PROJECT CLEAN WATER

FY 2000/2001
Annual Report

County of Santa Barbara, California

Public Works Department
Public Health Department

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EXECUTIVE SUMMARY:

In 1998, Santa Barbara County developed an interdepartmental program to address concerns about non-point source pollution, and related water quality problems in creek and ocean water. These efforts are generally referred to as Project Clean Water. This report covers the second full fiscal year of Project Clean Water programs (May 1999 through June 2000), and includes a summary of related efforts. Prior reports on the program are dated April 27, 1999 (Board update), August 2000 (FY 99/00 Annual Report), and January 25, 2001 (mid-year report).

The County Public Health and Public Works Department, with input from other County departments, local agencies, and stakeholders, have prepared this staff report on the second full year Project Clean Water, with a focus on County activities. The purpose of the work has been to address the Project Clean Water objectives to: 1) reduce bacterial contamination that leads to beach advisories, 2) address public concerns about water quality issues, and 3) meet the requirements of the Clean Water Act's Phase II National Pollutant Discharge Elimination System (NPDES). The County must file a permit with the U.S. Environmental Protection Agency by 2003 showing that we have implemented certain storm water quality best management practices (BMPs). A list of the required BMPs is shown below.

Required NPDES Best Management Practices (BMPs)
Public Involvement & Participation Program
Public Education & Outreach
Illicit Connection, and Discharge Detection & Elimination
Municipal Operations Control
Construction Site Discharge Control
New Development/ Redevelopment Control

Much of the ongoing work has been identified and prioritized by the Project Clean Water Stakeholder Working Groups, shown in Appendix A. The stakeholders group and the working groups continue to be an integral part of the PCW program. The Working Groups were established to define water quality problems, draw resources and ideas from the community, and develop recommended solutions covering such issues as wetland restoration, infrastructure cleaning and maintenance, septic systems, and business incentives. It is through stakeholders that Project Clean Water staff work with the community to establish a water quality management program that will be effective and lasting.

Improving the water quality requires a two-pronged approach. The first is education to promote behavioral changes that prevent the pollution from occurring in the first place,

known as source reduction. The second is to clean up pollutants after they have been released into the storm drain system. Education efforts accomplished by PCW are described in Section 2.2, and include such programs as permanent beach information signs, targeted brochures, a watershed curriculum for our local schools, television and newspaper media campaigns, and a restaurant recognition program. Compliance efforts to complement educational outreach include pollution source identification and clean-up, and as necessary, enforcement action.

Although "an ounce of prevention is worth a pound of cure", there will always be pollutants associated with urban areas in spite of our best efforts at source reduction. To test ways of removing this pollution from runoff, several “treatment control” projects such as storm drain filters and biofiltration systems are underway, supported by a $2 million grant from the State of California. Performance data from these pilot projects will guide the community in how much of a commitment to make in this potentially expensive technology.

Determining the exact sources and magnitude of nonpoint source pollution is a complex task. During the past year, PCW staff continued to analyze the water quality of our creeks to determine what kinds of pollutants are present, and in what concentrations. These tests of the water quality occurred during four separate storm events. Although the data is still too limited for making scientific conclusions, it is clear that urban runoff is adversely affecting our creeks and ocean from many sources. In order to measure improvements of creek water quality, evaluation of “benthic macro-invertebrates” (small insect larvae and other stream dependant life-forms) was begun in spring 2001. All results of watershed monitoring are stored and tracked through a Project Clean Water geographic information system (GIS) to assist staff in mapping, organizing, and analyzing data. Monitoring of the water quality will continue through the upcoming years, providing information on areas that should be targeted for specific treatment or outreach activities, and serving as a baseline of information for evaluating future progress in reducing pollutant levels.

Project Clean Water has established cooperative programs with local institutions of higher learning. In addition to supporting teaching programs at the Santa Barbara City College and University of California, County staff are frequently asked for input regarding research programs. Ongoing work at the University of California through their Long Term Ecological Research project (see Section 3.1), hold promise of a better understanding of local pollution sources, particularly nutrients such as nitrogen and phosphorus. This information will help target cost-effective controls for these pollutants. In addition, researchers are developing better ways to identify pathogenic bacteria which will lead to more meaningful ocean water testing and public health warnings.

Many existing County programs and policies are already set up to protect water quality, such as the countywide Integrated Pest Management Plan, and the Public Health Department/Environmental Health Services ongoing ocean water monitoring program. County staff regularly report potential pollution sources throughout the year from sources such as illegal dumping of trash and other wastes. Project Clean Water staff respond to these and public complaints, and this rapid response has resulted in abatement of significant sources of creek pollution. EHS has also facilitated projects that will eventually allow coastal areas now dependent on septic systems for sewage disposal to connect to sanitary treatment systems. In addition, EHS guided successful efforts to revise the County Code to include

mandatory reporting of septic system servicing, in an effort to identify system deficiencies that may lead to water quality problems.

Additionally, Planning and Development and Project Clean Water staff are completing an evaluation of existing land use policy and development guidelines to improve the way in which new projects are designed and developed with regard to water quality. The Roads Division of Public Works has installed and will continue to test the effectiveness of storm drain filter inserts and other pollution removal technology. Flood Control District and Project Clean Water staff has identified locations for installing additional treatment control Best Management Practices (BMPs) and implementing creek restoration projects. The Parks Department is assisting in the design of restoration projects as appropriate, and is working to provide more "mutt mitts" stations for pet waste clean up in parks and open spaces.

Finally, PCW staff are systematically evaluating all County operations in cooperation with the interdepartmental Green Team to be sure that all municipal operations meet or exceed relevant water quality protection measures. This process will include development of ongoing reporting procedures to document implementation of NPDES requirements.

The community has made clear it's desire for clean creeks and beaches. With this mandate, the divisions and departments within local government, both county and cities, are moving forward to help protect these important resources. This report describes Project Clean Water's progress during the 2000-2001 fiscal year. The program staff continue to implement those program elements that can be accomplished immediately, while laying the groundwork for other long-term tasks that can only be accomplished over a period of years. By the year 2003, when our application for an NPDES permit is submitted to the Regional Water Quality Control Board, we will have a storm water management plan in effect that not only meets the minimum regulatory standards, but also meets our community's high standards.

Table of Contents

1.0 Overview of Project Clean Water

1.1 History

In fall 1998, public concern over extensive beach closures motivated the Santa Barbara County Board of Supervisors to implement Project Clean Water. The goal of Project Clean Water is to protect the public health and enhance environmental quality in County watersheds and at beaches. This project is a joint effort between the County of Santa Barbara, the Cities of Santa Barbara and Carpinteria, representatives of environmental organizations, and community stakeholders.

Working extensively with PCW stakeholders during the first six months of the program, the Project Clean Water team implemented "short term" responses to identified bacterial pollution problems and developed a broader work plan for FY 99/00. A wide variety of recommendations were outlined, including public outreach and education, creek storm water sampling, stream restoration, increased enforcement of measures to protect creek and ocean water quality, and review of County and City internal operations to protect water quality.

Through that work plan, Project Clean Water was also expanded to address Phase II of the National Pollutant Discharge Elimination System (NPDES) requirements of the Clean Water Act. Under Phase II of NPDES, Santa Barbara County and other jurisdictions of similar population density must apply for an urban storm water runoff permit by March 2003, and the program plans adopted with the permit must be implemented by March 2008.

Since many of the initial stakeholder recommendations for water quality improvement efforts are also "best management practices" (BMPs) required for the NPDES permit, the program has been developed to address stakeholder recommendations in a structure which will satisfy the NPDES requirements. For those areas outside the NPDES regulations, staff relies on the stakeholders and Board of Supervisors for guidance.

1.2 Project Clean Water Mission Statement & Goals

The mission statement and goals listed here were developed by Project Clean Water Stakeholders.

¨ **Mission Statement**

To protect the public health and enhance environmental quality in County watersheds and at beaches.

¨ **Program Goals**

- Protect the health of the recreational public and the environment.
- Meet Clean Water Act mandates through compliance with Phase II NPDES Permit requirements and applicable regulations.
- Foster maximum public involvement and awareness.
- Establish stable funding source(s)

1.3 Stakeholder Role & Participation

Since fall 1998, the Stakeholders Committee has been meeting on a monthly basis to review PCW programs and provide community input. The Stakeholders Committee comprises interested individuals, representatives of community organizations, and County and City staff. Their recommendations form the backbone of Project Clean Water, and are incorporated into the work plan along with additional efforts that were identified as relevant.

Members of the Stakeholders Committee also participate in working groups to address specific water quality issues. Working groups focus on topics ranging from septic system and sewer testing issues, to business outreach and media campaigns. These groups meet on an "as-needed" basis, with County and other local agency staff serving as facilitators for each group. During the past year, working group meetings have been less frequent, but more focused as staff work to implement the work program outlined by the groups during the first year. A complete list of working groups is included in the section on Public Information/Public Participation.

Monthly stakeholder meetings are held to discuss progress in implementing various parts of the water quality program. In these meetings, stakeholders are able to report their efforts, discuss current concerns or request more detailed information on any related issue. These informal meetings are open to the public and any interested parties are encouraged to attend. Additional information on the Stakeholders Committee, including meeting times, may be obtained by calling Darcy Aston at 568-3546.

1.4 County-Cities Cooperation

The County works cooperatively with the Cities of Santa Barbara, Carpinteria, Lompoc and Santa Maria and several other special districts (such as the Carpinteria, Goleta and Goleta West Sanitary Districts) to implement Project Clean Water programs. Many regional efforts, such as public information efforts, are jointly staffed and funded. This combined effort has resulted in an effective and cost efficient effort throughout the South Coast. More information on other agencies' efforts are included in the sections on Watershed Monitoring & Assessment (Section 2.4), Complaint Response & Enforcement Activities (Section 2.5), and Intergovernmental Coordination (Section 3.0).

1.5 Project Clean Water Staffing

County staff, both regular and extra help, who were involved in Project Clean Water during FY 00-01 represented various departments for an overall salary cost of approximately $545,000.

Department	Division / Agency	Full Time Equivalent (FTE)
Public Works	Water Agency	3.4
	Roads	0.75
Public Health	Environmental Health	2.1
	Public Health Lab	0.5
Planning & Development	Comprehensive Planning	0.1
General Services		0.1
Parks		0.1
	Total	7.05

2.0 Program Elements

Program elements for Project Clean Water were chosen and developed at the request of stakeholders, with direction from the Board of Supervisors, and with an expressed intent of meeting National Pollutant Discharge Elimination System (NPDES) Phase II requirements. Current program elements are described in this section, with a discussion of progress made in their implementation in the fiscal year 2000-01.

2.1 Best Management Practices for Pollution Reduction

Federal regulations under Clean Water Act Phase II National Pollutant Discharge Elimination System (NPDES) storm water quality regulations, which apply to Santa Barbara County, were published in December 1999. These regulations require municipalities to develop storm water management programs to reduce the discharge of pollutants to the "maximum extent practicable", rather than meeting numerical standards for discharge. For purposes of meeting the regulatory requirements, implementation of Best Management Practices, or BMPs, constitutes compliance with the standard of reducing pollutants to the "maximum extent practicable".

A BMP, as defined by the California Storm Water Best Management Practice Handbook, is "any program, technology, process, siting criteria, operating method, measure, or device which controls, prevents, removes, or reduces pollution." Some BMPs prevent pollution at the source before the pollutants become part of the storm water; others treat the storm water after the water has become contaminated. Source control BMPs tend to be more effective and cost efficient than treatment.

At a minimum, each BMP must meet the following criteria:

- The BMP must address the pollutant(s) of concern
- The BMP should be compatible with surrounding land uses
- The pollution control benefits of the BMP must outweigh the costs
- The BMP must be technically feasible considering soils, geography, water resources, habitat, etc.
- There must be support from a responsible party for long-term scheduled maintenance, a regulating authority to evaluate the successes, and enforcing authority to address failures

Some BMPs are easier, less expensive, and faster to implement; others will require a series of activities combined with structural efforts, cooperation between agencies, or will take time to function properly, such as establishing a vegetated bioswale. The effects of some will be measurable and quantifiable while others, like public education and public awareness, will be more difficult to evaluate. All require maintenance, even if that means updating informational material to reflect new data or to better address the interests of a target audience. Below is a table of the BMP programs required by the NPDES permit.

BMPs Required for NPDES Permit

Required BMP Program	**Examples of Model Programs**
1. Public Involvement & Participation Program	♦ Public Presentations ♦ Involvement of Stakeholder Groups
2. Public Education & Outreach	♦ Target Residential Community ♦ Education for children ♦ Volunteer Activities
3. Illicit Connection, and Discharge Detection & Elimination	♦ Spill/Complaint Response Program ♦ Field Investigation Program ♦ Outfall/Manhole Inspection Program ♦ Site Inspection Program
4. Municipal Operations Control	♦ Municipal Parking Lot Cleaning ♦ Storm Drain Inlet/Catch Basin & Line Cleaning ♦ Corporation Yard Operations
5. Construction Site Discharge Control	♦ Review & Revise Grading Ordinance ♦ Outreach Materials for Construction Community ♦ Review & Revise Plan Review Process
6. New Development/ Redevelopment Control	♦ Adoption of Source Reduction Ordinances/Policies ♦ Outreach Materials for Developers ♦ Revise development review procedures

Since the inception of the program, a number of specific BMPs for storm water management have been developed and implemented. For example public information, education, inspection of creeks for pollution sources and clean-up of identified sources ("illicit discharge control") have been a high priority from the beginning of the program. Several other types of BMPs are under development including expanded source control, specifically municipal operations controls, new development design and maintenance, and construction site discharge controls.

Much work remains to be done in identifying opportunities to reduce pollution sources. This work cuts across departmental lines and is often interdisciplinary in nature. Ongoing efforts conducted by various County departments are highlighted below and summarized in greater detail in Appendix B of the Project Clean Water Annual Report for FY 99/00. To view this report, go to www.countyofsb.org/project_cleanwater.

In 1999, the Santa Barbara County Green Team was formed in an interdepartmental effort to increase resource use efficiency and reduce the impact on human health and the environment from the County's own operations. Several programs implemented by the Green Team, such as the Integrated Pest Management Plan, increase compliance with the BMPs that have been developed for Project Clean Water. Implementation of BMPs by various County departments is discussed below. Efforts of other local government agencies to reduce non-point source pollution are discussed beginning in Section 2.3.5.

2.2 Public Involvement & Participation / Public Education & Outreach (BMPs 1 & 2)

Public Participation and Public Information are two important BMPs. Direction from the community is essential for maintaining appropriate focus, and an informed public builds support for commitment of community resources. In short, a successful program depends on public participation and education. This section provides an overview of the public participation and information program including major achievements of the year.

2.2.1 Stakeholders Committee

In order to incorporate community concerns and ideas into Project Clean Water objectives, the Stakeholders Committee was formed to provide a forum for this input. The Stakeholders Committee comprises representatives of community organizations, staff from Santa Barbara City College and UCSB, and other interested individuals. It is open to any interested individual or organization.

The Stakeholders Committee meets on the second Thursday of each month. County and City staffs provide PCW program updates, and community members are able to discuss any issues of concern. Attendance varies from approximately 10 to 50 people. PCW staff maintains a Stakeholder email and mailing list with over 200 names, and those on the list are noticed of regular meetings, announcements, and other events through the email system and by monthly PCW update reports.

In addition, staff has begun participating in a community effort to form a "watershed council" in Santa Maria. The City of Santa Maria has indicated it will pursue a separate

NPDES permit, but is interested in working cooperatively with the County. The County is responsible for permit implementation in the Orcutt area. In the upcoming year, County staff will work with nonprofit groups and the Regional Water Quality Control Board to organize public forums on water quality.

2.2.2 Stakeholder Working Groups

In addition to the Stakeholders Committee, there are several focussed working groups that meet on an as-needed basis. These working groups evaluate potential problems, develop solutions to specific problems or issues, and make recommendations to County and City staff for implementation. Working groups are modified or created to meet emerging issues. A list of the most current working groups appears below with brief description of the focus of the group.

- **Wetland & Riparian Restoration**: Makes recommendations for restoration and participate in watershed planning activities.
- **Domesticated Animal Waste Control**: Makes recommendations for enforcement/development of policies to control domestic animal waste.
- **Infrastructure Cleaning & Maintenance**: Works with City/County staff to develop policies/procedures for regular infrastructure cleaning & maintenance.
- **Ordinance & Policy Review**: Evaluates existing policies regarding water quality and determine if enhanced enforcement/ additional policies are needed.
- **South Coast Watershed Resource Center** (CEC lead): Develops design and education program for center at Arroyo Burro Beach.
- **Storm Drain Marking**: Develops & promotes storm drain marking program, and research potential development requirements.
- **Youth Education**: Develops & implements youth education program, including classroom presentations, development of local watershed curriculum, and workshops for teachers.
- **Septic System Maintenance**: Reviews county/city policies on septic system maintenance.
- **Sewer System Testing/Maintenance**: Reviews & makes recommendations for sewer system testing/maintenance.
- **Beach & Creek Signage**: Develops and implements permanent signs to provide information on beach status and water quality issues.
- **Targeted Information Campaign**: Develops & distributes targeted information on water quality issue solutions.

- **Hot Line**: Reviews and implements improvements to water quality hotline (1-877-OUR-OCEAN)

- **Business Incentives**: Develops programs to encourage businesses to implement water quality solutions.

- **Illegal Activities:** Considers options for installing signs, trash cans & portable toilets, and dealing with illegal encampments. Examines options for policies to improve vehicle maintenance and reduce vehicle leaks.

- **Media Campaigns**: Develops and implements media campaigns to promote PCW objectives.

- **Water Testing Protocol**: Reviews water sampling and testing protocol, and testing results.

2.2.3 Public Information Accomplishments

Many of the working groups listed above are focussed on public outreach and education. These efforts are considered essential in dealing with nonpoint source pollution, and also fulfill NPDES requirements for Public Education, and Public Input and Participation. The County coordinates closely with the Cities of Santa Barbara and Carpinteria on public information efforts in order to maximize the impact, insure a consistent message, and leverage public funds. In the coming year, staff will also coordinate on public information efforts with the Cities of Santa Maria and Lompoc, as well as sanitary districts and other agencies part of implementation of the overall regional program. Below are some of the highlights of public information efforts..

Targeted Brochures: Targeted brochures for dog and horse owners, gardeners, and residents near creeks were revised with input from staff and the public. New brochures and educational material were developed for automotive servicing and repair businesses and construction contractors. Brochures on general storm water issues ("The Ocean Begins On Your Street") were revised and produced for local use. Brochures are produced in Spanish and English and distributed through appropriate businesses, community groups, at public events, and by County and City departments.

Media Campaigns: A media campaign was run in fall 2000. The campaign focussed on educating the community about general water quality issues, emphasizing the fact that streets and storm drains all drain directly to the creeks and ocean. Outreach also included specific recommendations for individual efforts to improve and protect water quality. These campaigns comprised television, radio, and print media and were intended to reach both adults and younger people.

Watershed Resource Center: Physical construction of the Watershed Resource Center at Arroyo Burro Beach was scheduled for completion in August 2001 under the direction of the Community Environmental Council. Displays are now being completed, docents trained and the Center is expected to be fully operational in August 2001. CEC also offered day camps on water quality issues during summer 2001. The center will be open to the public and will educate the community about local watershed ecology and issues, and how to protect water quality. Other features include a reference library, and a water quality lab. It

will also provide a venue for school field trips, research projects, and community group gatherings.

PCW Hotline: The hotline (1-877-OUR-OCEAN) provides a centralized way for community members to report water quality problems, as well as get information on organizations that work to protect water quality, proper disposal of hazardous waste, and where to get beach status information. Recent improvements to the hotline include direct answering during regular business hours, transferring to emergency response ("911") during other times.

Watershed Curriculum: This project provides educators with a curriculum that focuses on local watersheds and water quality issues. The curriculum is designed for grades 4-8, but can be adapted to other grade levels. The major effort during FY 00-01 was to update and revise the curriculum to create a comprehensive program called "Mountains to the Sea". This program integrates activities, classroom presentations, and field trips from a variety of sources. A workshop was held to train teachers in the use of the curriculum on January 18, 2001, and other workshops are scheduled for August and October 2001. The curriculum is distributed at the workshop, when classroom presentations are made, and at the County Schools Annual Conference in August.

Beach Information Signs: These signs are posted in June 2000 at ten County and City beaches that are ocean water monitoring sites. After discussion with stakeholders and the cities, the message in these signs (Open/Warning/Closed) has been modified to include more information in Spanish. Staff is currently coordinating with State parks to have signs posted in their jurisdiction.

Restaurant Recognition Program: This program recognizes restaurants that implement measures to protect water quality. Program applications, general information booklets for manager/owners, and posters for employees are distributed to South Coast restaurants and other food service facilities. Qualified establishments are recognized on a quarterly basis, through newspaper ads, a framed certificate for display, and recognition before the Board of Supervisors and Santa Barbara City Council. Information is also distributed to restaurants by Environmental Health Services inspection staff.

Agua Pura Program: The Agua Pura program, which is supported in part by funding from Project Clean Water, was created to inform, educate, and engage Chicano/Latino children and parents in water quality issues affecting their community. As of this date, the Agua Pura program has involved nearly 800 school-age youth in hands-on watershed education activities of at least six hours in duration. In addition, the program has reached over 3,500 additional youth and families through public information and outreach activities. Agua Pura is managed by the 4-H Youth Development program of the U.C. Cooperative Extension.

2.3 County Departmental Efforts (BMPs 4 – 6)

2.3.1 Public Works Department

Two divisions of Public Works, Roads and Water Resources, play a significant role in directly implementing BMPs. A third, Solid Waste and Utilities Division, has independent water quality requirements which are consistent with the objectives of Project Clean Water, but which are required under different regulations.

Roads Division

The County Roads Division has three main responsibilities in Project Clean Water: testing pollution removal technology in existing facilities, testing the effectiveness of street sweeping in selected areas, and implementing new BMPs in their construction and maintenance operations.

The County Roads Division is currently investigating various filters available for removing pollutants from street storm water runoff. Such filters, often referred to as storm drain inserts, are designed to filter or trap pollutants from street runoff and are installed within the catchment basin under the lip of the drain inlet. Under high flow conditions, filters are designed to be bypassed to prevent flooding. These investigations include field testing selected systems and ongoing evaluation of other available technologies.

The County Roads Division is testing two systems in a pilot program, which is described below. One is installed in Isla Vista, and the other is installed in a commercial/industrial area of downtown Goleta. The two installations will be evaluated in terms of effectiveness (amount of waste kept from the ocean) and overall maintenance costs by County staff.

United Storm Water, exclusive vendor of the DrainPac™, was selected to install the DrainPac™ filters at the Isla Vista site. Specific storm drains in Isla Vista were selected due to historical problems with trash accumulation at these particular drains. Two storm drain curb inlets were installed with the filter, designed to remove large particles, trash and debris. Although there are many different types of DrainPac™ filters, including some which can remove hydrocarbons, grease, and metals, this particular filter was selected for Isla Vista because of the large accumulation of trash from the densely populated residential and commercial area.

Although United Storm Water can also provide installation and maintenance, the Roads Division will maintain these initial systems to develop a better understanding of filter efficiency and maintenance issues.

AbTech Technologies, vendor of the OARS filter basket, was the selected technology at Orange Avenue in Goleta where runoff from automotive shops and other commercial industries is considered a potential source of aquatic pollutants. This commercial area drains into San Jose Creek, which discharges into the Goleta Slough. This filter contains a basket supporting a media filter composed of absorbent polymers. This insert not only traps large particles and trash, but also absorbs free oil and grease. The filter basket, or cartridge, must be regularly replaced. The schedule for replacement is part of the pilot study evaluation process, but replacement is expected once per year (or more frequently under adverse conditions).

The use of such filters has limited applicability. For example, there are over 1,400 stormdrain drop inlets on the South Coast. Equipping and cleaning a filter at every inlet would be an inappropriate use of funds and staff. Furthermore, these technologies have been tested by third-parties and shown to be ineffective in many applications. The most common problem associated with drop-inlet filters is lack of maintenance, and the most common application of the filters is in new development where accountability for long-term maintenance is not guaranteed. Therefore, use of filters will be considered carefully for appropriate locations within the County. Other technology including “inline” devices for storm drains and

"biological treatment" are being evaluated as part of the "Treatment Control BMP Pilot Project" grant from the State fo California discussed in Section 5.3.

A pilot street-sweeping program was also implemented by Roads. This $25,000 pilot-scale street-sweeping program was conducted in several areas to remove sediment, debris, and other material from the roads with the goal of reducing the pollutant loading to creeks and the ocean. The areas swept include: Montecito (17.38 lane-miles), Summerland (7.97 lane-miles), Goleta (10.48 lane-miles), Vandenberg Village (2.76 lane-miles).

The table below shows the areas where street sweeping is ongoing, and the amount of material removed. Beyond simply measuring the volume of material hauled off the streets, much of our evaluation rests on prior studies conducted in recent years that demonstrate mixed results in protecting water quality (Sutherland 1997, Schueler 2000, Alameda County 1994).

The reason there are mixed results is because many factors affect the success of street sweeping. For example, the type and technology of the streetsweeper, frequency and timing of sweeping in relation to storm events, condition and type of road swept (curbed, parked cars, etc.), the nature of the catchment or watershed that produces runoff, and even the operator's skill all affect the outcome. Therefore, it cannot be conclusively stated that street sweeping always improves water quality. It then becomes a question of budget and priority to focus on those efforts that are most effective. Currently, we plan to continue limited street sweeping and to focus on areas where parked cars don't inhibit the equipment, land use tends to generate trash and contaminated particles (i.e., business and commercial areas that are highly impervious), and focusing the timing of our efforts to precede storm events whenever possible. Recommendations for next year include adding areas in Orcutt and Goleta.

Summary of Street Sweeping Results 2000 / 2001

Date Location	Cubic yards	Subtotal (cu yds)
November		80
Montecito	22	
Summerland	15	
Goleta	27	
Vandenberg Village	16	
December		45
Montecito	17	
Summerland	10	
Goleta	18	
Vandenberg Village	Not swept	
February		35
Montecito	14	
Summerland	5	
Goleta	16	
Vandenberg Village	Not swept	
April		104
Montecito	15	
Summerland	6	
Goleta	23	
Vandenberg Village	18	
Ocean Ave.	34	
Miguelito Cyn.	8	
TOTAL CU YDS		**264**

Water Resources Division

The two sections of the Water Resources Division, Flood Control and Water Agency, implement key parts of Project Clean Water. The Water Agency administers the overall program, manages implementation of several BMPs, and is mapping the area's storm drain network, while the Flood Control District is an essential presence in the creeks, provides technical support for restoration efforts, and is mapping the County's stormdrain network.

Water Agency

In addition to administering Project Clean Water, the Water Agency coordinates implementation of BMPs including lead roles in Public Information and Public Education discussed in Section 2.2, and evaluation of facilities for Municipal Operations Control. An important part of Municipal Operations Control is evaluation of the benefits and controls of retrofitting existing storm drains to reduce pollution not eliminated through source control efforts.

An important effort coordinated this year by PCW staff is a project to install treatment control BMPs at locations throughout the South Coast. The goal is to focus on technologies that can reduce pollution from nonpoint sources in areas where source control measures are difficult or may result in inadequate protection. This project is described in detail in Section 5.2.

In addition, Water Agency staff oversee consultants working on projects such as the review of existing planning policy to protect water quality, and reviewing operating practices and developing storm water pollution prevention plans for County facilities. These efforts are described below. Water Agency staff also manage the water quality sampling program, which is described in Section 2.4.

Water Resources Division-Flood Control District

The Santa Barbara County Flood Control District, as part of their mission to prevent flooding, conducts annual maintenance activities in certain local creeks and channels. These maintenance activities include desilting and debris basin maintenance, which benefits water quality by removing sediment material that may contain attached pollutants. Flood Control has completed the first phase of storm drain mapping in unincorporated areas. The second phase, which includes verification of the accuracy of the storm drain maps in the field, will begin in FY 01/02. The Flood Control District will continue to work with the Infrastructure Working Group to help identify opportunities where water quality benefits can be integrated with flood control practices, and will develop a process to incorporate storm water quality design guidelines into their development review process. (PCW and P&D are working together to develop development and construction guidelines. These guidelines are being developed by the Planning and Development Department.) Flood Control staff have also provided support for the annual creek assessments, restoration projects, and the hydrogeomorphic assessment project (see Section 2.4.5). In addition, Flood Control personnel continue to play an essential role in reporting creek contamination found during their routine activities in the creeks.

2.3.2 Planning and Development Department

The Planning and Development Department (P&D) provides environmental review of most new developments, and as such can place water quality protection measures as a condition of new project development. Also, under the California Environmental Quality Act (CEQA), P&D must evaluate the potential environmental impacts of any project requiring a department action. The department's major areas of authority and oversight are described in:

- P&D's Guide to Conditions of Approval and Mitigation Measures, which addresses such things as solid waste management, storage plans for pesticides and other chemicals, erosion control measures, restoration of graded sites

- County of Santa Barbara Environmental Thresholds and Guidelines Manual

- Santa Barbara County Comprehensive Plan (Agricultural Element 1991) , Land Use Element, Hillside And Watershed Protection Policies, Coastal Plan Policies, and Grading Ordinance No. 3937

- Adoption of "conditions of approval" for new development projects. Per AB 3180 (PRC 21081.6), P&D has established a program to monitor CEQA mitigation measures adopted as conditions of approval on new development projects.

- County Grading Ordinance, which includes preparation and implementation of erosion control plans

- Comprehensive Plan Elements: Recent updates have been primarily in the form of Community Plans for Goleta, Montecito, Summerland, Los Alamos, and Orcutt. The Toro Canyon Plan is in progress, and the Santa Ynez Valley Plan will be initiated in the near future.

Where water quality impacts are anticipated, new developments are required to participate in riparian and or wetland restoration. Creek restoration plans are included in P&D's Standard Conditions and Mitigation Measures.

During this year, P&D continued its review and evaluation of the grading ordinance, and began evaluation of the zoning ordinance, discretionary review and compliance process, and comprehensive planning policies in order to determine the degree of existing compliance with the upcoming NPDES Phase II regulations. The ongoing results of these efforts will be reported during FY 01-02. Some recommendations (such as revisions to the Thresholds and Guidelines Manual) could be implemented more quickly, whereas others may take longer to address, such as policy review in the local coastal plan, Comprehensive Plan Elements, and various community plans. A draft evaluation of the County's land use plans and policies will be subject to public workshops in September 2002. Completion of this analysis will allow development of design guidelines for projects to incorporate water quality control measures.

2.3.3 Public Health Department

The Public Health Department plays an essential role in Project Clean Water and several related programs. The Environmental Health Services Division (EHS) provides staff for PCW for technical and administrative functions and implements the related Ocean Water Monitoring Program and the Liquid Waste Program (oversight of all septic system permitting). The Public Health Laboratory performs all bacteria testing done by PCW. PHD also administers the Tobacco Settlement funding as specified by the Board of Supervisors, source of 50% of the PCW operating budget.

Environmental Health Services

Environmental Health Services implements many BMPs generally designed to reduce or control sources of pollution. EHS also performs weekly testing of ocean water in the

surfzone of many popular beach areas of Santa Barbara County. Bacterial levels are determined by testing ocean water samples at the County Public Health Lab. As the ocean is the ultimate receiving water for the storm drain collection systems in the County, this data is helpful in examining long-term trends in water quality and evaluating overall BMP effectiveness.

In addition, EHS compares test data to known public health standards. When these standards are exceeded (indicating an increased public health risk), EHS notifies the general public in a variety of manners including:

- posting of warning signs at the beach and nearby bulletin boards
- newspaper, radio and television announcements
- 24-hour telephone hotline for recorded results
- posting of test results and beach status on the website (www.sbcphd.org/ehs)

This practice is consistent with NPDES Phase II requirements for Public Education and Public Input and Participation.

Another EHS program is the Community Health Food Program. Nine District Specialists perform routine as well as complaint investigations at all retail food facilities. EHS has expanded their normal investigation techniques (such as time and temperature controls for perishable foods) to include storm water management activities. Due to increased public awareness, EHS has received a greater number of complaints associated with unlawful discharges from permitted food facilities. Illegal activities include floor mat and floor wash down discharge to storm drains, when these discharges should go to into the sanitary sewer. EHS responds to each complaint and takes appropriate enforcement actions as necessary to prevent continued discharges.

EHS has also cooperated with Project Clean Water staff and the City of Santa Barbara to create an outreach and recognition program for restaurants that have established good operational practices that prevent the discharge of liquid waste off-site and into storm drains. Applications for this recognition program have been distributed to all South Coast restaurant owners/managers. The first two rounds of these quarterly awards have been distributed. Qualifying restaurants receive recognition before the Board of Supervisors and Santa Barbara City Council and in the press, as well as an award certificate to display in their business. This program is consistent with NPDES requirements for Public Education as well as Public Input and Participation.

Septic System Servicing, Inspection & Replacement

Through the EHS Liquid Waste Program, Sanitary District staff and EHS technicians investigate reports of illegal and/or illicit discharges of liquid waste onto the ground surface and/or into the stormdrain collection system. In many cases, discharges are caused by faulty sewer laterals, sewer mains or failing septic systems. In many coastal communities, septic systems have been shown to exacerbate water quality problems (e.g. Los Osos, CA; Florida Everglades, etc). System deficiencies require repairs and or upgrades as necessary by current septic system standards. Correction notices are presented to landowners and either EHS or Planning and Development's Building & Safety staff inspect repairs.

In April 1999, Environmental Health Services, in conjunction with a broad-based coalition of community support, revised Chapter 29 of the County Code to include mandatory reporting of septic system servicing and inspection. This reporting system of voluntary septic system servicing has revealed operational problems with many existing septic systems. At the request of the Board of Supervisors, EHS convened a Working Group to explore mandatory servicing and inspection of septic systems.

The Working Group has worked through many iterations for mandatory servicing and inspection and has developed a draft ordinance. At the May 1, 2001 Board of Supervisors Hearing, the Board of Supervisors approved the recommendation of the Public Health Department to delay further discussions and actions regarding mandatory servicing and inspection pending the outcome/recommendations of the septic system sanitary survey.

Concurrent with these efforts described above, EHS is supporting the efforts of several local community groups (e.g. Heal the Ocean, CURE, etc.) to provide incentives to parcel owners using septic systems to convert these systems to sanitary sewer. Many municipal and special districts (sanitary districts) are offering reduced costs to homeowners to hook-up to existing sewer mains. The County recently received $1.75 million in a one-time state budget allocation to offer low-interest loans to homeowners to facilitate installation of sewer laterals and destruction of existing septic systems for these conversion projects. EHS estimates that there are more than 600 parcels countywide that are using onsite sewage disposal systems where sewer mains exist at their parcel boundaries.

These conversion projects should be much less problematic than areas where no sewer currently exists. However, local environmental coalitions such as Heal the Ocean have been very effective in exploring expansion of sewer infrastructure. Several highly visible projects are in the planning and development stages to bring sewer to the Rincon Point community, Sandspit Road , Sandyland Cove, Padaro Lane and Beach Club Road areas. Many other areas such as Horizon Drive and Stadium Place in the Santa Ynez Valley, Yankee Farm Road in Santa Barbara, and many other areas are also exploring conversion opportunities. A portion of the $1.75 million state funding is designated to assist with these sewer expansion projects through the development of preliminary feasibility studies and potentially for the necessary environmental assessments.

2.3.4 Other County Departments

Project Clean Water is an interdepartmental program. The departments discussed below have programs separate from Project Clean Water but which are essential in the protection of water quality. Project Clean Water staff acknowledges the important role these other programs play in the protection of the public and our local environment.

Fire Department – Protection Services

Labeling and storage of hazardous material is within the jurisdiction of the County Fire Department. For new businesses that use or store hazardous materials, conditions of approval are included in the standard conditions and mitigation measures that require a storage area for pesticides, herbicides, and fertilizers designed to contain a spill. In addition, a Hazardous Materials Business Plan must be submitted to the Fire Department for review and approval. The Fire Department is responsible for inspecting sites and monitoring for compliance with hazardous materials management.

Parks Department

The Mutt Mitt program consists of providing pet waste disposal bags at various County parks for use by visitors. This program has proven to be quite successful, and the county is currently in the process of erecting new stations and more visible signage at various county parks and trails. The Parks Department is soliciting sponsors to help fund individual Mutt Mitt stations.

Grant money is being offered to any non-profit organizations that are interested in organizing creek or beach cleanups. In 1998, seven groups participated in the beach cleanup program, dropping to four groups in 1999. No groups have applied for this funding to date.

Two storm drains at Arroyo Burro Beach Park were retrofitted with filtration devices to remove sediment and oils and grease generated from the parking lot as part of the ongoing project to build the South Coast Watershed Resource Center at the site of the old ranger station. The selected vendor of the treatment technology provided material for use in presenting and explaining how the treatment system operates. Providing public education on water quality awareness is part of the Center's goal.

The Parks Department is currently working with PCW and EHS staff to find funding for upgrades of the septic system in Jalama Beach Park and to connect the Rincon Park sanitary facilities to a proposed sewer line to the Carpinteria Sanitary District.

The Parks Department has continued to focus on keeping the drainages and creeks that pass through County parks and open spaces clean and litter free. The Department, through the recently developed Integrated Pest Management Plan, seeks to minimize the use of pesticides at all locations. For example, Isla Vista Park and five Isla Vista beach accesses are being maintained organically, i.e. no synthetic fertilizers or pesticides are used in their maintenance. In addition, Parks is seeking funds to purchase a machine that utilizes steam to kill weeds, in order to reduce the use of Roundup and other chemicals which can end up in creeks and the ocean.

2.3.5 Sanitary District Programs

In general, Project Clean Water coordinates with all Sanitary Districts on such issues as:

- Illicit discharge detection
- Regional water quality monitoring
- Incentives for septic to sewer conversions
- Geographical Information System data sharing

Goleta West Sanitary District

The Sanitary District Act of 1923 gives the District broad powers for garbage, sewage and storm water systems collection and disposal within the District. The District has maintained and operated a street sweeping program since 1961, and sweeps the entire District (about 5 square miles) twice per month. The District has also provided reimbursement to community groups for paint and materials to stencil storm drains with the message “Don’t dump, drains to ocean”.

The District has become involved with Project Clean Water in order to have a role in developing long term NPDES Phase II Permit activities. Some areas in which the District has agreed to work with PCW includes:

- Determine whether existing street sweeping program can be improved to maximize water quality benefits;
- Locate and design storm drain retrofits;
- Perform maintenance on catch basins and new storm drain retrofits;
- Locating and reporting illicit connections to the storm drain system;
- Continue the District's Municipal BMPs (maintain good housekeeping practices and eliminate potential District sources of pollution and contamination of the creeks and ocean.)
- Continue the District's Collection System Maintenance program to locate and seal leaking pipes; eliminate cross-connection locations; and
- Continue to develop a program for public involvement, building upon the work established by PCW.

Goleta Sanitary District

The Goleta Sanitary District serves the Goleta Valley except for the western portion, which is served by Goleta West Sanitary District. The District has an NPDES permit for point source discharge of pretreated wastewater to the ocean in their outfall, approximately one mile offshore and about 100 feet deep.

The District's NPDES permit has a component that regulates stormwater onsite at their facilities. Goleta Sanitary District implements many BMP's designed to reduce pollution to stormwater onsite, but also within the Sanitary Districts sewer collection system. New technological tools have facilitated an ongoing maintenance program for the District's sewer system, which reduces potential for domestic and industrial wastes from entering creeks, stormdrains, and groundwater. Some BMP's that Goleta Sanitary District has incorporated into their operations include:

- Good housekeeping and preventative maintenance of facility equipment and machinery.
- Smoke testing of the District's sewer system has been completed and continues to be ongoing as part of their maintenance program. Smoke testing is used to detect interconnections and leaks (cross connections) between the sewer system and the stormdrain system, groundwater, and creeks. The District also performs smoke testing to detect illicit storm drain connections to the sewer, including residential rain gutters and other hard piped connections collecting surface runoff to the sewer. Diverting stormwater discharge away the sewer prevents sewer overflows to storm drains and creeks in wet weather conditions.

- Closed circuit television video of sewer lines is part of an ongoing maintenance program that helps the District assess the condition of the sewer lines. As part of their maintenance program the District can prioritize problem areas and detect and fix leaks, plugs, rootballs, oil and grease buildup, and replace aging sewer lines. The District's sewer system has been televised; it takes two to four years to televise the entire district.

- Goleta Sanitary District closely monitors the sewer system using a computerized database and mapping Geographic Information System (GIS). The GIS contains data on location, age, size and construction of the pipelinesand was used to create maintenance plans for the 127-mile pipeline system. Use of a mathematical hydraulic model in conjuction with the GIS system helps predict wastewater flow during wet weather conditions. The model helps predict when wastewater flow might receive too much storm water discharge should the stormwater enter the sewer system. By use of model and pumps the District can better control sewer overflows from getting in the stormdrains systems or creeks. The model also helps the District to assess the structural condition and capacity of their sewer lines as residential and commercial development continues to grow. As part of the District's Master Plan, which plans to one to ten years, data taken from their model and from projected growth rates the District is able to predict the future discharge rates and plan ahead to meet those demands structurally and financially.

- Replacing aging sewer lines along Atascadero Creek, between Walnut Lane and Ward Drive using the pipe bursting technique. Pipe bursting involves cutting into a pipeline at selected points and inserting a thick flexible plastic replacement pipe. The replacement pipe is pulled through the existing pipeline bursting it apart underground. The pipe-bursting method of replacing old sewer lines creates fewer disturbances on the surface helping to protect the sensitive creek environment. In all 7000 feet of sewer lines were replaced.

- Development of public education programs. The District holds workshops for contractors, plumbers, engineers, other industrial and professional groups and classes for young people to teach them how to prevent wastewater contamination. They also have a website at (www.goletasanitary.org), tours of the facility, newsletters, and brochures.

Since many of the Districts programs help achieve Project Clean Water objectives, several cooperative efforts are being developed. These include reporting of data from smoke testing, public information and education, and cooperation in the design of treatment control facilities.

Carpinteria Sanitary District

Project Clean Water has been coordinating and supporting the Carpinteria Sanitary District as it seeks funding for septic to sewer conversion projects at five locations on the South Coast. Prop 13 funding has been obtained and work on the programmatic Environmental Impact Report will begin in late fall 2001.

2.4 Watershed Monitoring and Assessment

2.4.1 Overview

As part of the Project Clean Water mission, "to protect the public health and enhance the environmental quality of County watersheds and beaches," PCW implements watershed monitoring and assessment programs. Physical, chemical, biological and geographical characteristics are analyzed to assess the type and source of contaminants entering the various drainages. The geographic focus of the analysis includes drainages in the unincorporated areas of the South Coast between Tecolote Creek and Rincon Creek, and in the Orcutt and Vandenburg Village areas of the north County. Drainages lying mainly within the City of Santa Barbara (Mission and Sycamore Creeks) are analyzed concurrently by the City.

Since the beginning of Project Clean Water, creeks have been monitored by sampling/analysis for a wide range of contaminants. This past fiscal year, creek water was sampled during low flow and storm flow conditions. Low flow sampling helps identify those pollutants which may result from "nuisance flows", such as illicit connections and/or runoff from agricultural or residential properties. The water quality during storm flows reflects those pollutants washed by precipitation into the creeks from the watershed above the sampling point.

Also, from the onset of Project Clean Water, creek assessments have been completed annually for targeted watersheds in the South Coast area. During this process, referred to as "creek walks", creek channels are surveyed from the mouth to the upper portions of the urbanized areas, and potential sources of pollutants within or adjacent to the creek are documented. Channel characteristics are also recorded, such as presence of flow, location of outfalls, and other physical features.

Information collected during the creek assessments and water quality monitoring is linked to a Water Quality Geographic Information System (GIS). This GIS allows for the examination of relationships between water quality data and a wide range of data available throughout the County, such as roads, reservoirs, parcels, land use, and groundwater basins.

Under a grant received from the U.S. Environmental Protection Agency, a consultant was hired to develop a referenced-based hydrogeomorphic ("HGM") assessment of the County's riverine ecosystems. The data gathered as part of this assessment was used to develop a *Review Draft Guidebook* to provide a series of functional indices as reference tools to identify, prioritize, design, implement, and monitor the success of restoration projects on creeks within the South Coast (see Section 2.4.5).

Water sampling, creek assessments, GIS analysis, and the HGM assessment conducted during the past fiscal year are described below in detail. A brief description of the City of Santa Barbara's watershed monitoring and assessment programs is also included.

2.4.2 Water Sampling Protocol and Initial Results

The purpose of water sampling is to examine water quality in streams within the County's watersheds. It is the intent of this sampling program to characterize the type and extent of water quality degradation and use this information, as appropriate, to evaluate public policy and operations within the County. Although storm water monitoring is not a requirement under NPDES Phase II regulations, this information will be used to define pollution types and sources and to guide development of BMPs.

In 1998, the South Coast Watershed Characterization Study was initiated by the County to characterize the water quality of several South Coast streams (URS Greiner Woodward Clyde 1999). This study included both dry and wet weather sampling of Arroyo Burro, Mission, Carpinteria, and Rincon Creeks. In order to gain a better understanding of the types and extent of pollutants contributed by storm water and low flow runoff, additional dry and wet weather sampling was continued during the winter of 1999/2000 and 2000/2001. The sampling program added many more creek sites and water quality constituents, including pesticides and herbicides. This sampling program from 2000/2001 is described below. Also, an annual report on water sampling is in progress.

Related Studies:

Three sampling events were conducted in addition to the storm water sampling effort: Goleta Slough sampling, low flow pre-season creek sampling, and sampling in coordination with the Southern California Coastal Water Research Project (SCCWRP) ocean sampling event. These sampling efforts are described below.

Goleta Slough Discharge Sampling (October 1999)

The Flood Control District periodically opens the Goleta Slough by clearing a channel through the sand berm formed between the slough and the ocean in order to allow adequate drainage of water being stored in the slough and four main tributaries. A series of water sampling was conducted prior to and just after the opening. The purpose of sampling was to investigate the effects of salt water flowing from the ocean into the slough on bacteria levels. Four sample sites were chosen and were located in the ocean 25 yards west of the channel, in the channel itself, on lower Atascadero Creek and on lower Tecolotito Creek. Background bacteria samples were collected the day before the opening. Two days following the opening, bacteria and salinity samples were taken every hour and a half for six hours following high tide. This would allow sampling to begin when salt water levels in the slough and tributaries were high, and subsequent samples would contain less and less salt water. The expected result of increased bacteria with decreasing salinity was not apparent in analyzing the data. Explanations for this deviation, and lack of distinguishable trend in the data, were attributed to insufficient samples taken spatially or temporally.

Low Flow, Pre-Storm Season Sampling (October 1999)

Bacteria samples were collected prior to the winter storm season at all sites chosen for storm water sampling that were flowing. See Table A-1a-c and Figures A-1 to A-2a-c in Appendix A for the locations of the low flow sampling sites. The results are used to compare bacteria levels in base flow or nuisance flow conditions to that of storm water runoff. Bacteria levels

under low flow conditions were consistently lower than bacteria levels for storm water runoff.

Southern California Coastal Water Research Project (SCCWRP) Sampling:

The Southern California Coastal Water Research Project Authority (SCCWRP) is a joint powers agency focusing on marine environmental research. SCCWRP is governed by a nine member commission that includes representatives of city, county, state and federal government agencies responsible for monitoring and protecting the marine environment. Members include the Cities of Los Angeles and San Diego, the County Sanitation Districts of Los Angeles, and Orange County; and the Regional Water Quality Control Boards in Los Angeles and San Diego. SCCWRP was formed in 1969 to increase the limited knowledge of the effects of wastewater and other discharges to the Southern California coastal marine environment.

In 1999, SCCWRP sponsored a regional project to sample the ocean for bacteria at the mouth of most creeks on the same day throughout the entire "California Bight" (from Point Conception to Mexico). The criteria were to sample within 24 hours after receiving at least 0.25 inches of rain over the entire bight. To take advantage of this data being collected, Water Agency staff sampled creeks on the South Coast upstream from the corresponding SCCWRP ocean sampling sites, at the designated PCW storm water sample sites in the lower watersheds on the morning after the rain had ended. See Figures 2a and 2b in Appendix A for location of South Coast storm water sample sites. The purpose of sampling the creeks at this time was to compare levels of bacteria in the creeks and ocean following a small storm event. Test results from the Santa Barbara County Public Health Laboratory showed higher levels of bacteria in all creeks compared to adjacent sites in the ocean . This signifies a large and continuous source of bacteria from terrestrial sources which quickly disperses and/or dies off upon reaching the surf zone. A comprehensive report on the bight-wide study was published and is available on the SCCWRP website at www.SCCWRP.org.

Project Clean Water Wet Weather Sampling:

The PCW storm water monitoring program is implemented through a watershed-based approach. This approach considers the pollutant contributions throughout a watershed vs. discharges draining specific land use areas. Sample sites were selected on all major South Coast watersheds within county jurisdiction from Tecolote Canyon Creek in western Goleta to Rincon Creek bordering the Ventura County line. North county creeks include Davis Creek in Vandenburg Village and Orcutt Creek in Orcutt. These sites are similar to those sampled during the 1999/2000 rainy season, but some modifications were made. See Tables 1a-c in Appendix A for a list of creeks sampled. See Figures 1 and 2a-c in Appendix A for maps of sample locations.

There were a total of 43 sites, including the 29 sites that were sampled for the full suite of pollutants. The water quality analytes were chosen based upon previous storm water quality assessments in the southern California area (SCWCS 1998, SCCWRP 1996) and pollutants that may be present in the Santa Barbara South Coast area based on land uses and a review of relevant literature. The constituents are shown in Table 2 of Appendix A.

In most watersheds, one site per watershed was sampled as close to the mouth of the creek as possible while avoiding tidal influence. Water samples from these sites were tested for a

wide range of pollutants, which are shown in Table 2 of Appendix A and described below, to reflect the expected contributions of mixed land uses throughout the entire watershed.

The sampling program also included bacteria-only sampling sites, although much fewer than the previous year. The indicator bacteria tests were discontinued at most sites because last year's results were consistently very high, making additional testing unnecessary. Bacteria testing was continued in creeks included on the Clean Water Act 303(d) list, which designates waterbodies that are impaired or impacted for beneficial uses of these waters, and other creeks of concern (Carpinteria, Arroyo Paredon, Arroyo Burro and Atascadero Creeks). However, several bacteria-only sites were added at upstream locations to determine the bacteria levels that are introduced upstream of the urbanized areas.

Since the goal of the wet weather sampling program was to characterize the types, and to some degree the extent, of pollutants within the South Coast watersheds, it was optimal to collect data representing the maximum concentrations ("worst case scenario") within the creeks. It was assumed that the maximum concentrations of pollutants would be observed in the creeks during the increasing flow or the "rising limb" of the creek hydrograph, i.e., during the period when the water levels in the creek are rising as a result of rainfall, or are at their peak. It was also assumed that maximum concentrations of pollutants would be observed during the first storms of the season. Although researchers have established the basis of these assumptions in many regions of the country, they are not demonstrated in Southern California (SCCWRP 1996).

Individual samples (grab) were collected during storm events for all but one creek (Atascadero Creek, see below). Grab samples represent a single snapshot of water quality at one moment during a storm event. The advantage of grab samples is they can be collected over a large area with a minimum of field crew. Composite samples are multiple samples collected and combined over a set period of time (eg. five samples collected and combined in an hour) . This sampling technique either requires additional staff for repeated sampling of the same site during the storm event, or automatic samplers, both of which are more expensive. Composite sampling also requires an estimate of either the total duration of the storm (for time-weighted sampling) or the total amount of creek discharge (for flow-weighted sampling). These are difficult parameters to predict. Because the South Coast contains a relatively large number of small watersheds, grab samples were determined to be the most cost-effective and appropriate type of sampling for most sampling events.

However, PCW staff sampled Atascadero Creek (at location AT 030+00) throughout each of the storms to determine pollutant loading. Our goal was to collect samples during the rising limb, at the apex, and during the falling limb of the creek hydrograph, to the extent practicable. This effort, in conjunction with the collection of flow volume data, will help PCW staff to track the variability of water quality within the creek throughout the storm event. It will also help PCW staff to determine whether pollutants are concentrated at the beginning of the storm and the beginning of the rainy season and, therefore, allow us to evaluate the efficacy of our sampling program.

Four entirely new sites at storm drain outfalls were added during the winter 00/01 sampling season. These sites were or still are under consideration as potential sites for treatment control BMP project sites. (Under a state grant, the County will install urban runoff treatment control BMPs to treat stormwater runoff. Four sites were sampled to generate baseline information. (See Section 5.2 for more information on this project) These sites are

located at Carneros Creek (Robin Hill Road), San Jose Creek (North Kellogg), Atascadero Creek (South Turnpike Connector), and Carpinteria Creek (6th Street). As opposed to the creek sampling sites, this data shows direct urban runoff undiluted by creek flows.

Precipitation and Storm Tracking:

Sampling was initiated following a minimum rainfall event of at least 0.25 inches within a 24-hour period of time. Each storm is unique in the quantity and intensity of rain, so weather data was closely tracked to determine the best time to initiate sampling. Due to the variation in rainfall within the watersheds sampled, during the same time period some areas may receive more than 0.25 inches while some watersheds may not. Every attempt was made to collect data from a storm that delivered at least 0.25 inches to the entire South Coast and/or North Coast area. Storm water runoff was not sampled if more than 0.25 inches of rain had occurred within the previous seven days.

Weather data available on the internet from various sources including satellite imagery, radar, and modeling was used to forecast storm events. For real-time data, the County maintains a comprehensive flood warning system, called the ALERT network, that provides rainfall and stream flow gage data. The ALERT network includes eight rainfall stations and two stream gage stations in the South Coast watersheds and is used to determine when, where, and how much rainfall has occurred. Figures 3a-c in Appendix A show maps of the gage locations. Figure 4 in Appendix A shows the rainfall hydrograph for one storm and one station, and Figure 5 in Appendix A shows the cumulative rainfall and sample times for one station for the rain season.

Initial Results:

Each site was sampled four times throughout the year. On the South Coast, sampling took place on 10/26/00, 1/8/01, 1/24/01, and 4/6/01. In North County, sampling took place on 1/24/01, 2/9/01, 4/6/01, and 4/20/01. After each sampling event, the sites were reevaluated to determine whether they were still appropriate in terms of safety, accessibility and tidal influence.

Preliminary analysis of the results reveals high levels of bacteria in the creeks, often one order of magnitude above ocean water standards. Metals were also detected in many creeks at levels approaching or in a few cases exceeding applicable standards. Nitrogen and/or phosphorus were detected in most creeks. Pesticide results indicate that glyphosate (commonly known as Roundup) and diazinon, (a common ingredient in residential and commercial pesticides for home pests), were present in a majority of the creeks during one or more sampling events.

A full draft report detailing the stormwater sampling and results is circulated to the Technical Advisory Committee (TAC) and will be finalized and available in September 2001. This data will help determine appropriate changes for the wet weather sampling plan and protocol for next rain season. Additional sites will be added and watersheds will be better defined according to the results from this year. This data and low flow sampling will also help determine potential locations to implement source reduction and/or treatment control BMPs.

2.4.3 Creek Assessments

During FY 00/01, Project Clean Water staff completed a physical examination of all creeks ("creek walks") on the South Coast between Tecolote Creek in western Goleta and Rincon Creek at the Santa Barbara/Ventura County border. These creeks, in addition to North County creeks listed in Table 1c and shown in Figure 2c in Appendix A, will continue to be surveyed once each year.

The purpose of these creek walks is to document baseline conditions of the creeks; specifically to document forms of pollution present in the creeks, as well as any potential sources of pollution, such as a storm drain outfalls, and to characterize the creek channel conditions. Information collected during creek walks is used to target source control, treatment control and public education efforts to more polluted sections of creek.

On the South Coast, creeks are walked from the upper limit of urbanization down to the ocean. Highway 192 or Flood Control District debris basins were selected as the upper boundary on most watersheds. Characteristics such as creek width, flow and vegetation were noted. As the team progressed downstream, any change in the initial conditions was recorded. For example, if the creek width changed significantly, the new creek width would be noted. Potential sources of contamination were also documented along the way. These sources include animal and human waste, trash, and green waste, among others. Storm drain outfalls were identified and characterized as to their size, type, source and flow, if any. The storm drains discharge potentially polluted water into the creek during storm events as well as low flow or nuisance water. In preparing to meet NPDES permit requirements, all discharges into the creeks are viewed as point sources and, therefore, must be maintained at an acceptable level of water quality, to the maximum extent practicable.

Several general trends have been observed:

- Greater amounts of pollutants are found in more highly urbanized surroundings
- Trash is generally present underneath bridges
- A small percentage of creek-side residences and businesses discard waste from their property into the creek
- Algal mats occur in all creeks where water is exposed to sunlight and there are low flow velocities: nutrients do not appear to be a limiting factor.

To address these potential pollution sources, letters and informational brochures are sent to property owners whose parcel was clearly identified as the source or location of contamination. This is discussed in Section 2.5.2.

2.4.4 Water Quality Geographic Information System (GIS)

In order to better assist Project Clean Water staff in mapping, organizing and analyzing results from the watershed monitoring and creek assessment projects, a GIS, or Geographic Information System layer or "theme', is being constructed. This "Water Quality GIS" was begun last fiscal year using AutoCAD Map, but is now being built using ArcView 3.2a. This superior software allows layering of various information and maps in a similar way that transparencies can be layered. This GIS links objects in the map to information contained in

a database to allow querying to be conducted and results of the query displayed in a designated format.

The County's parcel map and roads map provide the base for mapping efforts, with specifically constructed PCW layers placed over the top. PCW layers compiled this fiscal year include sampling points, outfalls of pipes in creeks, homeless encampments, and illegal dumping/discharges. In addition, two new layers from outside sources have improved the mapping capabilities of PCW staff: (1) a more accurate streams layer constructed by Geodigital Mapping under contract with EHS, and (2) an aerial photo with one-meter resolution that was flown in the spring of 2000. PCW staff will also be adding data collected during previous years' creek walks to the GIS.

Future plans for using the Water Quality GIS involve compiling more layers from wet weather sampling data, creek walk data, and data from various County agencies, such as the hydrology and groundwater layers produced in the Water Agency, and the septic system layers produced in the Environmental Health Services Division. With additional information linked to the current GIS, more robust and significant relationships can be made and analyzed.

2.4.5 Hydrogeomorphic Assessment & Draft Guidebook Development (U.S. Environmental Protection Agency Grant)

In March 2000, Project Clean Water, in partnership with the Santa Barbara County Task Force of the Southern California Wetlands Recovery Project, and Conception Coast Project, was awarded a $250,000 grant from the U.S. Environmental Protection Agency to initiate and carry out a three-year project to improve water quality through stream restoration efforts. This project undertakes the development of a referenced-based hydrogeomorphic ("HGM") assessment of the County's South Coast area riverine ecosystems. The HGM data will then be used to develop a *Review Draft Guidebook* to provide a series of functional indices as reference tools to identify, prioritize, design, implement, and monitor the success of restoration projects on creeks within the South Coast. As the final phase of the project, the Guidebook will be used to develop and implement three demonstration restoration projects on South Coast creeks. The watersheds targeted for these projects are Carpinteria Creek, Arroyo Burro Creek, and San Jose Creek.

In June 2000, field work for the HGM guidebook was completed. Working closely with County staff, a team of six field scientists from L.C. Lee & Associates (LCL) sucessfully sampled 60 sites throughout the South Coast. These sites represented the three HGM subclasses (high, moderate, and low gradient) in a variety of landscape positions and land use contexts. The consultant team then began analyzing the data to scale the variables and develop the HGM guidebook. Variable described functions of hydrology, biogeochemistry, plant community, and faunal habitat and support.

In September 2000, staff from PCW and County Flood Control participated in the scaling of variables at LCL offices in Seattle, Washington. This was a valuable cross-training experience for staff. The draft guidebook was then field tested in January 2001. LCL staff also began working on the next phase of the project, which involved characterization of all urban South Coast creeks based on the HGM model, and prioritization of stream reaches based on restoration potential. This work, and the draft HGM guidebook, will be delivered to the County in September 2001.

In March 2001, the County received a $21,000 grant from the Southern California Wetlands Recovery Project to develop HGM-based restoration designs for the three demonstration restoration sites. The product of this project will be enhanced restoration designs, based on HGM recommendations, and a template for using the guidebook in the development of restoration plan designs. Staff has been working closely with community groups and County and City staff to implement these restoration efforts.

The next phase of this project includes delivery of the completed draft guidebook (September 2001), development of the HGM restoration designs and template (September 2001) and implementation of the restoration projects (targeted for installation in 2002).

2.4.6 Ocean Water Monitoring:

The Santa Barbara County Environmental Health Services Division began weekly testing of the ocean surfzone in September of 1996; after established programs in other Southern California areas had identified elevated bacterial levels in recreational ocean waters. At the urging of the local community, especially the Surfrider Foundation, which was concerned about the public health risk associated with ocean water contact, Environmental Health Services designed a program for testing at 16 beach areas and presented this to the Board of Supervisors. The Board approved the program and provided general fund support.

Currently, ocean water samples are taken each week at 20 beaches (expanded from the original 16) from Guadalupe Dunes to the Rincon, and analyzed for the three indicator bacteria of total coliform, fecal coliform and enterococcus. The samples are collected 25 yards down current from the creek mouth in ankle to knee-deep surf zone water. This sampling protocol is consistent with state regulations promulgated in 1999 and all other Southern California monitoring communities. The beaches sampled are listed below.

Santa Barbara County Environmental Health Services
Ocean Water Monitoring Program Testing Sites

- Arroyo Burro Beach
- Arroyo Quemada Beach
- Butterfly Beach
- Carpinteria City Beach
- Carpinteria State Beach
- East Beach at Mission Creek
- East Beach at Sycamore Creek
- El Capitan State Beach
- Gaviota State Beach
- Goleta Beach
- Guadalupe Dunes
- Hammond's Beach
- Hope Ranch Beach
- Jalama Beach
- Leadbetter Beach
- Ocean Beach
- Refugio State Beach
- Rincon Beach
- Sands Beach (at Coal Oil Point
- Haskell's Beach (Western Goleta near the Baccara Resort)

Samples are normally collected on a Monday, with the results available 24 to 36 hours later. The beach areas that do not meet state bacteriological standards for one or more indicator bacteria are then re-sampled and posted with "warning" signs, usually on Wednesdays. If these re-samples are below state standards then the "warning" signs can be removed in time

for the weekend. Beaches are posted "closed" only in the event of a known sewage spill, or at the discretion of the County Health Officer.

Currently, City and County staff are exploring additional sampling to enhance the Ocean Monitoring Program during months of peak beach use. Sample results are available through local newspapers, such as the News-Press and Independent, the Ocean Water Quality Hotline (681-4949), and the Santa Barbara County web site (sbcphd.org/ehs/oceanmn.htm).

2.5 Complaint Response & Enforcement Activities

2.5.1 Overview

Environmental Health Services, Solid Waste, the Fire Department, Planning and Development and other agencies are engaged in a number of water quality related remediation activities. Enforcement of existing policies and ordinances is crucial to the effort to maintain water quality in the creeks and oceans. Project Clean Water has made efforts to facilitate reporting of water quality problems, initiate follow-up, and insure enforcement of water quality policies/ordinances. These efforts include a water quality reporting hotline (1-877-OUR-OCEAN), coordination between various enforcement agencies and personnel, and increased report follow-up. Remediation activities by County departments and divisions are described below.

This year PCW has responded to 73 complaints. Sixteen complaints were received in the first quarter (July –Sep '00), 10 in the second quarter (Oct. –Dec. '00), 29 in the third quarter (Jan –Mar. '01), and 18 in the fourth quarter (Apr. – Jun. '01). All complaints were responded to within twenty-four hours, resulting in 100% compliance with our performance measures regarding complaint response.

2.5.2 Environmental Health Services (EHS)

EHS responded to over 70 complaints regarding water quality throughout the year. These complaints ranged from illegal dumping of trash, horse manure and green-waste in the creeks, which were referred to Solid Waste, to the dumping of liquid waste.

In addition to complaints, the annual creek walks conducted in each watershed (see Section 2.4.3) have shown places where solid waste has been discarded into the creek or along the creek banks. To address these common issues, letters and informational brochures are sent to property owners whose parcel was clearly identified as the source of contamination. For example, if a large pile of greenwaste was seen directly on the creek bank behind a home, a letter would be sent to the owner of that parcel explaining the impacts greenwaste has on water quality and outlining alternative methods of disposal or composting of greenwaste. Brochures, such as "Gardener's Guide to Clean Water" and "Creekside Concerns" are included in the letter.

The responses often require cooperation among many agencies. As callers are not always aware of the unincorporated area boundaries, many calls that fall within the City are reported to the County and then referred to the City. Conversely, the County receives complaint referrals from the City. Reports of trash and green-waste in the creeks are often referred by Environmental Health to either the Flood Control or the Solid Waste divisions of Public Works. Crews from these departments then go out and clean up the site.

In other cases, complaints may be referred to Zoning, Development Review or even Animal Services. In the majority of cases, however, staff from Environmental Health provide initial response to the incident. Generally, the infraction occurs because of a lack of awareness on the part of the discharger. Often, simply pointing out the error made and suggesting best management practices to be used in the future is all it takes to convince business and/ or homeowners to cease the practice that initiated the complaint. In most cases the individual responsible wants to do the right thing, and implements the BMPs. Targeted information brochures have been developed for creek-side residents, owners of domesticated animals, and businesses to educate them on appropriate BMPs, which should reduce these types of incidents.

3.0 Intergovernmental Coordination/ NPDES Permit Development

Geographic components such as creeks, streams, groundwater, and ocean water, are not constrained by jurisdictional boundaries. Accordingly, water quality improvement efforts must be cooperative and coordinated to effect any measurable or lasting positive changes. National, state and regional legislation, regulations and policy decisions can have significant benefits and/or impacts on local water quality efforts. In order to ensure that Project Clean Water makes the most efficient use of local resources, coordination on the local, state, and federal level is being implemented concurrently.

3.1 Local Coordination

The NPDES Phase I urban storm water communities of northern and southern California obtained their first permits in the early 1990's. In order to develop the most effective and efficient pollution prevention programs, the larger municipalities and County organizations became co-permittees in large, regional permits. As an example, one of the regional permits for Los Angeles areas includes the County of Los Angeles and 84 municipalities as co-permittees. The State and Regional Water Boards are advocating a similar approach for the Phase II communities.

The Intergovernmental Committee was established in November of 1998 to explore the concept of a regional permit and to coordinate pollution prevention programs between the Phase II communities in Santa Barbara County. The Committee is comprised of all Phase II NPDES agencies within the County (the Cities of Santa Barbara, Carpinteria, Lompoc and Santa Maria), cooperative agencies, (Caltrans), as well as the local regulatory agency (the RWQCB). Recently the committee was expanded to include Vandenberg Air Force Base and the City of San Luis Obispo. The Committee holds quarterly meetings and has discussed such issues as:

- Permit options (i.e. one regional permit or individual agency permits)
- Areas of program and jurisdictional overlap (borders of municipalities and County unincorporated areas, watershed oversight, etc.)

- Funding options
- Program development strategies
- Regulatory oversight

Although a countywide, regional permit option is not favored by all, other options such as a south coast regional permit are still being considered. As the deadline for permit application, April 2003, rapidly approaches, additional facilities and operations will be included in these discussions. These include such entities as:

- The Earl Warren Showgrounds
- The University of California at Santa Barbara
- The Lompoc Penitentiary
- Sanitary Districts
- School Districts
- and many others

The County has been working very closely with the SWRCB and the RWQCB on the ongoing development of the Phase II permit guidance materials and regulations. As part of the Phase II regulations, the SWRCB is required to develop a model urban storm water runoff permit and a "toolbox" of guidance materials to assist with the selection of appropriate storm water program BMPs. County staff chairs the Phase II Implementation Working Group of the California Storm Water Quality Task Force (See Section 3.3) to help develop these guidance materials. Bi-monthly meetings are held with other Task Force members as well as SWRCB and RWQCB staff members.

The SWRCB is also working on a statewide designation criteria policy for the Phase II communities. The designation criteria will be based upon the 2000 Census information. The federal regulations designate all municipalities over 10,000 population and with a population density of 1,000 per square mile. The four identified municipalities within Santa Barbara County are included, but vast areas of the County unincorporated area are still undesignated. These areas include Santa Ynez, Los Olivos, Ballard, Mission Hills and many other areas. The designation of these areas could significantly increase the level and extent of the County's urban storm water runoff program.

According to the latest communications with the SWRCB staff, the designation criteria is to be released for review in the late fall of 2001 and the model permit and toolbox materials are to be made available in the Spring of 2002. The longer these materials are delayed, the more challenging it will be for the County to design an appropriate urban storm water program, establish an appropriate funding source and level of funding, and to meet the April 2003 application deadline.

Coordination with City of Santa Barbara

Because of shared jurisdiction and approximately equal population covered on the South Coast, the City and County of Santa Barbara work together very closely on Project Clean Water programs. Cooperative efforts insure efficient use of public funds and the promulgation of a consistent message. The City and the County share responsibility for the Stakeholders Committee and Working Groups, and work cooperatively on all public

information and outreach efforts. In addition, weekly coordination meetings are held between City and County staff to share information and prevent duplication of efforts.

For more information on the City of Santa Barbara's Creek Restoration and Water Quality Improvement Program, please visit their web site at www.ci.santa-barbara.ca.us, or call Jill Zachary, Program Manager, at 897-2508.

Coordination with UCSB

The County of Santa Barbara promotes research and academic coordination. Project Clean Water has participated in two Water Quality Forums sponsored by UCSB. The goal of the Forum is to bring together organizations and researchers that are working on local water quality problems. Santa Barbara County has also assisted with several UCSB Donald Bren School of Environmental Science and Management master thesis group research projects such as:

- "Evaluation of Monitoring Efforts Used to Determine Beach Advisories and Closures",
- "Holistic Approaches to Stormwater Management in Mediterranean Watersheds: Delineation and Evaluation of Alternatives".

UCSB has recently received a $5 million dollar grant from the National Science Foundation to establish a Long Term Ecological Research (LTER) project. This project is to study the impacts of surface water flows from creeks on the offshore kelp beds. Storm water runoff greatly increases pollutant loading to these sensitive kelp bed habitats. UCSB, the County and the City of Santa Barbara have been exploring opportunities to coordinate research and monitoring activities to meet the goals of all organizations and prevent costly duplication of effort. Preliminary results suggest that large amounts of nutrients from urban and agricultural areas on the South Coast are transported through stream systems during storms.

3.2 Regional Coordination

Santa Barbara County has been interacting with its regional neighbors. Recently the County of San Luis Obispo (a Phase II NPDES community) has been invited to participate in the Intergovernmental Committee. Santa Barbara County made contact with Ventura County (a Phase I NPDES permit agency) during the early planning stages to gain insight into their program structure, measurable goals and permit experience. Ventura County has provided a great deal of information and support as Santa Barbara County has developed an understanding of the Phase II permit requirements.

In addition, Santa Barbara County cooperated with the Regional Water Quality Control Board in a regional effort to identify the amount of pollution contributed to watersheds associated with various types of land use activities. The Central Coast Ambient Monitoring Program (CCAMP) is the Central Coast Regional Water Quality Control Board's regionally scaled water quality monitoring and assessment program. The purpose of the program is to provide scientific information to Regional Board staff and the public, to protect, restore, and enhance the quality of the waters of central California. Data collection focused on a wider geographical range of creeks than the Project Clean Water program, as well as on a larger number of analytes.

Santa Barbara County has provided insight and data to the Southern California Coastal Water Research Project (SCCWRP) as well as Moss Landing Research Facility (near Monterey, CA) to assist with development of a regional assessment of pollution concentrations (loading) from specific land use activities to the ocean receiving waters.

The Southern California Wetlands Recovery Project (SCWRP) is an alliance of federal, state, and local officials working with business and nonprofit organizations to acquire, restore, and expand wetland areas throughout Southern California. PCW participates in the SCWRP's Santa Barbara County Task Force. SCWRP is currently a partner for local creek restoration projects and is expected to become a partner in proposed pilot watershed management plans as well. Locally, SCWRP grant monies are funding restoration efforts on San Jose Creek, and the development of a template for using the EPA-funded HGM guidebook for developing restoration design plans.

3.3 Statewide Coordination

Through the administrative procedures of the State Water Resources Control Board, the California Storm Water Quality Task Force (SWQTF) was formally commissioned as the principle advisor to the state on storm water quality program issues.

In short, the purpose of the Task Force is to assist the State in implementing the National Pollutant Discharge Elimination System (NPDES) storm water mandates of the Federal Clean Water Act.

In fulfilling this purpose, the Task Force recommends objectives and procedures for storm water discharge control programs. Criteria include programs which are technically and economically feasible, provide significant environmental benefits and protect beneficial uses of receiving waters, promote the advancement of storm water management technology, and effect compliance with State and Federal laws, regulations and policies.

The SWQTF was responsible for the creation of three Best Management Handbooks (Industry, Construction and Municipal) that have been the most widely recognized resource for storm water programs in California for the last ten years.

Santa Barbara County's proactive philosophy includes coordination with the SWQTF. Santa Barbara County became the second Phase II community to become a member of the SWQTF Executive Committee. Dan Reid, Project Manager for PCW has participated on the Executive Committee of the SWQTF since January 1999 and has recently chaired the Phase II Implementation Working Group of the SWQTF. As a representative of a Phase II community, Dan is often sought out by the other Phase II community representatives for information on Phase II regulations, new legislation and program implementation. The Working Group recently presented a workshop on the Phase II NPDES requirements and integration of local efforts at the July 2001 General Meeting of the SWQTF. This workshop drew approximately 150 attendees and was the most well attended meeting in the history of the SWQTF. Dan has also developed contacts with the RWQCB and the SWRCB and tracks the development of tools for the Phase II communities such as the BMP Toolbox, the state General Permit for Phase II communities and the designation criteria. This criteria will specify which areas of the County, according to the 2000 census data, are included in the Phase II NPDES requirements.

County staff members attend bi-monthly meetings of the SWQTF Executive Committee and General Committee. Staff members are active on many of the SWQTF working groups including:

- BMP Handbook Update working group
- Pesticide working group
- Phase II Implementation Working Group
- Regional monitoring working group
- Legislative Analysis working group
- Impaired Water Body/TMDL working group
- Public Information/Public Participation

Most of the storm water agencies involved with the SWQTF are Phase I permittees. The SWQTF in partnership with Santa Barbara County has been very successful in recruiting additional Phase II communities to the SWQTF. Participation with the SWQTF has also allowed Santa Barbara County to accelerate NPDES permit and program development.

4.0 Future Challenges

Project Clean Water is a relatively new program and is under development. Consequently, there are a number of challenges that the program must meet during the next few years in order to reach its full potential. Some, such as NPDES and TMDL requirements relate to future regulatory requirements. Others, such as final scope of the program and long term funding, will be determined by the program's stakeholders.

4.1 NPDES Program Elements and Data Requirements

The final "Phase II" regulations published by EPA stipulate mandatory program elements and data requirements. These requirements are similar to those contained in the draft regulations summarized in our staff report of April 27, 1999, which was also the basis of the 1999-2000 and 2000-2001 work plans. The potential cost implications of key program elements are discussed below.

Required BMPs fall into several categories called "minimum control measures":

- Public education and outreach on storm water impacts
- Public involvement/participation
- Illicit discharge detection and elimination
- Construction site storm water runoff control
- Post construction storm water management in new development and redevelopment

- Pollution prevention and "good housekeeping" for municipal operations

The discussion relating to the requirements for each of these measures focuses on "developing, implementing, and enforcing a program"…and on setting up "procedures…for inspection …and enforcement". The "guidance" discussion contains specific examples of potential action items that could be included and what sorts of facilities and pollution sources should be the focus.

Since the scope of discussion in the regulations is broad, separating the "NPDES mandates" from other community-initiated elements of the County program is difficult. However, those measures that are "recommended" such as wetland protection and enhancement as well as (initial) water quality monitoring may be viewed as beyond the minimum requirements. In addition, annual permit reporting must include detailed summaries of implementation of each measure. Thus, new costs will occur even if some measures are currently part of the County's responsibilities.

The permit will be administered by the State of California Central Coast Regional Water Quality Control Board (RWQCB). Neither the state nor the RWQCB have provided guidance as to the specific form and content required in 2003. However, in 1998 the SWRCB developed a "Model Urban Runoff Plan" (MURP) in cooperation with a number of interests in the Monterey Bay region. Although Project Clean Water has incorporated virtually all applicable elements of the MURP, there is no guarantee that these efforts will fully satisfy the Phase II regulations.

The SWRCB is currently developing the designation criteria and the General Permit which must be adopted by the local RWQCB. This General Permit will require each permittee to submit a Storm Water Management Plan (SWMP) and implement this plan over the first five years of the initial permit. The draft general permit and related guidance (such as criteria for determining which communities are subject to the regulations) are expected to be available in winter 2002. These documents were expected in the summer and fall of 2001. To the extent that further delays occur, some risk exists that substantial program revisions would be necessary before March 2003, the deadline for Phase II permit application.

The County's current creek, ocean and storm water quality program includes both program development and source reduction efforts. Our review of the NPDES regulations confirms that the stakeholder recommendations incorporated into the program include most of the suggested BMPs. For clarity, we have used the topic headings from the final rule in the following discussion.

1. Public education and outreach on storm water impacts / Public involvement and participation

These closely related efforts include educating the community about the source and effects of storm water pollution, its effects on our environment and ways to control or reduce the sources and their effects. In addition, the guidance suggests involving the community in the definition of local pollution problems and development of the program to

address them. This is the process currently used by Project Clean Water. Current efforts are discussed in more detail in Section 2.1.

2. Illicit discharge detection and elimination

Requirements to control and eliminate illicit discharges match the scope of current state and local agency programs. In addressing community concerns about current programs, staff has identified a number of opportunities to streamline and simplify reporting and response functions. Development of the reporting hotline (1.877.OUR-OCEAN) has provided the focus for this initial streamlining and has provided staff with the basis for estimating the additional resources needed. Our long term cost estimate includes staff for ongoing source investigation in creeks, coordination among regulatory agencies and reporting. These ongoing efforts are intended to enhance existing regulatory programs, but are considered new County costs since they are not part of an existing regulatory program and have no long term funding source. Currently, all sewer system operators in the Phase II area have ongoing programs to identify and correct cross-connections with storm-drains. These programs represent one of several cooperative interagency elements of the regional Phase II cooperative permit.

Although the focus of this program element will be on illegal cross connections and discharges, other potential pollution sources need to be addressed. For example, some homeowners have diverted surface flows, such as roof drains directly to nearby creeks or storm drains. Unfortunately, roofs may also collect airborne deposition, such as nitrogen, phosphate, sulfur, metals, etc. Storm water flows from these roofs may be contaminated with these compounds.

3. Construction site storm water runoff control

Requirements for controlling construction site runoff that currently exist in the Grading Ordinance, are made conditions of approval for most discretionary projects and additionally, for projects over five acres, are required by the Regional Water Quality Control Board. While the County's existing regulations may be revised as deemed appropriate, the current requirements may generally address the intent of the Phase II NPDES regulations. However, monitoring and inspection appear to need upgrading. The proposed work plan for FY 2000-01 includes a systematic evaluation of the county Policies and Grading Ordinance; this would be a short-term program development cost. Because these type of projects are now treated on a cost recovery basis, staff assumes no significant new County costs.

In addition, many potential contaminants are not clearly addressed in permit conditions. PCW staff has developed informational materials for construction contractors. In addition, staff is working with the local building-trades organizations to develop specific training and certification programs for pollution prevention on job sites.

4. Post construction storm water management in new development and redevelopment

The intent of this BMP is to incorporate water quality parameters in design of new projects, and to be certain that water quality measures built into projects remain effective over the life of the project. Currently staff is suggesting appropriate design features in new land use applications in urbanized areas of the County on a case by case basis. Essential objectives of these design elements include reliability and low maintenance cost. Staff

anticipates that there will be an incremental work load increase until guidelines and standards for appropriate design are available and widely used by project designers. PCW staff will develop design guidelines for runoff pollution control with Planning and Development in the next fiscal year.

Post construction monitoring may take several forms. Regular on-site inspections with enforcement is one alternative. Self-reporting with occasional inspection (and as necessary, enforcement) is an alternative as well. These are policy matters that must be considered by your Board at a later date. In any event, for the purposes of long term program cost estimates, staff has assumed that the majority of both maintenance and inspection costs would be borne by new development. The ongoing process for up-dating County land-use process is discussed in Section2.2.2.

5. Pollution prevention and "good housekeeping" for municipal operations

This category addresses measures to assure that activities associated with County properties and practices, such as parks, open space, roads, storm drains, vehicles, buildings, etc. are not a source of pollution. It also requires employee training. New or expanded activities to reduce pollution such as street sweeping, installation and maintenance of storm drain interceptors, regular maintenance of storm drains, etc. must be evaluated and implemented as appropriate. Project Clean Water staff are working with a consultant to evaluate all County-owned facilities and look for improvements that could help reduce pollutant runoff. The results of the findings will be prepared in a Storm Water Pollution Prevention Plan that will highlight those BMPs that are or shall be implemented.

Since the County programs appear to generally meet the minimum requirements, reporting of activities and ongoing employee training are expected to be the major focus associated with this part of the requirements. However, reducing the pollution load of runoff using street sweeping, storm drain interceptors, or increased maintenance of storm drains will be added to the program as appropriate, but these potentially costly measures need to be proven cost effective. Staff is reviewing recent and ongoing studies regarding cost and effectiveness of a wide range of devices and practices. In addition, the implications of related issues (such as parking restrictions to facilitate sweeping of gutters) are being evaluated as discussed in Section 5.1.1.

In addition, the State has provided $2.09 million for the first two to three years of a Treatment Control BMP program and this will greatly accelerate the installation of facilities in already developed areas as discussed in Section 5.2.

6. Reporting of Progress

Reports to the "NPDES Permitting Authority", which is the Regional Water Quality Control Board (RWQCB), are required annually during the first five years of the permit term (beginning in 2004). These reports evaluate program compliance, BMP "appropriateness", and progress toward program goals. In addition, the Permitting Authority may require water quality monitoring. Such monitoring may be used to evaluate progress toward cleaning up storm water, but the natural variation and cost pose significant impediments to meaningful use of the data for regulatory purposes. (Current water quality data are used to characterize the community's water quality problems and help identify sources.)

Every five years the Permitting Authority is required to evaluate the County's permit and make any changes appropriate. Based on its analysis the Permitting Authority may modify the terms of the permit. Both the annual reports and the five-year review are expected to require considerable data compilation and evaluation. Although the data collection system developed by staff is intended to facilitate preparation of these reports, preparation of reporting documents is expected to require both staff effort and consulting services.

4.2 Scope of Future Program and Funding Issues

As discussed at the Board of Supervisors, staff has evaluated the potential scope and cost associated with the County's storm water quality program. Based on our review of programs in other areas of southern California, the final regulations made available in December 1999,

and discussions with the stakeholders, we have developed budget estimates to reflect the form and content of the regulation requirements. The estimated cost of the long-term NPDES program is approximately $2.3 million per year. The basis of this cost estimates was provided to the Board of Supervisors in November 1999; materials presented to the board can be provided by Project Clean Water Staff.

The final regulations contain "substantive" requirements as to what the County and affected cities are expected to do to protect storm water quality, as well as "process" requirements such as deadlines for application for a permit (February 2003) and subsequent reporting (annual). The substantive requirements are focused on the development and implementation of Best Management Practices (BMPs), but the distinction between requirements (minimum program elements) and additional actions is blurred by the nature of the regulations. Specifically, the regulations contain both "requirements" and "guidance", but guidance language generally elaborates on the requirements rather than defining minimum standards.

The long-term future challenge for the County is to develop the current Project Clean Water program elements to meet the NPDES requirements in a way that minimizes duplicative program development costs. Since the State of California has yet to provide guidance as to the form and precise scope to the Phase II permit, staff has involved itself directly in the process by which the State Water Resource Control Board will issue guidelines/ requirements. In addition, we are using the model developed by Monterey area agencies and the RWQCB to guide the development of key program elements.

The Board of Supervisors has considered a number of financing options; some of these raised issues of governance. To date no new revenue source has been developed and the Board has continued the interdepartmental organization of the program. Currently, the program is supported by a combination of general fund revenue and settlement funds from tobacco litigation. Currently, several cities have established special fees to support storm-water pollution programs. These programs are supported by fees levied against developed parcels of land based on the amount of impermeable surface (driveways, roofs etc on the parcel). County staff is monitoring the success of these new programs and may suggest such an approach for funding Project Clean Water long term.

4.3 Total Maximum Daily Loads (TMDLs)

TMDL regulations are contained in Section 303(d) of the Clean Water Act. TMDLs are designated for water bodies of the state that have shown to be impaired or impacted for beneficial uses of these waters. The State Water Resources Control Board (SWRCB), with concurrence of the EPA and the Regional Water Quality Control Boards, established a listing of all impaired water bodies. This list is updated every two years. The most recent listing was in 1998.

This listing is subsequently prioritized based upon known and/or perceived impacts to the beneficial uses of these waterbodies. Santa Barbara County currently has eight listed water bodies for specific pollutants of concern, which are listed in the table below.

Santa Barbara County Section 303(d) Impaired Watersheds

Watershed	Beneficial Use Impairment
Arroyo Burro Creek	Pathogens
Rincon Creek	Pathogens, sedimentation
Santa Ynez River	Nutrients, salinity, sediments
San Antonio Creek	Sediments
Goleta Slough	Metals, pathogens, sedimentation, etc.
Carpinteria Salt Marsh	Nutrients, sedimentation, etc.
Mission Creek	Pathogens

The TMDL process begins once impaired waterbodies have been established and prioritized. The total amount of pollution that can be discharged to these impaired water bodies (load allocation) from all land use categories in the watershed is determined by the agencies that have jurisdiction in the watersheds in coordination with the local Regional Water Quality Control Board. From these load allocations, appropriate water quality standards are established for each pollutant identified in the 303(d) list.

Local entities that have jurisdiction over the impacted watershed must develop a formalized implementation plan to reduce or eliminate the discharge of these pollutants to levels that meet the previously developed water quality standards. Often this means the cooperation of agencies that have overlapping jurisdiction such as in the Rincon Creek area where both Santa Barbara County and Ventura County have jurisdiction over parts of the creek.

Preliminary target dates have been established for the start of the TMDL process for all of the waterbodies prioritized in the Section 303(d) listing. For Santa Barbara County, all impaired waterbodies are scheduled to begin development of the appropriate water quality standard(s) for the waterbody by 2006, except for the Santa Ynez River, which is 2003. Full plan development including establishment of the appropriate water quality standards is to be completed within five years of the target start date. In every watershed but the Santa Ynez River, this will occur in the year 2011.

The TMDL process has gained more attention in recent years due to lawsuit judgements that have forced local jurisdictions such as Ventura and Los Angeles to establish TMDLs more rapidly.

TMDLs are created for individual watersheds that often cross jurisdictional boundaries and may be outside of the NPDES permit areas. As such, they offer a unique challenge and opportunity to cooperatively work with all agencies that may be discharging to the local watersheds. Because TMDLs have not yet been established in Santa Barbara County, it is difficult to estimate actual costs associated with specific projects or system components, nor is it possible to judge their effect on the scope of Project Clean Water.

5.0 Project Clean Water Work Plan 2001-02

Fiscal Year 01/02 represents the fourth year of operation for Project Clean Water. The 01/02 Work Plan builds on efforts and accomplishments of the first three years, incorporates stakeholder recommendations, and lays the groundwork for the NPDES permit that will be required in 2003.

This section summarizes some key changes in the work plan; for a copy of the complete plan, please contact the Public Works Department Water Resources Division at 568-3440. The work plan groups together tasks according to the six required best management practices (BMPs) required by the permit. In addition, the work plan includes elements that are recommended, though not necessarily required by the permit, and that are also endorsed by the community. As from the initiation of Project Clean Water, Stakeholder recommendations play a key role in the development of the work plan.

5.1 Water Quality Testing:

within the constraints of the existing budget for sampling and laboratory analysis and based on available water quality data, new sampling sites will be added to the Project Clean Water storm sampling program. Research will be done using available data and field investigations to determine the most applicable new sampling points in the 25 previously sampled watersheds on the South Coast and Orcutt areas and which are under the proposed NPDES Phase II regulations.

In addition, staff will use the experiences of two full wet-weather sampling seasons to revise sampling logistics. This includes possible revisions to sampling protocol and the constituents sampled for. Water quality sampling is intended to create an accurate and useful sampling database, in part to analyze the data to determine the most appropriate BMPs for implementation, and also as a basis for gauging overall program success.

Staff has initiated sampling of selected stream using benthic macroinvertebrates (BMIs). This spring, Project Clean Water staff conducted biological monitoring using the Environmental Protection Agency's *Rapid Bioassessment Protocols for Use in Streams and Wadeable Rivers* (1999). The goal is to continue the monitoring over several years to evaluate the ecological health of and track changes in South County urbanized streams. Twelve representative sites were selected for comparison of urbanized-impacted reaches with relatively undisturbed reaches. Sites were selected along Carpinteria (2), Gobernador (1), San Jose (3), Atascadero (2), Arroyo Burro(2), San Onofre (1), and Arroyo Hondo (1) Creeks.

Each site assessment included collection of benthic macroinvertebrates (BMIs) for later analysis, and habitat characterization of the reach. BMIs are organisms that inhabit the bottom substrates of freshwater habitat for at least a part of their life cycle and are at least a half millimeter in size. BMIs act as continuous monitors of the water they inhabit, enabling long-term analysis of both regular and intermittent discharges, variable concentration of pollutants, single or multiple pollutants, and even synergistic or antagonistic effects. BMI richness can be used to characterize the overall biologic health of the stream reach

5.2 State Funding for Water Quality Initiatives

Project Clean Water staff have been very successful in securing state funding for a variety of water quality projects. These projects are described below.

5.2.1 Treatment Control BMPs Pilot Projects

On June 30, 2000, the State of California approved funding for surface water quality treatment control best management practices (BMPs) proposed by the Project Clean Water. The project approved for $2.1 million in funding would provide long-term water quality improvement by implementing appropriate treatment control BMPs. Specifically, the grant money would be applied directly to site assessment, design, and installation of storm-water quality improvement facilities.

The objective of the project is to reduce pollution in Santa Barbara's creeks and oceans from nonpoint sources, especially where source control measures are difficult or where source control measures may not result in adequate protection for "receiving waters".

The types of BMPs considered for this project include: biofilters (or bioswales), constructed wetlands (or wet ponds), dry detention ponds, drop inlet inserts (or storm drain filters), media filters such as sand filters, storm drain in-line separators, and infiltration ponds/trenches. These facilities would be installed at selected locations throughout the urbanized areas within the County.

The work will be conducted in four phases. The first phase is identification and matching of probable sites with technologies to determine the best locations and most appropriate BMP systems (or combination of systems). The second phase is a permitting and environmental assessment, where identified sites will be analyzed for environmental effects. The third and fourth phases are final design and installation.

Phase 1 complete analysis and 2 selected projects being designed for potential rapid initiation. Fourteen other sites will be evaluated further for prioritization based on pollution loading, ease of installation, location and cost.

5.2.2 Septic System Evaluation and Conversion

In addition, the County received $1.75 million for a low-interest loan program for homeowner septic system conversion projects, and $250,000 for a sanitary survey project for septic system locations throughout the County. The Public Health Department has retained a consultant (Questa Engineering Corporation) to perform the sanitary survey for septic systems. The survey results will be available in the late spring of 2002. The survey will be countywide and will identify problematic areas for septic system disposal and will provide recommendations for alternatives to onsite sewage effluent disposal.

The Public Health Department will administer the $1.75 million revolving loan program to assist homeowners in converting from septic systems to sanitary sewer, where feasible. One of the first target areas will likely be Rincon Point. The Carpinteria Sanitary District was successful in obtaining a Proposition 13 grant for $425,000 to perform a programmatic Environmental Impact Report for approximately 175 South Coast parcels to bring sewer to this area (including the Rincon Point homes).

5.2.3 Clean Beaches Initiative

The State of California approved $2.5 million for facilities that could improve ocean water quality in popular local beaches. No details of implementation are available at this time. The projects are summarized below.

Summary of Proposed Beach Water Quality Improvement Projects

WATERSHED	LEAD AGENCY	PROJECT	MATCH	FUND REQUEST
Arroyo Burro Beach	City of Santa Barbara County of Santa Barbara	Storm-drain treatment facilities Vactor Truck	$ 35,000 $40,000/yr	$200,000 $278,000
Arroyo Quemado Beach	County Health Department	Septic system upgrade/replacement	$35,000	$125,000
Jalama Beach	County Parks Department	Septic system upgrade, Bioswale	$50,000	$250,000
Gaviota Beach	County Health Department	Projects must await watershed assessment	0	0
Mission Creek (East Beach)	City of Santa Barbara	Storm-drain treatment facilities	$32,000	$200,000
Refugio Beach	County Public Works (with State Parks)	Septic system upgrade, Bioswale		$723,000
Rincon Beach	County Parks and State Parks	New sanitation facilities, connection to sanitary sewer	$120,000	$500,000
TOTAL			**$312,000**	**$2,276,000**

5.3 Development of a Regional NPDES Permit

The Phase I urban storm water communities of northern and southern California obtained their first permits in the early 1990's. In order to develop the most effective and efficient pollution prevention programs, the larger municipalities and County organizations became co-permittees in large, regional permits. As an example, one of the regional permits for Los Angeles areas includes the County of Los Angeles and 84 municipalities as co-permittees. The State and Regional Water Boards are advocating a similar approach for the Phase II communities.

The Intergovernmental Committee was formed in November of 1998 to explore the concept of a regional permit and to coordinate pollution prevention programs between the Phase II communities in Santa Barbara County. The original members included the four designated municipalities- Lompoc, Santa Maria, Carpinteria and the City of Santa Barbara-, the County and the Regional Water Quality Control Board staff.

The Committee has recently expanded to include Caltrans, Vandenberg Air Force Base and the City of San Luis Obispo. Although a countywide, regional permit option is not favored by all, other options such as a south coast regional permit are still being considered. As the deadline for permit application, April 2003, rapidly approaches, additional facilities and operations will be included in these discussions. These include such entities as:

- The Earl Warren Showgrounds
- The University of California at Santa Barbara
- The Lompoc Penitentiary
- Sanitary Districts
- School Districts
- and many others

Some of these entities may be included as co-permittees (e.g. UCSB) where they will be responsible for all activities on their property and to prevent the discharge of any pollutants to the municipal storm water collection system. Others will share in the County program such as the street sweeping program for the Goleta West Sanitary District, the detection of illicit discharges through the ongoing maintenance and inspection program of all sanitary sewer facilities as performed by the Laguna Sanitation District, as well as being responsible for good housekeeping for all of their operations (e.g. equipment maintenance, line repairs, etc.).

The County has been working very closely with the SWRCB and the RWQCB on the ongoing development of the Phase II permit guidance materials and regulations. County staff chairs the Phase II Implementation Working Group of the California Storm Water Quality Task Force (See Section 3.3). Bi-monthly meetings are held with other Task Force members as well as SWRCB and RWQCB staff members. As part of the Phase II regulations, the SWRCB is required to develop a model urban storm water runoff permit and a "toolbox" of guidance materials to assist with the selection of appropriate storm water program BMPs. The SWRCB is also working on a statewide designation criteria policy for the Phase II communities. The designation criteria will be based upon the 2000 Census information. The federal regulations designate all municipalities over 10,000 population and with a population density of 1,000 per square mile. The four identified municipalities within Santa Barbara County are included, but vast areas of the County unincorporated area are still undesignated. These areas include Santa Ynez, Los Olivos, Ballard, Mission Hills and many other areas. The designation of these areas could significantly increase the level and extent of the Counties urban storm water runoff program. According to the latest communications with the SWRCB staff, the designation criteria is to be released for review in the late fall of 2001 and the model permit and toolbox materials are to be made available in the Spring of 2002. The longer these materials are delayed, the more difficult it will be for the County to design an appropriate urban storm water program, establish an appropriate funding source and level of funding, and to meet the April 2003 application deadline.

6.0 Project Clean Water Goals for FY 2001/2002

As discussed in Section 2, a major focus of Project Clean Water efforts is compliance with the Phase II NPDES requirements. Below is a list of the six minimum control measures specified in the Phase II NPDES regulations, and examples of specific project goals for the 2001/2002 FY that relate to each measure. (See Section 4.1 for a more complete description of each measure.). These goals are representative, and do not cover the complete 2001/2002 work plan for PCW.

1. Public Involvement & Participation:

- Conduct 12 monthly or four quarterly Project Clean Water Stakeholder Committee meetings. Continue to recruit new participants to the committee.

- Conduct at least one neighborhood meeting where storm-drain retrofit projects or nearby creek restoration efforts are planned.

2. Public Education & Outreach:

- Promote visitation and field trips to the South Coast Watershed Resource Center, which officially opened in August 2001.

- Hold two teacher workshops for the associate "Mountains to the Sea" watershed curriculum.

- Post informational signs in each area where restoration or storm-drain retrofit projects are undertaken.

3. Illicit Connection & Discharge Detection:

- Make applications for the Septic Remediation (Loan) Program available in early 2002, targeting those septic systems that are in a state of failure and where sanitary sewer service is available.

- Complete electronic maps of storm-drain systems in urbanized areas. Evaluate existing "smoke-testing" programs in each unincorporated area subject to Phase II regulations for adequacy.

4. Municipal Operations Control:

- Publish the final report on County operations in relation to prevention of polluted storm water runoff, recommending modifications to existing operations to improve operational practices to eliminate or reduce polluted runoff.

5. Construction Site Discharge Control:

- Initiate the development of a storm water ordinance to control discharges to the County storm drain collection system from construction activities.

- Conduct at least one erosion control and pollution control seminars for construction contractors and building inspectors.

6. New Development/Redevelopment:

- Complete evaluation of current County land use policies and development standards; propose changes to achieve objectives of storm-water quality protection.

- Complete the first phase of the treatment control BMP project, a bioswale at the Turnpike Connector, which has been designed and is scheduled to be installed this FY.

Grant funding for FY 2001/2002

Several grant funding sources have been obtained for Project Clean Water or related local programs. These resources allow development of "pilot projects" to test applicability of new

technology, and develop and implement programs to address issues beyond the capability of existing County resources. These supplemental revenue sources are discussed below.

State Funding: Septic Systems

Santa Barbara County received $2M is a one-time budget allocation. $1.75M is to be used for a revolving low interest loan program for homeowner's to properly abandon their existing septic systems in favor of sanitary sewer service (where available). The remaining $0.25M is to be used to conduct a countywide septic system sanitary survey- a project to examine problematic areas of the county for septic system usage, and to provide recommendations on alternatives to septic systems in those areas.

The Sanitary Survey Project is well underway and is being handled by the Questa Engineering, Corporation. A final report is due in the spring of 2002.

The Septic Remediation (Loan) Program is in the development stages. Staff are working with local lending institutes to establish the criteria and parameters of the program. The first round of funding and application packages should be completed in the early spring of 2002.

Clean Beaches Initiative:

Under the Clean Beach Initiative funding established by the Governor of California for the FY 2001/2002, the County of Santa Barbara will receive $2.5M for several coastal projects designed to reduce the levels of bacterial contamination at the recreational beaches.

Under two separate line items, funding will be provided for projects at:

- Rincon Beach
- Arroyo Burro Beach
- Arroyo Quemado Beach
- Refugio Beach
- Jalama Beach
- Mission Creek (at East Beach)
- Gaviota Beach (no funding currently allocated)

Most of the proposed projects involve the application of treatment control BMPs and/or septic conversion to sanitary sewer feasibility studies (e.g. Arroyo Quemado). The funding will also be used to obtain a vactor truck for the County Roads Division that will be used to clean and maintain existing storm drain outlets. This year, contracts and finalized work plans must be put into place with the State Water Resources Control Board, which has administrative oversight of the funding allocations.

EPA Grant: Hydrogeomorphic Assessment and Demonstration Restoration Projects:

This grant project was initiated in March 2000. The draft HGM guidebook will be completed in September, and guidebook training is scheduled for November. A project to use the HGM guidebook to develop final designs for the demonstration restoration sites (funded by the Southern California Wetlands Recovery Project) will be initiated in October and should be complete by January 2002. Work on at least two of the demonstration restoration sites

(San Jose and Arroyo Burro Creeks) will begin in the spring. Design for the Carpinteria Creek demonstration site should be completed in the spring.

EPA Environmental Education Grant:

The County and City of Santa Barbara received an EPA Environmental Education Grant to add an advanced level training to the Green Gardener Certification Program. (This program trains landscape maintenance professionals in sustainable practices that reduce polluted runoff from landscapes.) This year the program will offer two advanced courses (fall '01 and spring '02), in addition to the basic training which will be offered concurrently.