrastructure.³⁸ • In the Maine CWSRF program 50% of the cost of green infrastructure projects (i.e., projects qualifying for the Green Project Reserve) is eligible for principal forgiveness.³⁹

³⁷ New York State Environmental Facilities Corporation. "Green Grants" <http://www.nysefc.org/GreenGrants.aspx>. Accessed May 9, 2012.

³⁸ Kentucky Energy and Environment Cabinet. "Inetgrated Project Priority Ranking System for Wastewater, Stormwater and Nonpoint Source Projects Eligible to be Funded by The Kentucky Clean Water State Revolving Fund" (2012) <http://water.ky.gov/Funding/Funding%20Documents/2013%20CWSRF%20Integrated%20Project%20Priority%20System%20Guidance%20Document.pdf>.

³⁹ Maine Department of Environmental Protection. "Clean Water State Revolving Fund Federal Fiscal Year 2011 Final Intended Use Plan" (2011) http://www.maine.gov/dep/water/grants/SRF/2011/final_2011_iup.pdf.

<p>Sustainability Goal 8: Consider localized community wastewater treatment solutions to address polluting septic systems and encourage responsible management plans. If sited, designed, managed, and maintained properly, localized community wastewater treatment systems (such as cluster systems, community aerobic tanks, small activated sludge plants, sub-surface flow constructed wetlands, engineered wetlands, and package plants) can be a sensible, low-impact, and cost-effective treatment solution. Constructing and maintaining these projects can be more affordable for small communities, and the localized systems can limit the amount of unplanned outward growth that is sometimes a result of centralized infrastructure. Communities without avenues for financing localized community wastewater treatment solutions could address failing onsite systems with centralized sewerage even if it is not the most cost-effective option or if it is inconsistent with the community’s plans for growth.⁴⁰</p>		
Current Status	Implementation Opportunities	Examples From Other States
<p>Since its inception, California's CWSRF program has funded two decentralized treatment projects at a total cost of approximately \$2 million. Historically, there has not been significant demand for these types of projects.</p> <p>As of 2003, California had approximately 1.2 million onsite treatment systems serving 3.5 million people (around 10 percent of the state's population).⁴¹ Since 1990, 10 percent of new housing starts in California use onsite systems. A</p>	<ul style="list-style-type: none"> • As part of its technical review, DFA could consider having SRF project engineers discuss localized community wastewater treatment project alternatives with the applicant. Engineers could also inform applicants of technical assistance resources to help them establish a responsible management entity.⁴³ • DFA could expand existing efforts to coordinate with Regional Water Boards on funding opportunities for community systems in areas with high concentrations of individual onsite systems. Technical assistance and funding could be offered for the jurisdictions to complete comprehensive wastewater management plans, establish responsible management entities to operate and maintain systems, or establish a conduit lending 	<ul style="list-style-type: none"> • Vermont municipalities enter into a Memorandum of Agreement with homeowner’s associations to ensure ongoing maintenance for decentralized systems. • In Minnesota, all unsewered communities seeking CWSRF funding for decentralized systems must create a financing plan that provides a dedicated source of revenue for debt service and operations and maintenance (typically special assessments or user charges); must provide a

⁴⁰ A larger discussion of decentralized wastewater treatment and how communities can help ensure that their wastewater infrastructure choices support community growth and environmental development goals is found in: EPA, *Essential Smart Growth Fixes for Rural Planning, Zoning, and Development Codes*. (2012). http://www.epa.gov/smartgrowth/essential_fixes.htm.

⁴¹ EPA and California State University. *Status Report: Onsite Wastewater Treatment Systems in California* (2003). http://www.swrcb.ca.gov/water_issues/programs/owts/docs/stat_rpt0803.pdf.

⁴³ EPA has developed “Voluntary National Guidelines for Management of Onsite and Clustered (Decentralized) Wastewater Treatment Systems” that discusses the importance of an adequate management program to protect water quality and public health, protect consumers’ investment in homes and businesses, increase onsite system service life and replacement cost savings, avoid transfers of water away from the source by conserving ground water, and eliminate the need to use a community’s tax base to finance sewers. The guidelines are available at http://www.epa.gov/owm/septic/pubs/septic_guidelines.pdf.

<p>2000-2001 survey of California jurisdictions indicated that 7,602 systems are installed and 4,490 systems repaired per year. A number of areas in the state have been identified by the Regional Water Boards as having high concentrations of nitrate in ground water due to onsite systems.</p> <p>The Water Board has released a final draft Water Quality Control Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems.⁴² The policy does not require any changes for homeowners with properly functioning onsite treatment systems that are not located close to water bodies listed as impaired for nutrients or pathogens. However, new systems and systems near these water bodies are required to meet certain requirements, and homeowners might require financial assistance to comply.</p>	<p>structure for localized community wastewater treatment systems through homeowners associations or municipal entities.</p> <ul style="list-style-type: none"> • DFA could consider organizing a workshop for design engineers on new technologies and solutions for water infrastructure. Sessions could focus on "right-sizing" infrastructure solutions and relying on supplemental systems (such as localized community treatment systems and green infrastructure) to handle rare peak flow events or clusters of existing development with failing onsite systems. DFA could offer continuing education credits to attract technical professionals and invite design engineers currently using new technologies to provide guest lectures. • DFA could require applications for centralized sewer expansion projects to produce an alternatives analysis on the feasibility of localized community treatment solutions. • DFA could consider using administrative funds or fee revenue to provide planning grants for municipalities to develop comprehensive regional wastewater plans that would evaluate the best type of treatment option based on the character of the community and plans for growth and develop goals for each area. DFA could commit to funding the projects in the plan within a set timeframe for communities that undertake this effort. 	<p>management plan with a schedule for inspections, pumping, repair, and replacement; and must analyze alternatives using a wastewater treatment hierarchy. Minnesota's CWSRF facility plan review requires consideration of decentralized alternatives in unsewered areas.⁴⁴</p> <ul style="list-style-type: none"> • The Rhode Island CWSRF Community Septic System Loan Program (CSSLP) provides loans to individual homeowners for septic replacement. A local government unit has to complete an Onsite Wastewater Management Plan prioritizing the systems for replacement and must also provide security for the loans via a local taxing authority. Application processing and servicing for the homeowner loans is administered by the Rhode Island Housing and Mortgage Financing Corporation.⁴⁵ • The Iowa Department of Natural Resources developed a design manual on alternative wastewater collection systems.⁴⁶
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⁴² California State Water Resources Control Board. "Water Quality Control Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems" (2012) http://www.waterboards.ca.gov/water_issues/programs/owts/policy.shtml.

⁴⁴ Minnesota Department of Employment and Economic Development. "Small Community Wastewater Treatment Program" http://www.positivelyminnesota.com/Government/Public_Facilities_Authority/PFA_Infrastructure_Funds_Programs/Small_Community_Wastewater_Treatment_Program.aspx. Accessed May 9, 2012.

⁴⁵ Rhode Island Clean Water Finance Agency. "Loan Policies and Procedures: Community Septic System Loan Program" (2005) http://sos.ri.gov/documents/archives/regdocs/released/pdf/CWFA/CWFA_3535.pdf.

⁴⁶ Iowa Department of Natural Resources. "Alternative Collection Systems Technology Assessment and Design Guidance" (2007) http://www.iowadnr.gov/Portals/idnr/uploads/water/wastewater/files/dg_alt_collect_manual.pdf.

<p>Sustainability Goal 9: Preserve open spaces through land acquisition and conservation projects. Funding conservation easements and agricultural best management practices to preserve open spaces that provide source water protection can be an effective, low-impact strategy to reduce downstream treatment needs while preserving rural and agricultural resources. Natural landscapes help define the character of our communities. Parks, natural areas, and scenic landscapes have great economic value. A distinctive landscape can make a community a great place to live, and green space in urban areas is critical for a good quality of life.</p>		
Current Status	Implementation Opportunities	Examples From Other States
<p>The California CWSRF program has provided more than \$67 million for at least six land conservation projects through organizations like The Nature Conservancy, The Conservation Fund, and the Sacramento Valley Open Space Conservancy. While the national average is 4 percent, California spends about 6 percent of total CWSRF funding on nonpoint source projects (including land conservation), and the Trust for Public Land ranked California second in the nation for funding "high impact" nonpoint source projects addressing agriculture, silviculture, and hydromodification.⁴⁷</p> <p>California uses an Integrated Planning and Priority Setting System that ranks nonpoint source projects on the same list as</p>	<ul style="list-style-type: none"> • The California CWSRF program has made a notable commitment to funding nonpoint source projects. As such, it might be a natural next step for it to formalize this commitment through a dedicated nonpoint source funding program. A dedicated program could attract more applicants for nonpoint projects such as land conservation if applicants felt that they were more likely to receive funding. • DFA could consider instituting an agricultural conservation sponsorship program. The CWSRF program could provide an interest rate break for a municipal wastewater treatment plant project that would cover the cost of the municipality purchasing a conservation easement in an upstream area. Easements could be structured to allow the land to be worked for agricultural purposes at a reduced fee, as long as best management practices (e.g., manure management, stream fencing, erosion control, drip irrigation) were implemented. • DFA could consider establishing a dedicated "set-aside" within the CWSRF program for nonpoint source projects such as land conservation. DFA could consider limiting the funding availability to projects that are part of regional blueprints or Sustainable Communities Strategies. 	<ul style="list-style-type: none"> • Ohio⁵⁰ and Oregon⁵¹ CWSRF sponsorship programs provide borrowers funding traditional treatment plant projects with an interest rate break covering the cost for the community to undertake a nonpoint source or conservation project elsewhere in the watershed. In the Ohio program, the implementing organization or landowner must agree to proper implementation and maintenance of best management practices. Ohio's sponsorship program has provided more than \$92 million for nonpoint source projects. • Ohio's CWSRF program provided funding for a conservationist-owned company, Hidden Creek Ltd, to purchase a large tract of highly erodible agricultural land in the Big Darby watershed that was expected to be purchased by a developer. Hidden Creek Ltd designed a sustainable housing development that used CWSRF funding to incorporate vegetated swales, stream restoration, and establishment of riparian habitat, as well as produce materials to educate homeowners and contractors about watershed protection.⁵² • The New York Department of Environmental Protection awarded New York City a \$27 million SRF

⁴⁷ The Trust for Public Land. *Financing Land Conservation with the Clean Water State Revolving Fund System*. (2011) http://cbey.research.yale.edu/uploads/Conservation%20Finance%20Camp%202011/agenda/Tuesday/CWSRF_REPORT_FINAL.pdf.

<p>treatment works projects. However, this combined ranking is not required for nonpoint source projects to receive funding.⁴⁸</p> <p>Although nonpoint source projects often require less planning and design work than traditional construction projects, significant DFA staff time is often necessary to customize financing agreements and handle unique legal, technical, and credit issues.</p>	<p>Although California already funds more of these types of projects than the national average, setting funding targets could generate additional interest from nontraditional borrowers.</p> <ul style="list-style-type: none"> •The NPDES permitting process currently addresses only point sources of pollution.⁴⁹ DFA could consider working with the Regional Water Boards enforcement division to determine whether some of the existing permitting requirements that focus only on point source discharges could be modified to encourage source water protection or a nonpoint source abatement project such as land conservation. 	<p>loan, providing partial funding for \$1.5 billion worth of land conservation, agricultural best management practices, and septic system replacement projects in the Delaware and Catskills watersheds. These low-impact projects allowed New York City to avoid constructing a \$9 billion filtration plant to treat nonpoint source pollution in the city's drinking water.⁵³</p> <ul style="list-style-type: none"> • In 2012, the Texas CWSRF program plans to set aside 7 percent of available funds for nonpoint source and estuary projects.⁵⁴
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⁵⁰ Ohio Environmental Protection Agency. “Water Resource Restoration Sponsor Program” http://www.epa.state.oh.us/defa/wrrsp_faq.aspx. Accessed May 9, 2012.

⁵¹ Oregon Department of Environmental Quality. “Clean Water State Revolving Fund Loan Sponsorship Option” (2011) <http://www.deq.state.or.us/wq/pubs/factsheets/loans/11WQ009CWSRFLoanSponsorOption.pdf>.

⁵² EPA. “Ohio CWSRF Provides Loans for Development Best Management Practices” (2002) http://water.epa.gov/grants_funding/cwsrf/upload/2002_06_28_cwfinance_cwsrf_darbycr.pdf.

⁴⁸ The Clean Water Act defines the authorized uses of CWSRF funds as the following: for publicly owned wastewater treatment works as defined by Section 212 of the Act, for implementation of a nonpoint source pollution control management program under Section 319 of the Act, and for implementation of an estuary conservation and management plan under Section 320 of the Act. The Act requires treatment works (212) projects to be included in a state's Priority Ranking List in order to receive CWSRF funding.

⁴⁹ The Clean Water Act established the National Pollutant Discharge Elimination System (NPDES), which uses a permitting process to regulate systems that discharge pollutants into waters of the United States via point sources (i.e., pipes or sewers).

⁵³ EPA. “New York City Applies for \$27 Million CWSRF Loan for Watershed Land Acquisition” (2006) http://water.epa.gov/grants_funding/cwsrf/upload/2006_12_28_cwfinance_cwsrf_enhanceFiles_Activity2_NY_catskill.pdf.

⁵⁴ Texas Water Development Board. “Intended Use Plan: Clean Water State Revolving Fund” (2011) http://www.twdb.state.tx.us/financial/programs/doc/cwsrf/SFY12_CWSRF_IUP.pdf.

<p>Sustainability Goal 10: Encourage pricing and rate structures that reflect the true cost of construction, maintenance, operations, and replacement of infrastructure assets (with appropriate considerations for disadvantaged households). Committing ratepayers to fund the full cost of infrastructure helps ensure that the project is appropriately sized for the customer base. Sizing infrastructure for excess capacity sometimes leads municipalities to zone for outward expansion to increase the rate base, leading to poorly planned outward growth.</p>		
Current Status	Implementation Opportunities	Examples From Other States
<p>California municipalities have had more difficulty raising water and sewer rates since the 1996 passage of California Proposition 218, which states that "no fee or charge may be imposed for a service unless that service is actually used by, or immediately available to, the owner of the property in question. Fees or charges based on potential or future use of a service are not permitted." Proposition 218 thus limits a municipality's ability to raise rates for projects like treatment plant expansions or stormwater control.</p> <p>Under Proposition 218, increases in water and sewer rates are subject to majority protest proceedings (i.e., written protest from a majority of property owners). Any sewer fees used for other services, like stormwater control, are subject to approval by election.</p> <p>It appears that decentralized solutions are not subject to a Proposition 218 referendum, since fees assessed to finance and maintain decentralized infrastructure directly benefit a specific parcel.</p>	<ul style="list-style-type: none"> • DFA could consider developing a tool for applicants to calculate the anticipated economic, social, and environmental (triple-bottom-line) benefits of a proposed project, providing support for rate increases (see Sustainability Goal 5). • DFA could consider publishing a fact sheet describing alternative repayment sources that have been used in California and other states (e.g., a hotel tax was used in a Thousand Oaks, California SRF project). • DFA could consider using administrative funds or fee revenue to offer technical assistance on improvements that utilities can make, in which the cost of the improvement would be offset by efficiency gains. If the community uses the SRF to implement the recommendations, DFA could structure the loan so that the yearly repayment is equal to the expected annual savings. • DFA could consider having staff of Regional Water Boards meet with communities about using a simple CIP modeling tool (such as those available through the Environmental Finance Centers) to calculate annual rate increases necessary to cover capital reserve allocations and debt service. • DFA could consider providing interest rate cuts, principal 	<ul style="list-style-type: none"> • Indiana's Sustainable Design Incentive Checklist awards points for projects that are selected based on detailed lifecycle cost analysis and for projects whose design takes into account eventual deconstruction.⁵⁵ • The Pennsylvania Department of Environmental Protection produced a web-based training series called "Leadership and Decision Making" that includes four modules targeted to municipal leaders: The Challenge of our Aging Infrastructure, Benefits of Asset Management, Exploring Options for Maintaining Dependable Service, and Your Leadership Decision.⁵⁶

⁵⁵ State of Indiana. "Clean Water State Revolving Fund Loan Program Intended Use Plan State Fiscal Year 2012" (2011) http://www.in.gov/ifa/srf/files/SRF_Sustainable_Design_Checklist.pdf.

⁵⁶ Pennsylvania Department of Environmental Protection. "Water and Wastewater Systems Leadership & Decision Making" (2008) http://www.padepelearn.com/resources/kd/Water_and_Wastewater_Systems_Leadership_and_Decision_Making_Knowledge_Document.pdf.

<p>Many applicants rely on hard-copy CIPs that do not allow them to model various project schedules and user rates.</p>	<p>forgiveness, or other incentives to help compensate for long-term maintenance costs of new infrastructure for projects that include an analysis of these costs and/or a robust asset management plan as part of their application.</p>	
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<p>Sustainability Goal 11: Maximize capital investments that have already been made. An important aspect of financial sustainability is achieving the full lifecycle potential of capital assets, e.g., through enhanced maintenance programs, energy and operational efficiency audits, and asset management (planning to minimize the total cost of owning and operating infrastructure while delivering the desired service levels). Equipment can function longer and more efficiently if it is adequately maintained and operates at maximum efficiency. This approach also helps communities avoid the expense and inconvenience of emergency overhauls.</p>		
Current Status	Implementation Opportunities	Examples From Other States
<p>CWSRF funds cannot be used for operations and maintenance expenses. However, CWSRF funds can be used for adaptive management and monitoring of non-structural and nonpoint source best management practices for up to three years after project completion.</p> <p>California's CWSRF program recently introduced planning loans that can include principal forgiveness. These might allow small communities to plan incremental CIP updates to prolong their assets.</p>	<ul style="list-style-type: none"> • DFA could consider making the Small Community Grant funds more conditional on implementing sustainable practices. For instance, the funds could be refocused to provide free operational efficiency (or energy) audits to identify benefits of reconfiguring or retrofitting existing equipment, automating processes, and optimizing electrotechnologies. The funds could provide additional project grants to recipients that agree to implement the audit recommendations. • DFA could consider producing a video or web-based training for municipal leaders about the importance of investing in infrastructure maintenance. • DFA could consider offering better financing terms if the project sponsor implements low-impact solutions to improve efficiency, such as correcting infiltration/inflow problems, implementing green infrastructure elements, and using advanced treatment technology that increases treatment capacity without expanding the plant's footprint. 	<ul style="list-style-type: none"> • The Vermont SRF works closely with Efficiency Vermont, a state agency that receives operating revenues from a mandatory fee paid by all utilities in the state. The SRF program informs Efficiency Vermont of applications for treatment plant upgrades, and Efficiency Vermont reviews the project to suggest improvements to conserve water and energy. The two agencies also organize a joint workshop for state and private consulting engineers on designing for efficiency. • Maine's CWSRF program offers principal forgiveness for comprehensive process energy audits and for utilities that agree to establish an asset management plan and deposit 2 percent of their annual operations and maintenance budget into an asset management reserve account.⁵⁷ • Missouri's CWSRF program awards additional priority points for applicants that have a water and/or energy conservation plan and for applicants that have maintained an infiltration/inflow reduction program for the past five years.⁵⁸ • The Massachusetts CWSRF program awards projects resulting from an energy audit double the number of points available for energy efficiency as projects without energy audits.⁵⁹

⁵⁷ Maine Department of Environmental Protection (2011) *op cit.*, p. 22.

⁵⁸ Missouri Department of Natural Resources (2010) *op cit.*, p. 20.

⁵⁹ Massachusetts Department of Environmental Protection. "Clean Water State Revolving Fund 2012 Project Evaluation Form Instructions and Guidance" (2011) <http://www.mass.gov/dep/water/approvals/12cwpef.pdf>.

IV. In-Depth Consideration of Most Promising Options for Incorporating Sustainability Into the CWSRF Program

DFA will select and prioritize ideas presented in this report based on available resources and its determination of what is feasible and what best advances its sustainability goals. To help advance implementation of the ideas DFA considered most promising, EPA and DFA explored several of them in greater depth.

California communities understand how important it is to make farsighted infrastructure and water quality protection decisions to conserve resources and maintain a high quality of life. The California CWSRF program can continue to support this philosophy by making the CWSRF program more attractive to communities that are trying to build and develop in a sustainable way. Adding requirements to the loan process could discourage applications, which would undercut DFA's desire to have multiple project applications from which to select the most sustainable and ultimately influence project selection decisions. Instead, the CWSRF program might be able to encourage sustainable projects by reducing administrative hurdles for them, conducting targeted outreach to sustainability-minded communities, providing financial and technical incentives, and routinely including environmental, community, and financial sustainability considerations in all discussions with applicants and the overall management of the program. The options below could help DFA attract applications for sustainable projects within the context of the program's current resources and other priorities.

1. Reexamine the SRF priority-setting and technical review processes to ensure that applicants have given thorough consideration to alternative, more sustainable projects for addressing a water quality issue.
2. Reduce administrative hurdles to funding land conservation projects and decentralized systems by establishing frameworks for processing these types of projects.
3. Explore partnering with the SGC to create a "second chance" for SGC grant applicants and to support work funded by the SGC.
4. Designate a DFA staff member to act as a demand manager for the program, responsible for monitoring community Capital Improvement Plans (CIPs), evaluating marketing needs, making cash flow projections, and helping coordinate Regional Water Board SRF outreach activities.
5. Promote an initiative for "Sustainable Project Special Financing" that provides financing incentives for large utilities to construct projects serving infill areas and for small and/or disadvantaged communities to incorporate sustainable practices into their projects.

1. Reexamine the SRF Technical Review Process

Some minor changes to SRF program materials and processes could encourage applications for and increase funding of the types of environmentally sustainable projects discussed earlier in this report. DFA could consider the following updates:

Online pre-application: In addition to the current project classification system, DFA could consider collecting additional information in California’s online Financial Assistance Application Submittal Tool (FAAST) to identify projects that support community sustainability, such as:

- System rehabilitation.
- Projects supporting new development on a brownfield or greyfield site.
- Projects consistent with regional blueprints or Sustainable Communities Strategies.
- Low-impact solutions such as green infrastructure and localized community wastewater systems.

By collecting this additional information, DFA would be able to better monitor its progress towards funding more sustainable projects. In addition, if these types of projects received a higher priority ranking, applicants might be more interested in pursuing them, even while the CWSRF program is able to fund all projects.

CWSRF Application: DFA could consider structuring the project description section of the application in a way that breaks out the discrete elements of the project. During the technical review of the application, DFA could separate the project into components that will serve existing needs versus new growth and rank each separately and/or offer different financing terms for each. The New York and Minnesota CWSRF programs both use a similar process. New York separates collection and treatment components into distinct projects that undergo separate priority ranking so that the water quality impacts of each portion are reflected accurately. During the technical review, Minnesota CWSRF engineers calculate an “Essential Project Components” percentage to identify the portion of the project that will address existing needs versus growth. Only the portion of the project that will address existing needs is eligible for CWSRF principal forgiveness.

Technical Review: Most state SRF programs require an analysis of alternatives in the facilities plan or as part of the environmental review. California does not. DFA staff have identified their review of alternatives as an area that could be more rigorous, particularly if they had more time to communicate with applicants. One option to enable a more thorough review of alternatives would be to scale back components of the review process that rarely, if ever, identify deficiencies. Large borrowers usually have sufficient technical capacity and resources to contract with outside engineering firms for maintaining capital improvement plans and designing projects. DFA staff might be able to more efficiently use their limited technical review resources by focusing on small and/or disadvantaged communities that need assistance to perform robust alternatives analyses and develop their long-term planning skills.

Another option to improve the technical review could be to form a partnership with a third-party provider to conduct a secondary “sustainability review” and suggest improvements. An example might

be a partnership with the California Energy Commission. When applications for plant upgrades come in, the Commission could do a secondary review of the application to suggest product and system improvements to conserve energy and water. A similar process is used by the Vermont SRF in close partnership with Efficiency Vermont (see Sustainability Goal 11). A third-party reviewer might be especially useful to help small/disadvantaged communities identify project solutions that are less expensive and require less ongoing operations and maintenance, such as advanced decentralized systems, green infrastructure, or leak detection infrastructure.

CIP Planning: Many CWSRF applicants seek funding for wastewater infrastructure projects that might have been planned with little regard to coordination with other public infrastructure investments. In addition, many have already completed significant project planning and design work before submitting an application and might be hesitant to pay again for the planning and design work necessary for a more sustainable project. While there might be some ways around this problem, such as offering redesign grants, this issue highlights the importance of working with communities before they begin the planning and design process to identify sustainable solutions.

DFA could consider encouraging Regional Water Board engineers or third-party providers to provide in-person assistance or training to help small communities with CIP development and overall system management. The California Water Environment Association or other industry or trade groups might be valuable partners in this area. The assistance could also include CIP modeling using a tool such as the Environmental Finance Center’s “User-Friendly CIP” tool.⁶⁰ Modeling water rates, reserves, and debt financing against planned CIP projects can help communities make decisions about when to finance large-scale projects versus when to undertake fix-it-first projects, asset management, or energy/water efficiency upgrades. (See Appendix A for a case study from the Boise State Environmental Finance Center demonstrating the value of CIP modeling).

In assisting communities with CIP development, the Regional Water Board engineers or third-party provider could emphasize fix-it-first approaches, asset management, energy and water efficiency, low-impact

Box 1: In 2009, the state of California requested assistance through EPA’s Smart Growth Implementation Assistance program to create a framework to help local governments determine which combination of greenhouse gas reduction strategies, smart growth practices, and sustainability policies are best for their type of community. The final product from this project offers potential strategies, indicators to track progress, and resources for 10 community types ranging from major cities to rural communities. DFA could recommend this guide to communities seeking to identify and develop policies and programs that improve community sustainability. The guide, *Strategies for Sustainable Communities: A Guidebook Based on California Community Types* is available at <http://opr.ca.gov/docs/StrategiesforSustainableCommunities.pdf>.

⁶⁰ UNC Environmental Finance Center. “User-friendly Capital Improvement Plan (CIP) Tool for Water & Wastewater Utilities” <http://www.efc.unc.edu/tools.htm#CIPTool>. Accessed May 8, 2012.

solutions, and integration of municipal stormwater and wastewater plans. In October 2011, EPA released a memo noting that a comprehensive and integrated planning approach to a municipal government's Clean Water Act wastewater and stormwater obligations offers the greatest opportunity for identifying cost-effective and protective solutions and implementing the most important projects first.⁶¹ Another tool for assisting communities with planning is a framework of community types that can help guide other infrastructure investments to support sustainable communities (see Box 1).

DFA could consider training regional engineers in the use of a project analysis tool, such as the System for Urban Stormwater Treatment and Analysis INtegration (SUSTAIN) tool,⁶² that can help communities in the project planning stage model the effectiveness (and cost-effectiveness) of low-impact project solutions. SUSTAIN also models the social, economic, and environmental benefits of a project that can help build community support for it. Once the CIP is complete, the projects can be rolled into the process to receive DFA planning and design financial assistance or Small Communities Grant funding to implement the CIP.

DFA could consider implementing the CIP development and modeling program as a pilot in one region to evaluate its effectiveness. If the program appears successful, DFA might consider using an incentive program to reward communities that submit project applications as a result of the CIP assistance.

To improve the coordination of infrastructure planning across sectors, DFA could encourage applicants that already have well-developed CIPs for wastewater infrastructure to better integrate them with plans for other infrastructure in the community. For example, municipalities could more efficiently use public resources by coordinating projects that are best done together, such as replacing sewer pipes at the same time that the road under which they run is being reconstructed.

Getting Started: DFA could reevaluate its technical and environmental review of alternatives analyses to improve the review's efficiency and effectiveness in ensuring that applicants have given thorough consideration to all options that could serve the community's long-term needs. DFA could look for ways to achieve this goal more efficiently through innovative approaches to managing the CWSRF program, its communication with potential applicants, and its selection of projects.

2. Reduce administrative hurdles for land conservation and decentralized projects

Land conservation and decentralized treatment projects protect water quality while preserving open space and prevent unplanned outward growth of communities. Such projects help preserve agricultural and natural landscapes that define regional character and have great economic value. However, these

⁶¹ EPA. *Achieving Water Quality Through Integrated Municipal Stormwater and Wastewater Plans*. (2011) <http://www.epa.gov/npdes/pubs/memointegratedmunicipalplans.pdf>.

⁶² EPA. *SUSTAIN—A Framework for Placement of Best Management Practices in Urban Watersheds to Protect Water Quality* (2009) <http://www.epa.gov/nrmrl/pubs/600r09095/600r09095.pdf>.

projects often require extra work by DFA to establish customized loan agreements, work with small individual borrowers, establish repayment sources, and overcome other administrative hurdles.

Several state CWSRF programs have found more effective ways to fund these projects through innovative financing structures and partnerships. For example:

Land Conservation: The Delaware CWSRF's Land Conservation Loan Program has allotted up to \$5 million per year to a five-year pilot program to fund conservation easements and fee simple land purchases via conventional SRF municipal loans. Municipal borrowers with a traditional wastewater treatment project enter into a sponsorship agreement with the Delaware Department of Agriculture or the Delaware Department of Natural Resources and Environmental Control Division of Parks and Recreation or Division of Fish and Wildlife. As an incentive, the interest rate for the traditional project is reduced so that the debt service payments for both the wastewater portion and the land conservation portion are equal to what the payment level for the wastewater portion alone would have been. Wastewater spray irrigation is permissible on the property, increasing the potential for partnership with the traditional treatment project.

Municipalities can indicate on the CWSRF pre-application whether they are interested in participating in the land sponsorship program. Interested landowners are identified through Delaware's Forestland Preservation Program and Aglands Preservation Program. The application review, financial review, and sponsorship agreements are all administered by the agriculture department and the natural resources department, reducing the administrative burden on the CWSRF program. The acquisition of the parcel(s) or property rights must be associated with a demonstrated water quality benefit, and the parcel must exhibit at least one of the following characteristics:

- Contains endangered, threatened, or ecologically significant species or natural communities.
- Valuable to the community as an open space due to its proximity to developing areas or its impact on a view corridor.
- Valuable to the community due to historical or cultural resources or proximity to a historically significant area.
- Includes or contributes to important wildlife habitat or migration corridors.
- Significant agricultural or forestry resources.
- Wetlands, flood plains, or other water resources.
- Significant or unique ecosystems or natural features.

DFA might consider forming a relationship with the California Department of Conservation's Watershed Program. This program's Watershed Coordinator Grants fund personnel to develop watershed management plans. DFA could consider implementing a sponsorship program similar to Delaware's whereby the CWSRF program would provide funding for land acquisition in support of a watershed management plan, with the watershed coordinator providing administrative support for the funding agreement. California's Proposition 218 stipulates that wastewater rates and charges cannot be used for

anything but wastewater, which has made it difficult for the CWSRF to fund land conservation in the past. DFA might need to evaluate alternative repayment sources or sponsorship structures.

Solutions for Polluting Individual Onsite Systems: Like many states, California faces the challenge of dealing with many individual onsite wastewater treatment systems that are contributing to nutrient pollution in already-overloaded waters. For many communities with this problem, the capital outlay and long-term costs of centralized wastewater treatment would be financially unsustainable. Community wastewater treatment systems with advanced treatment technology and proper management can be a cost-effective, long-term solution in such cases. A decentralized solution can also allow communities to avoid the unplanned outward growth that can result from extending centralized infrastructure meant to address water quality impairments due to decentralized systems that have failed. Nevertheless, using decentralized systems to support new development outside of a comprehensive development plan can lead to the creation of isolated pockets of housing that break up large, contiguous agricultural or natural areas and are far from jobs, schools, stores, or other amenities. These systems are most effectively used to address failing onsite systems that serve existing development or to serve new development in areas a community has designated for growth.

As required by the California Water Code Section 13291(a), the Water Board has created a “Water Control Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems” (released March 20, 2012).⁶³ Under the policy, California counties, cities, and special districts (referred to as “local agencies”) continue to be responsible for permitting and regulating onsite treatment systems. However, the policy creates a consistent statewide framework for managing onsite treatment systems to protect water quality.

The owners of most onsite wastewater treatment systems in California are not affected by the new policy until their system stops working properly and must be replaced. For new sites and onsite wastewater treatment systems near certain impaired water bodies, the policy lays out expectations for installation and performance and establishes minimum requirements for permitting, monitoring, and operation.

DFA hopes to provide financial support for local agencies and homeowners that would need to take action under the policy. DFA hopes to encourage localized community wastewater treatment systems such as cluster systems, community aerobic tanks, small activated sludge plants, sub-surface flow constructed wetlands, engineered wetlands, and package plants. Compared to individual onsite systems, localized community treatment systems are generally more suited to having a Responsible Management Entity and formalized operations and maintenance procedures, which might help them to be more financially and environmentally sustainable in the long term.

Because localized community treatment system projects require the involvement of individual homeowners, DFA would likely need to establish a conduit lending arrangement through the local

⁶³ California State Water Resources Control Board (2012) *op cit.*, p. 24.

agencies. Many states have special CWSRF lending arrangements to fund decentralized systems, including individual onsite systems, using a variety of models. Although DFA does not intend to fund individual onsite systems, other states' experiences are potential models for California to consider. Two models, based on programs developed by the Minnesota and Missouri CWSRF programs, demonstrate the wide spectrum of incentives and requirements that can be used in a decentralized funding program. The primary difference between the models is that the Minnesota one requires a public borrowing entity (generally a county) to take over ownership and maintenance of individual onsite systems, whereas the Missouri model allows homeowners to retain ownership of the system and provides financial incentives for homeowners to perform system maintenance.

Missouri CWSRF Onsite Loan Program: The Missouri CWSRF program designed a way to address polluting onsite wastewater treatment systems through a qualified local borrowing authority (generally a county, municipality, or state agency). The CWSRF program would enter into a loan agreement with the local authority, and the local authority would administer loans to individual owners of onsite systems. The local authority would be responsible for accepting applications, coordinating payments to contractors or installers, managing borrower repayments, and making debt service repayments and reports to the CWSRF program. In addition, the local authority would provide free onsite treatment system training to borrowers. The homeowner would maintain ownership of the onsite system and could qualify for a reduced interest rate by attending a training session on proper system maintenance.

The program would not fund installation of new onsite wastewater treatment systems for newly planned or constructed homes or businesses. Using individual septic systems in these scenarios without corresponding development planning can encourage low-density, dispersed development, which can significantly alter the rural landscape and degrade natural resources. This limitation would ensure that CWSRF funds for onsite wastewater treatment systems would be used only to remedy existing water quality problems. Providing an alternative to centralized sewerage in such situations can help avoid the unintended growth that tends to occur when centralized systems are installed only to address failing onsite systems and without a comprehensive development plan.

Although this program was not implemented in Missouri due to state-specific legal issues, it provides a helpful framework for any state considering a similar program. The California CWSRF program could adapt this model by providing technical assistance to help the local borrowing entity determine the best technology to achieve local water quality nutrient goals. DFA could also require the local borrowing entity to serve as the Responsible Management Entity for the system and provide a plan for routine maintenance and repairs, as well as a plan for enforcing homeowners' maintenance responsibilities. While homeowners would still own their onsite systems, they would face financial penalties for failing to participate in the Responsible Management Entity's maintenance plan. For instance, a loan or grant might become due immediately, or the loan interest rate might increase significantly. DFA could identify areas for targeted outreach using Regional Water Boards' data on new onsite permits issued, complaints investigated, notices of noncompliance issued, and repair/replacement permits issued. Figure 1 illustrates how DFA might implement the Missouri model.

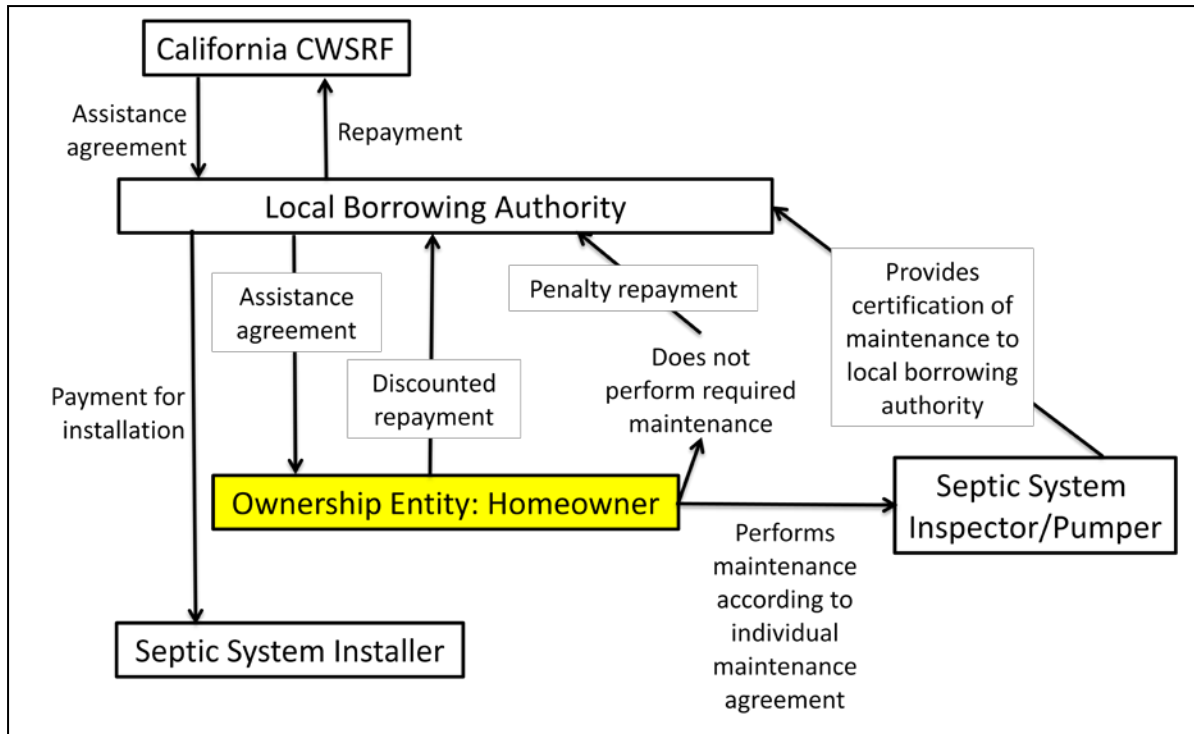


Figure 1: Decentralized Program (based on Missouri model)

Minnesota Public Facilities Authority Small Community Wastewater Treatment Program: Another model is provided by the Minnesota Public Facilities Authority (MPFA) Small Community Wastewater Treatment Program, which provides funding to help communities replace non-compliant septic systems with new individual or cluster system that will be publicly owned, operated, and maintained. This public ownership ensures that onsite systems funded by the CWSRF program will be adequately maintained, allowing Minnesota to retain septic systems as a viable long-term option for wastewater treatment. This option is especially important for a state like Minnesota with large rural areas that would be unable to support the capital outlay and long-term maintenance costs of a centralized system.

MPFA coordinates with the Minnesota Pollution Control Agency (MPCA) to learn about areas that could benefit from the program. MPCA identifies non-compliant properties and, during enforcement communications, encourages communities with high concentrations of non-compliant systems to participate in the Small Community Wastewater Treatment Program.

An important feature of Minnesota’s program is that it provides technical assistance grants of up to \$40,000 for communities to conduct preliminary site evaluations, prepare feasibility studies, and build capacity to construct, operate, and maintain the system. MPFA has relationships with the University of Minnesota onsite sewage treatment program and several licensed septic contractors and can refer communities to these technical assistance providers. During the technical assistance phase, MPFA loan officers meet with the technical assistance providers to share insight on the community’s needs and coordinate with the community to:

- Make sure it has a scope of work.

- Connect it with a technical assistance provider.
- Make sure its plan is consistent with Minnesota statute.
- Process the technical assistance grant agreement.
- Process invoices for reimbursement.

Early in the program, the technical assistance portion could take up to a year, although it is generally faster now that the technical assistance providers have more experience working with the communities.

Upon completing the technical assistance stage, communities can decide whether to go forward with the project. The Small Community Wastewater Treatment Program provides construction financing up to \$500,000 per year for up to three years at 1 percent interest. Disadvantaged communities are eligible to receive a 50 percent grant. If the community is below a certain income level, MPFA will coordinate with other state and federal grant programs, such as the Housing and Urban Development Community Development Block Grant program, to secure other funding for the project.

The public entity must retain ownership of the new cluster system or onsite septic systems and is responsible for inspections, maintenance, and repairs. Participation by private landowners is voluntary, but those wishing to participate must donate a utility easement. The community must establish a maintenance plan and a user charge system for individual homeowners to contribute to the cost of operating and maintaining the system. MPFA approves the financial plan during the financial review for the construction loan. There are no prescribed guidelines for the maintenance plan, but since these plans are typically prepared by a qualified technical assistance provider, MPFA will typically do a quick review to make sure the plan is reasonable (and might ask MPCA to review it as well). The construction loan repayment source varies depending on the borrower. The borrowing entity can be a portion of a public entity (i.e., one geographic area of a county) without taxing authority. In these cases, the repayment can be generated by a special assessment or user fees. The MPFA financing agreement includes the entity's basic responsibilities and financial recordkeeping requirements and can incorporate the scope of work developed during the technical assistance phase. If the entity fails to perform any of the responsibilities included in the loan agreement, it must repay the funds on demand. Minnesota allows projects on the Project Priority List to apply for Small Community Wastewater Treatment funds at any time.

California might consider a similar model that includes a repayment penalty (such as converting a grant to a loan, increasing the interest rate, or making funds due immediately) if the public entity fails to perform operations and maintenance of the system as defined by the loan agreement. Figure 2 illustrates how DFA might implement the Minnesota model.

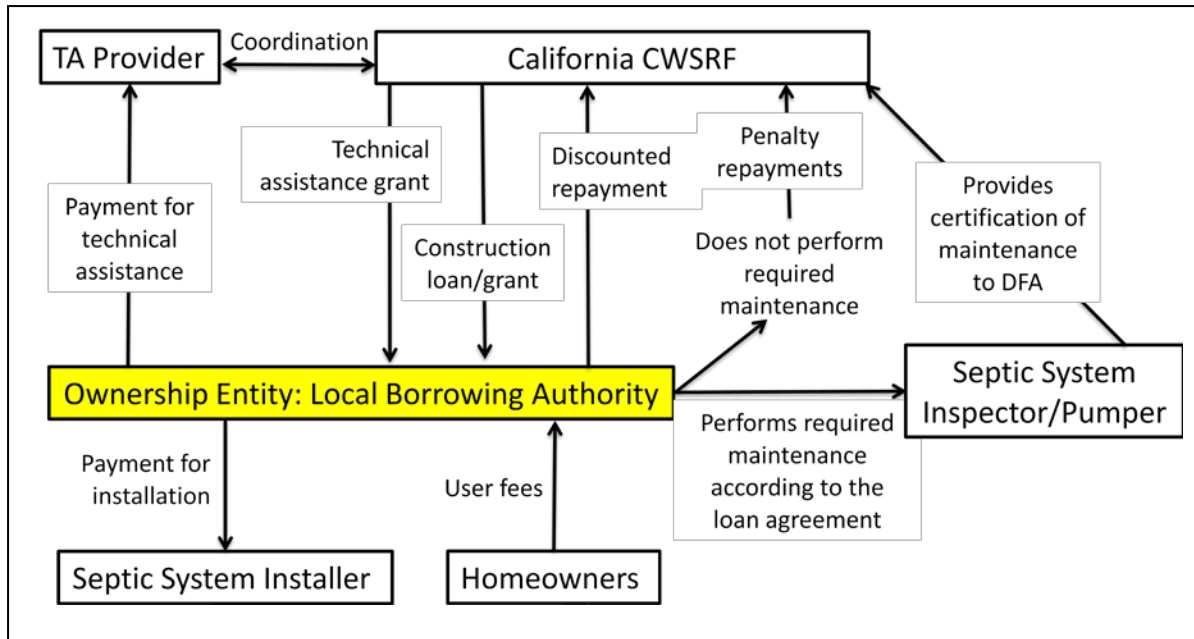


Figure 2: Decentralized Program (based on Minnesota model)

Getting Started: DFA could talk to CWSRF programs in other states that have implemented conduit lending programs to better understand how to set them up. If it seems feasible for California, informal discussions with current municipal borrowers could gauge whether there is interest in either a land conservation sponsorship or decentralized conduit program.

3. Explore Partnering with the Strategic Growth Council

The SGC has two active grant programs: Sustainable Communities Planning Grants and Urban Greening Grants.

Sustainable Communities Planning Grants: Sustainable Communities Planning Grants provide financial assistance to cities, counties, and regions to develop plans to promote sustainability. The SGC awarded \$26 million in Round 1 (2010), leaving \$37 million for funding Rounds 2 (2011) and 3. In 2010, the Sustainable Communities Planning Grants program received 189 applications, 50 of which received funding. Funding is for projects that:

- “Improve air and water quality.
- Promote public health.
- Promote equity.
- Increase housing affordability.
- Promote infill and compact development.
- Revitalize urban and community centers.
- Protect natural resources and agricultural lands.
- Reduce automobile usage and fuel consumption.
- Improve infrastructure systems.

- Promote water conservation
- Promote energy efficiency and conservation.
- Strengthen the economy.”⁶⁴

Urban Greening Grants: The SGC awarded \$20.8 million in the first round of funding (2010), leaving \$42 million to be awarded in Round 2 (2011). In 2010, the program received 134 applications, 44 of which received funding. Both project proposals and planning proposals are eligible for funding. Almost half of the funded projects are installation of green stormwater infrastructure or restoration of riparian habitat. Some portion of the project must be in an urban area, and priority is given to shovel-ready projects to preserve or establish community green areas using natural systems, such as forests, open spaces, wetlands, and community spaces (e.g., community gardens).

DFA might consider reviewing both funded and unfunded SGC applicants to find good candidates to contact about the CWSRF program’s ability to fund projects that might be part of or complementary to projects and plans submitted to the SGC grant program. Because they applied to the SGC programs, many of these communities likely have shovel-ready projects that support community sustainability or plans that could evolve into capital projects.

DFA could consider discussing with the SGC the possibility of partnering to establish CWSRF support for projects and plans submitted to the Urban Greening or Sustainable Communities grant programs. One avenue for coordination might be to invite the SGC to participate in the California Financing Coordinating Committee to take advantage of existing avenues for community outreach and support. The SGC programs each have one to two more rounds of funding remaining and could end up funding many of the applications that were not accepted in the first round. However, the CWSRF program might be able to provide supplemental funding for selected projects, “second chance” funding for rejected projects, or implementation funding for selected plans. DFA could also simply establish communication with communities that are interested in becoming more environmentally sustainable. Many of the activities supported by the SGC funding programs are CWSRF eligible and support the sustainability goals discussed previously, including:

- Improving infrastructure systems (see Sustainability Goal 1).
- Greyfield demolition when replaced by natural systems such as rain gardens (see Sustainability Goal 2).
- Green stormwater infrastructure, including green streets, green roofs, cisterns, and pervious pavement (see Sustainability Goal 7).
- Land conservation (see Sustainability Goal 9).

A specific CWSRF project type that supports sustainable communities and ties in particularly well with the SGC’s Urban Greening Grants is the “greening” of greyfield sites. If a project supports the state’s

⁶⁴ California Strategic Growth Council. “2011 Solicitation: Sustainable Communities Planning Grant and Incentive Program” (2011) <http://www.sgc.ca.gov/meetings/20111102/pgip-guidelines-2011.pdf>. Page 2.

nonpoint source management plan, the CWSRF can be used for the purchase and demolition of greyfield sites such as abandoned buildings and parking lots, as well as the costs to install pervious surfaces such as parks and rain gardens in their place. Depending on its location, this type of project could be eligible for CWSRF funding in California because it would serve to implement the state's Nonpoint Source Program Five-Year Implementation Plan (2003-2008),⁶⁵ which promotes the installation of vegetated treatment systems. This type of project could be appealing to borrowers seeking to make their community more attractive while also addressing stormwater concerns. To date, only the Puerto Rico CWSRF program uses this eligibility. It funded the demolition of a decommissioned wastewater treatment plant and habitat and stream restoration to return the land to its native condition. National CWSRF policy says that the land must remain in pervious condition for the length of the loan period, similar to the requirement that land acquired using CWSRF funds for conservation must remain undeveloped for the life of the loan. The cost to purchase the building, the cost of the demolition, and the cost of the pervious surface are all CWSRF-eligible and can be funded through the CWSRF Green Project Reserve. This particular eligibility is not widely known or used in the CWSRF program, so DFA could develop this project option through a California CWSRF "urban greening" initiative.

Getting Started: Many members of the Water Board Stakeholder Advisory Group have experience working with the SGC. DFA could consider convening a meeting of the advisory group to solicit feedback on this option and brainstorm other ways that the CWSRF program could coordinate more closely with the SGC. DFA could start by identifying CWSRF projects that support SGC goals and exploring other connections between the programs. DFA could then present to the SGC the CWSRF projects and eligibilities that support the programs' shared goals, which could lead to other opportunities for the CWSRF program to help SGC in its work to support the planning and development of sustainable communities. DFA could also consider doing some initial exploring within the advisory group and with CWSRF customers to determine the level of demand for greening demolition funds.

4. Designate a DFA Demand Manager

DFA could consider dedicating a staff person to perform demand management. Although it might take some effort to create the position, demand management is a vital function for a program of California's size and could make a major impact in attracting projects that support sustainable communities such as rehabilitation, repair, and upgrades of existing infrastructure. Additional project applications would also enable DFA to implement policies that reward applications best meeting the goals discussed throughout this report. The responsibilities of the demand manager could include:

- Coordinating a program in which Regional Water Board staff or a third-party contractor assist small/disadvantaged communities with CIP development, CIP financial modeling, and analysis of project alternatives (discussed in Option 1). The demand manager would track these efforts and

⁶⁵ State Water Resources Control Board and California Coastal Commission. "Nonpoint Source Program Strategy and Implementation Plan, 1998-2013" (2000)
http://www.waterboards.ca.gov/water_issues/programs/nps/docs/planvol1.pdf.

coordinate ongoing outreach to the communities that participate in the program. The demand manager would determine which communities, depending on their readiness, could be looped into the process to receive DFA planning and design financing, which could be paired with technical assistance providers to build internal capacity, and which could be offered “fix-it-first funding” to implement CIP projects.

- Monitoring project applications relative to DFA priorities and coordinating marketing campaigns as necessary to attract preferred types of projects.
- Tracking project applications and future project needs relative to cash flow to determine when to conduct marketing and outreach to applicants.
- Serving as DFA’s liaison to the California Financing Coordinating Committee and other partnerships such as with the SGC.

The Water Board currently has approximately 48 personnel years dedicated to the CWSRF program. Although DFA has been very effective at using all available funds to provide new loans, staff resources are stretched by the current workload. The state budget does not allow for hiring additional permanent staff. To create a demand manager, DFA might consider restructuring some of the current staff responsibilities. Options include retasking the current 0.9 personnel year split between the nine Regional Water Boards into one coordinator position, assigning demand management responsibilities to one of the six DFA management personnel years, or taking advantage of existing third-party contracts to reassign some responsibilities.

Getting Started: DFA could begin by evaluating the feasibility of incorporating a demand manager into the CWSRF program. Writing a sample position description for a demand manager position, including qualifications and responsibilities, could help articulate DFA’s needs. An inventory of the current responsibilities and qualifications of existing staff, as well as third-party contract capacity, could reveal if any existing resources would be a natural fit for the position. Organizational structures used by other large SRF programs could be a resource to identify similar demand management positions that might serve as a model.

5. Promote Sustainable Project Special Financing

DFA could consider offering special financing to two types of borrowers: medium or large borrowers with projects to repair existing infrastructure in infill areas or downtowns, and small or disadvantaged borrowers taking steps to implement low-impact, cost-effective project solutions such as green infrastructure for stormwater management or decentralized community wastewater treatment systems. Infill projects can help communities seeking to focus resources and economic activity in areas where past investments have been made, helping to revitalize areas with existing development and thereby helping to divert new development from greenfield areas that serve important ecological functions. Small and disadvantaged borrowers can often benefit most from low-impact projects that help avoid large capital outlays for infrastructure with significant long-term operations and maintenance obligations. In addition, they often help communities achieve multiple goals, such as recharging groundwater and providing critical wildlife habitat.

DFA could publicize this “Sustainable Project Special Financing” on the Water Board’s website, with presentations at municipal conferences, and through direct communication with targeted borrowers identified by the SRF technical review process. DFA could develop funding incentives that are customized to the two types of borrowers:

Large Borrowers With Repair or Replacement Projects	Small Borrowers With Low-Impact Projects
<ul style="list-style-type: none"> • Waive the \$50 million funding cap. • Allow principal forgiveness eligibility. • Reduce closing costs or loan fees. • Waive the debt service reserve requirement for qualified borrowers. • Offer grants or interest rate breaks to cover the cost of planning and design revisions to incorporate sustainable features. • Provide principal forgiveness credit for technical assistance sponsorships to low-capacity systems. • Lower the interest rate on the primary project to cover the cost of an energy or water audit, asset management plan, onsite green infrastructure or renewable energy, or nonpoint source sponsorship project. 	<ul style="list-style-type: none"> • Give priority for DFA Small Community Grants. • Provide planning grants for CIP development if sustainability measures are incorporated. • Provide principal forgiveness credit for asset management and operations and maintenance plans. • Offer 30-year financing. • Consider assessing a fee on expansion projects. Use fee income to pay for technical assistance for low-impact projects for small communities.

Getting Started: DFA could invite target communities to participate in focus groups to provide information on sustainable SRF projects and to obtain feedback on the types and level of financial incentives that would be most likely to encourage sustainable projects and on the types of technical assistance that would be most beneficial. A mix of communities, including some that have had good experiences with the CWSRF program in the past as well as communities that have never used the CWSRF program, would provide a well-rounded perspective on what is working well and what could be improved in the SRF program. Often, hearing positive experiences from other communities can encourage a potential borrower to consider the CWSRF program for the first time. The Missouri SRF used focus groups to gain useful feedback on its interest rate policies and marketing efforts.

V. Conclusion

The ideas offered in this report are for DFA’s consideration as it moves forward with its ongoing efforts to advance community sustainability in the work of the CWSRF program. DFA’s most immediate priority for improving community sustainability is to increase the number of applications for projects that support this goal, e.g., rehabilitation, repair, and upgrade projects to serve areas of existing development and low-impact solutions such as green infrastructure, land conservation, and decentralized community wastewater treatment systems. With a robust pool of applications from which to select the most sustainable projects, DFA could explore further ways to reward and incentivize projects consistent with its goals. Other state CWSRF programs can use this report as a guide for their own exploration of ways CWSRF funding could be used to support a broad range of community sustainability goals.

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