

**STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION**

STAFF REPORT FOR REGULAR MEETING OF JULY 6, 2007

Prepared on June 8, 2007

ITEM NUMBER: 23

SUBJECT: Proposed Funding for a Central Coast Low Impact Development Institute and Augmentation of the Central Coast Ambient Monitoring Program Enrollment

SUMMARY

This staff report recommends that the Water Board allocate Guadalupe Settlement funds for two major projects:

1. Establish and support a Central Coast Low Impact Development Institute (allocate \$2 million). The Institute will have the expertise to implement all aspects of Low Impact Development projects and facilitate the cultural shift to sustainable development on the Central Coast.
2. Increase the Central Coast Ambient Monitoring Program endowment (allocate an additional \$5 million to the endowment). The purpose of this endowment is to increase the Water Board's ability to track the physical condition of our region over time, identify and prioritize problems, and measure our performance at resolving priority problems and achieving our goals. CCAMP is a fundamental tool for establishing our accountability to protect and restore resources for future generations.

These proposed projects are among our highest priorities for implementing our vision and goals over the long term, and will allocate Guadalupe settlement funds toward the best possible outcome for the Central Coast Region.

DISCUSSION

Vision without action is a daydream; action without vision is a nightmare.
Japanese Proverb

Our vision for the future of the Central Coast is:

Healthy Functioning Watersheds

We developed three main goals with respect to aquatic habitat, sustainable land management¹, and groundwater to realize this vision. For the past year and a half, we have been aligning the organization to achieve our vision and goals, and this staff report furthers that effort by proposing the following high priority projects:

¹ Sustainability: The ability to meet the needs of the present while living within the carrying capacity of supporting ecosystems and without compromising the ability of future generations to meet their own needs.”
(U.C. Berkeley Sustainability web page)

1. Establish and support a Central Coast Low Impact Development Institute (allocate \$2 million). This project is conceptual, as described below. If the Water Board approves the concept, staff will bring a fully developed project back to the Water Board by approximately February 2008.
2. Increase the Central Coast Ambient Monitoring Program endowment (increase the endowment by an additional \$5 million).

Our intent is to direct settlement funds toward achieving our Vision and Goals, and the greatest possible outcome for the Central Coast Region over the long-term. The projects are discussed in more detail below.

Central Coast Low Impact Development Institute

This project is conceptual at this time. If the Water Board approves this concept, staff will use the potential commitment of \$2 million to attract additional funds and will work with other organizations to fully develop the project. Our goal is to present a fully developed project to the Board by approximately February 2008. No specific funds would be disbursed or encumbered prior to the Water Board's final review and approval of the fully developed project.

The proposed Central Coast LID Institute would have the expertise to provide these services, or obtain the expertise on an as-needed basis:

- **Technical Expertise:** Provide interdisciplinary technical expertise to envision, design, and implement LID projects and sustainable development. The Institute will have high-level, practical expertise in engineering design and project implementation. It is critical that the Institute be staffed by experts who have successfully implemented all aspects of LID projects and larger scale sustainable development.
- **Socio-economics and Cultural Change:** Provide services to resolve the socio-economic and cultural issues that inhibit LID projects and sustainable development. The Institute will be able to draw from past successes and failures to foresee and address the concerns of stakeholders, including city and county planners, engineers, elected officials, community groups, regulators and the public.
- **Education and Outreach:** Provide educational services to municipalities, agencies, developers, and consultants on the technical, socio-economic, cultural, and environmental benefits of LID and sustainable development. The Institute will work to revise curriculum throughout university level programs (civil and environmental engineering, landscape architecture, natural resource management, etc.) to include the principles and practical application of LID and sustainable development. A cultural shift requires that the next generation of practitioners understand and implement these concepts. It is very difficult to simply add classes or modules to existing curricula. Cal Poly, San Luis Obispo, for example, has been under pressure recently to **reduce** unit graduation requirements in the Civil and Environmental Engineering Departments. However, educating students for sustainable development requires more of a shift in mindset rather than replacing large elements of what is already done in the curriculum; it requires a small change in what educators present and a larger change in how educators present it².

² *Cultivating Sustainable Thinking in Engineering Students: Effective Methods to Inspire Sustainable Engineering Solutions,*

Linda Vanasupa, Katherine C. Chen, and Frank G. Splitt, Materials Engineering Department, California Polytechnic State University, San Luis Obispo

- **Agency Coordination:** Provide guidance and assistance with regulatory permitting processes, and help coordinate agency permitting efforts to implement LID projects and sustainable development, and identify and remove regulatory barriers.
- **Reference Library:** Develop and manage a web-based LID and sustainable development reference library specific to the Central Coast community, including a list of consultants, contractors, LID project designs, LID maintenance manuals, and research sources. The reference material must be user-friendly for technical and non-technical individuals.
- **Leveraging:** Leverage funding and efforts with other organizations to maximize effectiveness and the likelihood of success.

Need for the Project

The Pew Oceans Commission report, *Coastal Sprawl: The Effects of Urban Design on Aquatic Ecosystems in the United States*, describes how watersheds break down and stop functioning due to pollutant loading, impervious surfaces, and habitat consumption. The report also documents the increasing migratory population shift of people to coastal areas in the United States. The Central Coast of California is one of the most desirable places to live in the world, and is located between two major metropolitan areas. These conditions create a high degree of certainty for major development on the Central Coast over the next few decades; the question is not whether the development will occur, but whether it will be managed such that watersheds and their component functions are protected for future generations.

Various initiatives and policies affect development within watersheds. Through open space easements and watershed protection measures, for example, developable lands within watersheds are squeezed. However, such policies are often developed in a vacuum as far as watershed health and functionality are concerned. Consequently, such policies may force development into areas of the watershed that are actually more detrimental to the watershed's ability to continue to function in a healthy manner.

The Water Board has made implementation of LID design standards a top priority to reduce urban pollutant loading, erosion, sedimentation, and stream modifications, and to maintain the natural recharge of groundwater. While providing education and outreach to municipalities, developers, and consultants over the past two years, staff learned two important lessons. First, while many people support the idea of LID, it is often not implemented because many practitioners do not have the necessary practical experience, and they do not yet understand the socio-economic benefits associated with LID projects and sustainable development. As with any new approach, there is misunderstanding, fear, and resistance to change.

The second important lesson is that many municipalities and practitioners believe that implementation of LID design standards is not actually required (staff is addressing this second issue separately, and will provide our recommendations regarding regulatory approaches to implement LID within the next few months).

The answer to the first issue is to provide education, outreach, and LID design and implementation expertise to municipalities, developers, and consultants, and to facilitate the cultural change to sustainable development. The Low Impact Development Center in Maryland is an example of an organization that provides services similar to what we are proposing: <http://www.lowimpactdevelopment.org/>

However, the level of services that we are proposing do not exist locally and Water Board staff cannot provide them.

Therefore, we are proposing establishment of a Central Coast LID Institute to provide these services for the next several years. Based on the Water Board's criteria, the Guadalupe settlement funds are an appropriate source of funding for this priority project, as discussed below.

Guadalupe Settlement Fund Criteria

In July 2003 the Water Board approved a "Blueprint for Expenditure of the Guadalupe Settlement Fund." The Blueprint established seven criteria that must be considered when funding projects. The first five of these were incorporated into the Settlement Agreement. The Water Quality criterion is the only required criterion; but the others are considered when evaluating projects. The LID Institute project meets all seven criteria, as follows:

1. Water Quality Focus:

To be eligible for Settlement Funds, a project must "directly benefit or study ground water or surface water quality and the beneficial use of ground water or surface water," including planning and other activities needed to support the project.

Development and urbanization increase pollutant loading, runoff volume, and discharge velocity above background levels, which causes erosion, creek downcutting, degradation of habitat, and decreased groundwater recharge and base flows in streams. Pollutants in storm water include, but are not limited to:

- petroleum hydrocarbons
- polycyclic aromatic hydrocarbons
- certain heavy metals
- sediments
- pathogens
- bacteria
- trash
- pesticides
- herbicides
- nutrients that cause or contribute to the depletion of dissolved oxygen and/or toxic conditions in the receiving water

The LID Institute's work will result in long-term treatment and reduction or elimination of municipal storm water pollutants and water quality degradation typically associated with increased urban runoff volume and velocity.

2. Geographic Nexus:

The primary purpose of the LID Institute is to implement LID and sustainable development throughout the Central Coast Region, including the Guadalupe area and the entire watershed that drains to the Santa Maria River mouth. The project meets this criterion with respect to direct benefits to the Santa Maria River watershed. Although not all of the funds would have a geographic nexus, staff expects that the initial \$2 million to act as seed money, with larger contributions from other sources. These matching funds could eventually result in a benefit to the geographic area that exceeds the total \$2 million investment from the Settlement Fund.

3. Waste Type or Violation:

Urban areas are a major source of petroleum pollutants. The LID Institute will directly address this issue and therefore the project meets this criterion.

4. Beneficial Use Protection:

Projects that protect or restore beneficial uses of water that were affected by the Guadalupe Oil Field discharges are given credit under this criterion. Those beneficial uses include drinking water and agricultural supply [present or potential water supplies], aquatic habitat [fresh and saline] and aquatic endangered species habitat. The LID Institute will directly assist with the study, restoration and protection of these beneficial uses in all developing and urban area watersheds.

5. Institutional Stability and Capacity: This is a measure of a project proponent's ability to complete the funded project. If the Water Board approves the project at this conceptual stage, staff will define the institutional stability and capacity criteria that any project proponent must meet. Staff is already working on this issue by considering existing organizations, such as state universities, that could be strong candidates.

6. Leveraged Funding:

If the Water Board approves the project at this conceptual stage, staff will begin a major effort to obtain additional leveraged funding. The LID Institute will also obtain additional funding as a routine part of its operations. Municipalities will also provide "leveraging" via the time they commit to participating in LID and sustainable development activities, and via any fees that they may pay for LID Institute services.

7. Region-wide Use or Benefit:

This criterion is described in the Blueprint as: "A project may benefit both a local geographic area and have broader application throughout the region or statewide." As described in number 2, above, the LID Institute will provide major benefits to multiple stakeholders and the environment on a region-wide scale. Our efforts could very well pave the way (pun intended) for statewide improvements in watershed management and protection.

This LID Institute proposal meets the above seven criteria very well, fits with our current Vision for Healthy Functioning Watersheds, and also fits extremely well with the priorities discussed by the Board in late 2004, and raised again by Chair Young at our last Board meeting in June while discussing our Vision for the Central Coast Region. The consensus of the Board at that time was to focus on three issues that are intertwined:

- Riparian Buffer Zones
- Low Impact Development
- Innovative Stormwater Management

Next Steps for the LID Institute Project

Upon Board approval, staff will begin working with potential partners to develop a detailed proposal. The California Polytechnic State University (Cal Poly), San Luis Obispo is a potential candidate for creating and managing the LID Institute. Cal Poly programs typically rank among the top in the nation, and the university is well established, and therefore has the institutional stability and ability required for success. Cal Poly's guiding principle is "learn by doing," which fits well with implementing on-the-ground LID projects and sustainable development.

Having the LID Institute at Cal Poly would also facilitate the inclusion of LID and sustainable growth principles into the university's educational program criteria. Other benefits include avoiding "reinventing the wheel" by not creating an LID Institute from the ground up, and

having ready access to expertise in many different professional fields. Another benefit is the opportunity to expand the LID Institute to other universities in the Central Coast Region and in California. The multi-disciplinary expertise at Cal Poly integrates well with LID and sustainable development, which requires understanding of hydrology, soils, plants, engineering, landscape design, construction, social and cultural issues, etc. Also, the breadth of Cal Poly's disciplines has a strong nexus with the Guadalupe Fund Blueprint criteria for institutional capacity.

Several Cal Poly professors from various departments have expressed interest in LID and sustainable development, and these concepts fit well with the University's commitment toward sustainability, as evidenced by Cal Poly President Warren Baker's 2004 support of the Tallories Declaration, included in the 2006 sustainability progress report, located at: <http://www.facilities.calpoly.edu/campusprojects/projects/sustainability/SusInd06.pdf>

The Tallories Declaration (page 2 from the report) is included here as Attachment 1.

If the Water Board conceptually approves allocation of \$2 million for this project, staff will begin developing a detailed project description, develop partners, identify potential organizations that can provide the necessary services, and obtain additional funding. We will present a detailed project proposal to the Water Board by approximately February 2008.

The second project that staff requests funding for is the Central Coast Ambient Monitoring Program, as described below.

Central Coast Ambient Monitoring Program

This is a request to augment the Water Board's Central Coast Ambient Monitoring Program (CCAMP) endowment with an additional \$5 million to increase the effectiveness of the program. Please refer to item 11 on this agenda for a status report on CCAMP. CCAMP is a primary tool for measuring our performance in achieving tangible results in our watersheds, and additional funding will allow us to add additional parameters, such as biological and physical indices, to our existing basic water quality and flow monitoring.

Our goal is to build a comprehensive program that measures the physical condition of the Central Coast Region over the long term, and reaching this goal will require significant increases in funding, even beyond the request we are making here.

CCAMP is currently funded by three primary sources: annual funding from the State Water Board, and an existing \$2.67 million endowment established by the Central Coast Water Board. The funding we receive from the State Water Board varies significantly (our allocation varied from \$170,000 to \$310,000 annually over the past six years). This year our allocation was initially \$270,000, but State Board staff then reduced that to \$240,000. This variation makes it impossible to plan and carry out an effective program, and the funding amount from the State Water Board is much less than required to cover our basic sampling effort. The basic program includes monthly conventional water quality and flow monitoring at 33 coastal confluence sites, and 33 watershed rotation area sites, and the cost is approximately \$350,000 per year.

The other CCAMP funding source is a \$2.67 million endowment created by the Water Board (from the Guadalupe settlement and the PG&E/Duke Energy settlement). The Water Board created this endowment to provide a stable funding source for CCAMP to carry out the basic monitoring program. We estimate that the existing endowment will provide approximately \$133,000 per year over the long term (based a conservative 5% interest earnings rate).

Assuming an average funding level from the State Board of \$240,000, and \$133,000 from the endowment, our total annual budget is approximately \$373,000 (as illustrated above these are estimates and the actual amounts can vary significantly). The State Board funding

and the endowment funding together are barely sufficient to conduct our basic regional monitoring effort, and shortfalls in funding are common, which means that at various times, we must abandon some of the basic monitoring elements. We also end up spending staff time on monitoring program changes necessitated by funding level changes, which further takes away from our staff's ability to conduct the program.

The Central Coast Region consists of 11,000 square miles, and an annual monitoring budget of \$373,000 is not adequate to effectively cover such a large geographic area. For reference, large point-source dischargers, such as the Diablo Canyon Power Plant, often have monitoring budgets that are similar to or even greater than the CCAMP budget—for a single discharge. Our CCAMP project manager, Karen Worcester, has done a remarkable job of building a program on a shoestring budget; a program that is often referred to as the "model" program in the State. Now that we have developed our Vision and Goals, we need to continue building the program to include biological and physical parameters (in addition to water quality and flow measurements) to adequately measure the physical condition of our region. This task will require major funding increases, and our best avenue is an increase in the endowment. Our longer term goal is to build the endowment to \$20 million, which would generate a stable funding source of approximately \$1 million annually, and would allow us to add groundwater elements, and high level analysis of all CCAMP data.

In the meantime, staff is requesting that the Water Board augment the CCAMP endowment with an additional \$5 million to increase the total endowment to \$7.67 million. This will provide approximately \$383,000 per year in stable funding (assuming a 5% return). If the State Water Board funding averages approximately \$240,000 per year, the total budget would be approximately \$623,000 per year. This level of funding will allow us to better track the physical condition of the Central Coast Region over time by adding key parameters, such as biological and physical indices, to our existing basic water quality parameters.

One of the benefits of an endowment is that the principle amount (\$7.67 million) is never spent. The Water Board can track staff's performance on building and implementing CCAMP, and reallocate the funds if we do not meet the Board's expectations. This funding approach is based on accountability and performance.

We will also seek additional funding from other sources to further augment the CCAMP budget. The program we are building is a major benefit to other agencies and organizations, and we intend to capitalize on that benefit. Also, in March 2007, the Water Board approved the transfer of the existing CCAMP endowment to the Bay Foundation of Morro Bay, which allows us to increase stakeholder participation in the program and better leverage our funding and efforts with other organizations.

Guadalupe Settlement Fund Criteria

The Guadalupe settlement fund criteria are described above in the discussion about the Central LID Institute, and are not repeated here. The Water Board previously considered the Guadalupe settlement fund criteria when it established the original CCAMP endowment, and determined that CCAMP funding meets the criteria.

Guadalupe Fund Status and Options

The fund currently has an unallocated balance of approximately \$8.4 million. The Board's approval of today's proposal would leave about \$1.4 million available in the fund. There is also the strong likelihood of additional funds becoming available from projects that have not been implemented. There are currently two such projects, totaling approximately \$1.5 million. That means there is a strong possibility of having up to \$2.9 million available for other projects.

There are many other options for use of the approximately Guadalupe funds. Staff and the Board occasionally receive inquiries about funding projects, usually individual projects in specific watersheds. The Board has good reason for approving today's proposal. First,

some of the projects in individual watersheds are funded and can continue to be funded through direction of Supplemental Environmental Project monies, or through substantial grant funds that are currently available (about \$29 million recently awarded in our region, with more opportunities coming). Second, today's proposals provide benefit for all the watersheds in our region, are acutely focused on our highest priorities, and will be a giant step toward realizing our own Vision for our region.

Other Projects: Implementing the Water Board's Vision for Healthy Functioning Watersheds

We are developing other projects, such as major revisions to the Central Coast Basin to coordinate our legal authorities and better clarify requirements to protect healthy functioning watersheds. The idea is that we would get professional help to do this major Basin Plan revision (and the Basin Plan would also be a user friendly, web based document). Also, as reported in June 2007, we established Vision teams for aquatic habitat, sustainable land management, and groundwater. Over the next several months these teams will develop project charters that may include significant Basin Plan amendments (such as an amendment to protect riparian systems) or other projects that may require funding. We will present these projects to the Board as they are developed.

Our efforts are aimed directly at addressing the causes of watershed degradation—we must avoid directing funds and other resources toward symptoms. For example, we sometimes get requests for funds to physically restore habitat while the causes of the degradation (such as poor land management practices) are not addressed. These projects may provide a "feel good" benefit, but they do not solve actual problems. Projects that we propose for funding will be based on the principle of resolving the larger scale problems that cause degradation.

Other organizations can also propose projects. Staff would rank these potential projects according to their alignment with the Guadalupe fund criteria and the Water Board's Vision for Healthy Functioning Watersheds. There is no deadline for fully allocating the settlement funds.

CONCLUSION

The Central Coast LID Institute project and augmenting the CCAMP endowment are two of our highest priorities for achieving our Vision and Measurable Goals. The LID Institute will directly address one of the main water quality issues facing the Central Coast Region over the next few decades by providing services that Water Board staff and other agencies cannot provide. These services are necessary to make LID projects and sustainable development a reality on the Central Coast.

Augmenting the CCAMP endowment will allow us to include key biological and physical parameters in the program. This augmentation is a key step in our overall goal to create a comprehensive program that will track our progress in achieving our tangible goals.

RECOMMENDATION

Staff recommends that the Central Coast Regional Water Quality Control Board conceptually approve \$2 million from the Guadalupe settlement account for a Central Coast Low Impact Development Institute. Upon approval, staff will begin developing a detailed project description, develop partners, identify potential organizations that can provide the necessary services, and obtain additional funding. We will present a detailed project proposal to the Water Board by approximately February 2008. No specific funds would be disbursed or encumbered prior to the Water Board approving the detailed project proposal.

Staff also recommends that the Water Board allocate an additional \$5 million from the Guadalupe settlement fund to the CCAMP endowment by adopting Resolution No. R3-2007-0064.

ATTACHMENTS

1. The Tallories Declaration
2. Resolution RB3-2007-0064 approving a \$5 million augmentation to the CCAMP endowment

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