

# **Project Clean Water 1998-1999 Report**

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## **SUMMARY**

In 1998, the Santa Barbara County Board of Supervisors authorized participation in three coordinated water quality projects: Project Clean Water (PCW), South Coast Watershed Characterization Study (SCWCS), and Project National Pollution Discharge Elimination System (NPDES). This report presents the results of the first six months of those studies and recommends a work-plan for the next fiscal year.

To implement these projects, the City and County staff have met with over 100 members of the community in numerous settings from large "Stakeholders Committee" to small working groups (See Appendix A). In addition, over 1200 water samples were taken from seven of creeks and evaluated to determine pollution sources. A wide range of solutions, both short-term and long-term, has been developed.

The interest and initiative of public interest groups continue to be essential. Success of the long-term program will depend on the support and participation of key interest groups and the public as a whole. The report by the Stakeholders is an integral part of this report and is attached as Appendix H.

## **Project Clean Water and the South Coast Watershed Characterization Study**

Creek surveys and water testing under low flow conditions were completed during the fall of 1998, and results were presented in the February 2, 1999 report (see Appendix B). In addition, data was collected for the SCWCS on a range of potential pollutants during August and October, 1998 and following selected storms in the winter of 1998/99. While additional data may provide insight into bacterial contamination in these creeks and may further differentiate sources, staff believes that sufficient information exists to recommend implementation of the stakeholder solutions as part of a long-term water quality program.

The Technical Advisory Committee (TAC) reviewed the sampling program, follow-up protocol, and interpretation of laboratory test results, and has provided input for the other studies described below.

### **Project NPDES**

While the timing and scope of the final federal regulations remain uncertain, staff believes that there is enough information, as well as community interest to initiate the permit development process and pursue definite water quality improvement measures. Santa Barbara County and other jurisdictions must apply for an urban storm water runoff (NPDES) permit by March of the year 2003, and the plans adopted with the permit must be implemented by March 2008. However, there is clear interest on the south coast to implement source control measures before the federal mandate becomes effective.

Project NPDES has focused on alternative approaches to Phase II requirements that would efficiently serve all local agencies in the County permit area. An Intergovernmental Committee has been established to explore the permit options, including the County of Santa Barbara, the cities of Santa Barbara, Lompoc, Carpinteria and Santa Maria, and the Regional Water Quality Control Board. The main focus, thus far, has been on the advantages of a countywide permit versus individual permits for each of the governments.

Staff have worked closely with Stakeholders to outline long-term solutions directed towards improving surface water quality. There is considerable overlap between the recommended Stakeholder solutions and the BMPs suggested for the County's NPDES permit, some of which will be required by the final regulations. The suggested BMPs may be organized into several basic types: public outreach and involvement, municipal operations and control, development design and monitoring, commercial facilities controls, industrial facilities controls, illicit connections and discharges, and watershed restoration.

### **Public Involvement and the Definition of Problems and Solutions**

A number of community groups have been active in surface water quality issues for years, and have initiated successful public education campaigns, as well as both creek cleanup and restoration projects. Involvement of these groups has been essential in order to obtain their knowledge of the issues, individual expertise, and help developing solutions. The Stakeholders formed three subcommittees to 1) evaluate sampling procedures and protocol, 2) develop an effective public education & outreach campaign, and 3) evaluate the problems documented and develop solutions for the community's implementation.

### **Implementation of Short-term Solutions**

A number of solutions have been implemented in the last six months by the County, the City of Santa Barbara, the City of Carpinteria, and various community groups. Some are recognized as actions with well-demonstrated

benefits and will continue as part of the long-term programs. Others were implemented as pilot projects to allow evaluation of their efficacy.

### **Medium-term and Long-term Solutions**

The Stakeholders identified a number of "medium-term" and "long-term" solutions that could not be implemented within the short-term phase of Project Clean Water. These solutions cannot be implemented effectively without some degree of further definition, workplan development, and priority setting.

One notable problem that was identified, for which no practical solution has been identified, is the presence of human encampments in the creeks. The issue of homelessness is one of general public concern. It has been addressed by other groups before and is of a different scope than this project. However, unsanitary will continue to be a contributing factor to our creek and ocean contamination until a solution is found. We urge the Board to consider the effect this has on local water quality whenever addressing this issue.

### **Evaluation of Temporary Low-Flow Treatment Options**

URS Greiner Woodward Clyde was hired to perform a preliminary analysis of temporary treatment options in the lower Arroyo Burro Creek area. Their report concludes that the two most advisable techniques, treatment by ozone and exposure to ultra-violet light, are limited in their effectiveness due to bacteria subsequently introduced by lagoon organisms, would only be effective under low flow conditions, and would require permitting delaying them until after the summer 1999. Staff, therefore recommends against these options at this time.

### **Other Studies**

In addition, to better define the sources and interaction of bacterial contamination with the creek and beach areas, two additional studies are in progress and are outlined below.

Plume Migration of Bacterial Contamination at Arroyo Burro Beach (already underway)

Lower Rincon Watershed Study will use DNA analysis to determine sources of bacteria

### **Proposed Continuing Efforts**

Some key program elements that will be supported through the transition period between now and the end of the fiscal year include 1) Arroyo Burro Watershed Resource Center, 2) pilot DNA study in the Rincon Creek area, 3) completion of the plume migration study, 4) the ongoing public information campaign, and 5) follow-up on complaints and previously identified "hot spots".

Because of the overlap in the scope of the projects, staff recommends that they be combined into one program that would include:

Implementation of straight-forward or immediately applicable BMPs

Enhanced enforcement based on expanded and targeted education

Development of BMP tracking and reporting system

Evaluation of the DNA pilot study for potential application elsewhere

Identification and evaluation of additional BMPs

Ongoing ocean water monitoring and additional creek testing

This program would be in the Public Works Department, Water Resources Division, along with the Water Agency and Flood Control, and would be managed by the Water Agency Manager. The Public Health Department, Environmental Health Services Division, will continue to play a key role in NPDES permit development and in creek and ocean water sampling and monitoring.

Other departments will also have roles in developing and implementing BMPs, including, the Roads Division of Public Works, the Parks Department, Planning and Development, and General Services.

### **Fiscal Issues**

Of the \$150,000 appropriated for Project Clean Water, approximately \$37,000 was used for temporary staff to survey creeks and to collect samples, and to create a geographical information system (GIS) database to house the data collected. Another \$37,000 was used to increase the capacity of the Public Health Lab. The remainder was used for external testing, public education and project supplies.

It is anticipated that no major expenditures will need to be made between now and June 30, 1999, except for any amounts related to the Arroyo Burro Watershed Resource Center (a tentative agreement has been reached for an advanced sum of \$15,000 to provide universal access).

Estimated County resources needed for the program for the fiscal year 1999-2000 are as follows:

Program Staff \$ 405,000

Best Management Practices Development 140,000

Expanded Creek Monitoring 182,500

Public Education 110,000

Equipment 25,800

Operating Expenses 16,400

Total \$ 879,700

Project Clean Water staff and the County Administrator will analyze program needs and return with a budget expansion request for the fiscal year 1999-2000 during the normal budget process. We have identified various possible funding sources for years after 1999-2000 including taxes, assessments, fees, grants, and debt, and have made a preliminary evaluation of those sources as they pertain to this project.

## **Recommendations**

While a great deal has been learned, much of the information gathered, so far, is preliminary or inconclusive. Our recommendations, therefore, are focused on creating a program structure that will allow us to continue gathering data on causes of pollution, to plan and begin implementing best management practices (BMPs), to implement public outreach programs, and to implement certain short-term solutions. With this in mind, based on the information we have gathered, we recommend the following actions for the Board of Supervisors:

Conceptually approve Arroyo Burro Watershed Center project, whereby the County will contract with the Community Environmental Council (CEC) to lease and/or manage the ranger residence located at Arroyo Burro Beach County Park as a community educational "watershed resource center", and direct Project Clean Water staff and Parks Department to return to the Board with a lease and/or management agreement of mutually acceptable terms. (This does not preclude obtaining requisite permits from the City of Santa Barbara);

Direct Project Clean Water staff and the County Administrator to prepare a budget expansion request for the Board of Supervisors' consideration during 1999-2000 budget hearings;

Direct the Personnel Department to work with affected departments to develop job classifications and specifications as necessary;

Direct the County Administrator to evaluate the feasibility of creating a new County Service Area and implementing a special tax to fund Project Clean Water for fiscal years after 1999-2000;

Approve the Lower Rincon Creek Watershed Study, a pilot DNA testing project, and authorize Project Clean Water staff to negotiate a contract for services from Dr. Mansour Samadpour to provide DNA testing related to the Lower Rincon Creek Watershed Study; combine the projects previously referred to as the South Coast Watershed Characterization Study, Project Clean Water, and Project NPDES into one project to be known as Project Clean Water, and approve the structure and scope for the development of a long-term program as described herein.

## **I INTRODUCTION**

In 1998, the Santa Barbara County Board of Supervisors, the City Council of the City of Santa Barbara, and the City Council of the City of Carpinteria authorized participation in three coordinated water quality projects and related cleanup efforts in south coast creeks. This report presents the results of the first six months of those studies and recommends a work-plan for the next 15 months (through June 2000).

To implement these projects, the City and County staff have met with over 100 members of the community in numerous settings from large "Stakeholders committee" to small working groups (See Appendix A). In addition, over 1200 water samples were taken and miles of creek evaluated to characterize water quality and evaluate pollution sources. A wide range of solutions, both short-term and long-term, has been developed. Within the context of a long-term water quality program proposed in this report.

The interest and initiative of public interest groups continue to be essential to the community's efforts to improve local water quality. Success of the long-term program will depend on the support and active participation of key interest groups and the public as a whole. A public outreach and education program has been initiated and will continue to be utilized to maintain this issue in the public awareness and to encourage community support for local governments' efforts. For ease of administration and public identification with the

County's various water quality efforts, participating Stakeholders have suggested that, in the future, the programs identified below be referred to as a single program – Project Clean Water.

### **Purpose of this Final Report**

The purpose of this report is to summarize results of the following three water quality projects:

the South-Coast Watershed Characterization Study (SCWCS),

Project Clean Water (PCW), and

Project National Pollution Discharge Elimination System (PNPDES).

The objectives and scope of each study are summarized below. Results of field investigations and water quality sampling are presented in Appendix B; conclusions are presented in Section II of this report.

This report also makes staff recommendations regarding specific stakeholder proposals developed to address stream and ocean water pollution problems. In cooperation with City and County staff, the Stakeholders established working groups to develop focused reports for each potential solution identified by the South Coast Watershed Alliance in their letter of November 1998 (see Appendix C). The working group reports are attached as Appendix H. Their recommendations are discussed in Sections II and III and would be implemented as part of the proposed long-term water quality program.

In order to address long-term water quality concerns and to meet the requirements of the Clean Water Act, staff recommends establishment of a long-term program focusing exclusively on surface-water quality. Section IV of this report outlines the scope and structure of this proposed long-term water quality program (including compliance with anticipated NPDES regulations).

This report includes:

#### Section II

The final report on the initially authorized Project Clean Water scope of work

Preliminary results of the South Coast Watershed Characterization Study

A description of the interagency and stakeholder coordination process

A brief description of recommended short-term and long-term solutions

#### Section III

A summary of progress in developing a regional NPDES permit process

A description of potential Best Management Practices (BMPs) and their relationship to Recommended stakeholder solutions

#### Section IV

Staff recommendations for the implementation of identified solutions

Proposed scope of work through the beginning of the new fiscal year

Structure of the proposed county long-term water quality program

Scope of work of a long-term water quality program for FY 99-00

#### Section V

Expenditures to date

Proposed budgets for both the end of this fiscal year and next fiscal year

Proposed funding sources for the next 15 months.

#### Section VI

Recommendations

Long-term funding for the County's part of this program is unresolved. Although several options are discussed in Section V, resolution of this issue will require close coordination among the Administrative Office, the Board of Supervisors, Project Clean Water staff and the community. Budget and funding for the City of Santa Barbara's portions of the project are discussed in the City Council Agenda.

#### **Background**

This section briefly outlines the history of

The South-Coast Watershed Characterization Study (SCWCS),

Project Clean Water (PCW), and

Project National Pollution Discharge Elimination System (PNPDES).

The SCWCS was approved by the County in April 1998 and subsequently by the Cities of Santa Barbara and Carpinteria to gather preliminary data for development of the anticipated NPDES permit and to address other water quality issues, specifically total maximum daily load (TMDL) standards. The SCWCS had three elements:

Sample four creeks during low flow conditions to establish "background " levels;

Sample each of the four creeks after three separate storm events to establish storm water quality;

Assess storm water influences from different types of land-uses within each watershed.

The four creeks were Rincon Creek, Carpinteria Creek, Mission Creek, and Arroyo Burro Creek.

In September 1998 the Board of Supervisors and the City of Santa Barbara established Project Clean Water (PCW) and Project NPDES (PNPDES) to address community concerns regarding frequent beach closures due to bacterial contamination. The short-term objectives of PCW and PNPDES were:

- Walk creeks and look for potential sources of contamination in low flow conditions;
- Sample the creeks and define "hotspots" of high bacteria levels;
- Institute the solutions possible in the short-term;
- Develop short-term treatment options (if necessary and feasible);
- Establish an interagency framework for local (long-term) NPDES permit requirements.

As part of the same efforts staff:

- Sought the help of a broad cross-section of the community;
- Helped support sampling for and included data results from the South Coast Watershed Characterization Study;
- Began establishment of the County-wide NPDES permitting process;
- Developed community based recommendations for mid- and long-term solutions.

On November 24, 1998 we reported to the Board and Council successful efforts to:

- Increase the capacity of the County public health laboratory;
- Walk and sample seven south coast creeks;
- Work closely with landowners, other agencies, and community groups;
- Build upon the experience and knowledge of the community and other agencies;
- Further educate the community;
- Initiate straightforward solutions.

On February 2, 1999 we returned to the Board and the Council with a PCW and PNPDES status report which:

- Summarized results of field investigations;
- Included a progress report on solutions;

Provided examples from the public information campaign;  
Gave an estimate of enforcement and long-term solution costs;  
Reported progress on setting up PNPDES;  
Outlined potential funding options for the long-term elements of the project.

On February 2 PCW staff was directed to return in April with the final report of the initial phase of Project Clean Water and a status report for the South Coast Watershed Characterization Study and Project NPDES. Specifically the report was to include:

The final report on the initially authorized PCW scope of work;  
Preliminary results of the SCWCS;  
Progress in developing a long-term water quality program (Project NPDES);  
Recommendations of the Stakeholder working groups on their proposed solutions;  
Staff recommendations for the implementation of these solutions;  
A proposed scope of work through the beginning of the new fiscal year;  
Structure of the proposed county long-term water quality program;  
Scope of work of a long-term water quality program for FY 99-00;  
Proposed funding sources (short-term and long-term).

Significant progress has been made on these three water quality projects since their inception. To gain efficiency due to overlap in sampling, source reduction, community outreach enforcement and other issues, they have in effect been combined into a single program at the staff level. This approach has helped reduce confusion among the public as well. Thus in parts of the following sections discussions are combined where logical.

## **II PROJECT CLEAN WATER & SOUTH COAST WATERSHED CHARACTERIZATION STUDY**

The data-gathering phase for both projects is complete. Although the report for SCWCS will not be complete for several weeks, some preliminary conclusions can be drawn and are included in this report. Because the data from these two projects are complementary, the two projects are discussed together and a single set of conclusions drawn for each watershed. This is due to several factors including: 1) both high flow and low flow conditions are tested, 2) results of SCWCS thus far indicate that, of the pollutants tested for, bacteria are the principal pollutants at levels of concern during storm events and 3) the creek walks allowed a preliminary characterization of the creeks.

## **Objectives of Project Clean Water and South Coast Watershed Characterization Study**

The SCWCS was intended to gather preliminary data for development of the anticipated NPDES permit (regulating storm-water quality) and to address issues relating to "total maximum daily load" (TMDL), a potential regulatory mandate that staff anticipates becoming important with a few years.

Four creeks were sampled both during low flow conditions (to establish "background " levels) and after three separate storm events (to establish storm water quality), so as to assess storm water influences from different types of land-uses within the watershed. The four creeks sampled were Rincon Creek, Carpinteria Creek, Mission Creek, and Arroyo Burro Creek. The samples were analyzed for a wide range of contaminants potentially found in storm water and consistent with testing protocols in existing Phase I NPDES programs. The final report is in preparation; preliminary results are included in the discussion below.

PCW focused on bacterial contamination under low flow conditions and was intended to address the immediate issues relating to local beach closures. As approved, the project had five elements:

Walk seven creeks and major tributaries to identify potential bacteria sources,

Systematically sample the creeks and suspected "hot spots" during low flow to identify sources,

Develop public information and outreach to voluntarily reduce contamination,

Enhance enforcement programs as necessary, and

Evaluate other means of reducing bacteria at the beaches (treatment options).

The four creeks of the SCWCS were included plus Sycamore Creek, Arroyo Quemado Creek and Jalama Creek.

Between the more intense sampling in October and November for PCW, and the four storm runoff events of the SCWCS, a better understanding of water quality in the four streams has emerged. The results of the investigations are summarized in Appendix B. Our conclusions are outlined in the following section.

## **Results of Field Investigations**

Creek walks, bacterial sampling under low flow conditions and initial follow-ups were completed between October 5, 1998 and December 4, 1998. Field observations and laboratory results were presented in the February 2, 1999 report and are summarized in Appendix B. In addition, the SCWCS collected data on a wide range of potential pollutants during low flow in August and October 1998 and during or after selected storms in the fall of 1998 and winter of 1999.

The conclusions listed below are based on storm runoff data collected in four creeks as part of the South Coast Watershed Characterization Study have been combined with low flow data collected from these four creeks plus three others as part of Project Clean Water. While additional data may provide insight regarding transport and fate of bacterial contamination in these creeks and may further differentiate sources, staff believes that sufficient information exists to recommend implementation of the stakeholder solutions as part of a long-term water quality program.

Rincon Creek

Based on data from PCW and SCWCS we conclude:

Bacteria are the principal pollutants of concern;

Numerous sources of bacteria occur throughout the watershed;

No direct link between septic systems and beach closures has yet been established;

Storm-water carries several times the low flow levels of bacteria;

Indication of detergent contamination has been found in beach sand;

#### Carpinteria Creek

Based on data from PCW and SCWCS we conclude:

Much of the upper watershed has acceptable levels of bacteria;

Bacteria are the principal pollutants of concern;

Storm drains and lagoon fauna such as birds are probable sources of high levels in the lower watershed;

Storm-water carries several times the low flow levels of bacteria.

#### Sycamore Creek

Based on data from PCW we conclude:

Bacteria are the principal pollutants of concern;

Numerous sources of bacteria occur throughout the watershed;

Numerous diffuse sources and lagoon fauna such as birds are probable sources of high levels in the lower watershed.

#### Mission Creek

Based on data from PCW and SCWCS we conclude:

Bacteria are the principal pollutants of concern;

Much of the uppermost watershed has acceptable levels of bacteria,;

Storm drains, creek encampments, and lagoon fauna such as birds are probable sources of high levels in the lower watershed;

No direct link between septic systems and beach closures has yet been established;

Storm-water carries several times the low flow levels of bacteria.

#### Arroyo Burro Creek

Based on data from PCW and SCWCS we conclude:

Bacteria are the principal pollutants of concern

Numerous sources of bacteria occur throughout the watershed;

Much of the uppermost watershed has acceptable levels of bacteria;

Storm drains and creek encampments are probable sources of high levels in the middle portions of the watershed;

Storm drains and lagoon fauna such as birds are probable sources of high levels in the lower watershed;

No direct link between septic systems and beach closures has yet been established;

Storm-water carries several times the low flow levels of bacteria.

#### Arroyo Quemado Creek

Based on data from PCW we conclude:

The upper watershed has acceptable levels of bacteria;

Bacteria are the principal pollutants of concern;

Lagoon fauna, such as birds, is a probable source of high levels in the lower watershed.

#### Jalama Creek

Based on data from PCW we conclude:

Bacteria are the principal pollutants of concern;

Bacterial levels measured in the creek are moderate above the park;

Levels are higher in the vicinity of the mouth of the creek;

Lagoon fauna such as birds may be sources of higher levels at the mouth of the creek.

These results suggest that bacteria levels in both storm runoff and low flow conditions are of concern in all seven creeks, and that a wide range of source reduction and pollution treatment options need to be evaluated as discussed in Section III, Implementation of Best Management Practices(BMPs) and stakeholder solutions below.

## **Interagency and Public Coordination**

Interagency coordination occurred through meetings of involved agencies to implement SCWCS, PCW and NPDES and an interagency technical advisory committee. The scope and timing of SCWCS sampling events were coordinated with the City of Santa Barbara, the City of Carpinteria and the County of Ventura. Other support came from Goleta, Montecito and Carpinteria Sanitary Districts for equipment and technical support.

The PCW technical advisory committee (TAC) reviewed the sampling program, follow-up protocol, and interpretation of sampling and laboratory test results. In addition, they have provided input for the development of the scope and work-plan for the Lower Rincon Watershed Study (using DNA techniques), the study of Plume Migration of Bacterial Contamination at Arroyo Burro Beach, and the Analysis of Temporary (low flow) Treatment Alternatives, as discussed in Section III.

Agencies throughout the County have participated in an Interagency Coordination Committee in defining the nature of NPDES requirements for areas in Santa Barbara County, organizational and funding options (based on other areas of California) and sharing information regarding the results of Project Clean Water and the SCWCS.

As part of the long-term program proposed in Section IV, the TAC and NPDES coordinating committee will continue to provide input for field work and program development.

## **Public Involvement and the Definition of Problems and Solutions**

From the beginning, public involvement was essential because: 1) some community groups had a notion of the problems that needed to be addressed, 2) Stakeholders offered technical expertise and research skills to develop solutions and 3) no solutions would be successful without community support and involvement. A number of community groups had been active in surface water quality issues for some time. Over the past several years, these groups had initiated successful public education campaigns as well as both creek cleanup and restoration projects. Project Clean Water was deliberately set up to complement these efforts through establishment of a Stakeholders committee that met throughout the project.

The Stakeholders formed three subcommittees to:

Evaluate sampling procedures and protocol,

Develop an effective public outreach campaign, and

Evaluate the problems documented and develop solutions for the community's implementation.

All three subcommittees met several times in the course of their work. The subcommittees for Public Outreach and Solutions broke into smaller more focused working groups to review information and prepare specific recommendations. These recommendations are discussed below and are presented in the working group summary reports contained in Appendix H.

### **Problems and Solutions Definition Subcommittee**

The Subcommittee for definition and implementation of solutions was established to allow members of the Stakeholders Committee to focus on the definition of water quality problems in the Southern part of the County and to develop solutions by which to address these problems. The meetings, which were open to any interested parties, were held twice a month. Early in the process the South Coast Watershed Alliance suggested a series of potential solutions. This list focused the efforts of the subcommittee; short-term solutions were initiated by the appropriate local agencies. The longer-term solutions became the subject of investigations by specific working groups. The working groups prepared reports outlining the status of each solution and making specific recommendations for implementation. The reports of the working groups, including their recommendations, are attached as Appendix H and summarized in Sections III and IV.

#### Public Education and Outreach Subcommittee

The subcommittee for public outreach and education was set up to allow focused work on developing public outreach materials and to develop a strategy for both the period of PCW and the next fiscal year. The Subcommittee broke into working groups to allow focus on specific elements of the public outreach. From the beginning, the groups focused on complementing and expanding on-going information campaigns. Among their efforts the subcommittee cosponsored and participated in storm drain stenciling, a Hispanic Public Health Forum, an ongoing media campaign and Earth Day preparations. In addition the media campaign will continue through the beginning of summer. The working groups prepared reports and recommendations attached as Appendix H and summarized in Sections III and IV.

Recommendations from Subcommittees for both "solutions" and "public outreach and education" are combined since their efforts intend to reduce sources of pollution and/or improve impaired water quality in local streams. Since all are measures intended to reduce sources of pollution or reduce pollution that has entered the drainage system, they are viewed as "solutions".

#### Technical Protocol Subcommittee

The technical protocol subcommittee was set up to allow the Stakeholders to review and comment on the technical aspects of the projects. The meetings were open to anyone interested in these aspects of the projects. Materials to be discussed were circulated before each meeting when possible. The meetings were also an opportunity for Stakeholders to become educated as to the technical issues and the strategies proposed to investigate the problems.

The technical protocol subcommittee reviewed the proposed sampling program, DNA testing proposals, initial interpretation of results, preliminary results of both the "plume migration study" and the Temporary Treatment Alternatives Study.

#### **Implementation of Short-term Solutions**

A number of solutions have been implemented in the last six months. Some are recognized as actions with well-demonstrated benefits and will continue as part of the long-term programs. Others were implemented as pilot projects to allow evaluation of their efficacy.

The City of Santa Barbara has implemented the following solutions:

Sewer system testing

Creek cleanups

Trash cans and portable toilets installation

Storm-drain clean-outs

Public outreach and education

"No hassle" (no cost) RV dumping

Adoption of three, more specific water quality ordinances

The City of Carpinteria has implemented the following solutions:

Creek cleanup

Port-potties in human use areas of the creek

The County of Santa Barbara has implemented the following solutions:

Public outreach and education

Additional toilet facilities in the Rincon Point area

Hot-line and pollution report follow-up

Community Groups have implemented the following solutions:

Creek cleanups

Stenciling

Public outreach and education

Arroyo Burro interpretive center

Reporting contamination sources

### **Medium-term and Long-term Solutions**

The Stakeholders identified a number of "medium-term" and "long-term" solutions. These solutions are so characterized because they could not be implemented within the six-month term of Project Clean Water. Many of these solutions cannot be implemented effectively without development of workplans. In some cases the number of potential projects was so large that there needed to be some organization and priority setting to guide future allocation of resources. In other cases the need for some elements of proposed recommendations

was not clear and development of a work plan would allow a more broad-based group to address the issue(s) in greater detail.

In general terms, the recommendations address either source reduction or pollution reduction. Due to the nature of the pollution found in local streams, both approaches are appropriate. In addition, some of the pollution treatment methods recommended (e.g. riparian zone and wetland restoration) have other ecological and aesthetic benefits. For these reasons staff supports all of the stakeholder recommendations being included in the proposed long-term water quality program for fiscal year 1999-2000.

The staff recommends support for all the proposed stakeholder recommendations; specifically, that those that are well defined and effective (or for which work plans are now complete) should be implemented in the next fiscal year. For those that need more definition, work plans need to be developed for your consideration by the end of the fiscal year.

In many instances the Stakeholder recommendations are to implement or evaluate Best Management Practices (BMPs) that are suggested in existing guides for storm water quality control programs, see Appendix G. Consistent with expected Federal mandates, a number of additional BMPs will be evaluated during the next year as the basis of the County's NPDES Phase II permit.

Even with the extensive stakeholder efforts, not all mandated or recommended BMPs were addressed in their recommendations. This is in part because there are many BMPs that address other types of pollutants in addition to bacteria. Therefore the proposed program for FY 99-00 includes work to address BMPs in addition to those identified in the attached report. The overall implementation of Stakeholder solutions and other BMPs is discussed in Section III, Implementation of Best Management Practices and stakeholder solutions, below.

In some areas the Stakeholder recommendations appear to go beyond the minimum recommendations of published literature on BMPs. However because the recommendations appear to be consistent with a number of General Plan Policies, we believe them to be appropriate for inclusion in the next phase of PCW. From these early phases may emerge projects worthy of implementation for reasons in addition to water quality improvement.

One notable problem that was identified, for which no practical solution has been identified, is the presence of human encampments in the creeks. The issue of homelessness is one of general public concern. It has been addressed by other groups before and is of a different scope than this project. However, unsanitary will continue to be a contributing factor to our creek and ocean contamination until a solution is found. We urge the Board to consider the effect this has on local water quality whenever addressing this issue.

### **Evaluation of Temporary Low-Flow Treatment Options**

Evaluation of temporary treatment low flows to reduce bacteria was an element of the approved PCW scope of work. The study was intended to evaluate temporary methods of reducing bacteria levels transported into creek-mouth lagoons under low flow conditions and, thus, potentially lowering ocean bacteria levels. URS Greiner Woodward Clyde was hired to perform a preliminary analysis of options in the lower Arroyo Burro Creek area. The cost was shared among the City of Santa Barbara, Southern California Edison and the County. The scope of the analysis and the draft report were discussed with the Stakeholders Subcommittee on Protocol, and the interagency TAC.

From the first discussions of this study, some local interests have objected to the analysis on several grounds including 1) the analysis seemed to detract from the focus on source reduction seen as a more appropriate long term strategy and 2) treatment options were seen as having unacceptable potential environmental impacts. With these explicit concerns the Stakeholders have continued to review and comment on the progress of the report.

The report concludes that two techniques using "package" (prefabricated) systems are potentially most feasible: 1) treatment by ozone or 2) exposure to ultra-violet (UV) light. Both options are limited in their effectiveness by several factors including:

Treatment will not prevent introduction of bacteria by lagoon organisms (such as birds), and

Only low flows (late spring and summer) could be treated.

Unless an emergency exemption was obtained, the lead-time for permitting either option would preclude operation in the summer 1999.

Thus, staff does not recommend pursuing any short-term, temporary treatment options, at this time.

A summary of the report is contained in Appendix E. The entire report may be obtained from the Santa Barbara County Water Agency or Santa Barbara City Public Works Department offices.

### **III PROJECT NPDES AND IMPLEMENTATION OF SOLUTIONS**

This section discusses the progress made in establishing a cooperative interagency program to meet requirements of NPDES Phase II regulations applicable to areas of the County and certain incorporated areas. While the timing and final scope of the federal regulations remain uncertain, we believe that there is enough information and community interest to initiate the permit development process and pursue definite water quality improvement measures. There is clear interest in the south coast to implement source control measures before the federal mandate becomes effective.

In addition three studies to better delineate sources of pollution in local watersheds are discussed. These studies would both help direct pollution control efforts and clarify the health risk associated with high levels of bacteria.

Finally, the relationships between various stakeholder recommended actions and Best Management Practices (both suggested and mandated) are outlined. The implementation of source reduction and pollution attenuation measures is discussed. Specific responsibilities for the various BMPs (and stakeholder recommendations) is discussed in Section IV.

#### **Phase II NPDES requirements**

Implementation regulations have not yet been adopted for Phase II of the NPDES requirements as specified in the Federal Clean Water Act. The Environmental Protection Agency and State Water Resources Control Board are working under a court-initiated time frame to complete these regulations. The current projection is for finalization of these regulations by October 29, 1999. The previous promulgation date was March of 1999. As a result, compliance with these regulations has been adjusted to reflect the delay in implementation.

Therefore, Santa Barbara County and all other Phase II potential permittees must apply for an urban storm water runoff permit with the Regional Water Quality Control Board (RWQCB), State Water Resources Control Board and the EPA concurrently by March of the year 2003. The regulations further stipulate that urban storm water program plans approved and adopted in conjunction with the permit must be implemented within five years of permit approval (i.e. March 2008).

Because of the extended process and development period for the implementation regulations, there is little or no anticipation of major changes to current draft regulations. In addition, many elements are consistent with Phase I regulations. Such as:

Annual reporting is required detailing program operations, monitoring of BMP effectiveness, modifications and proposed modifications.

Permits are reviewed, evaluated, revised and re-issued every five years.

Each permit and program plan must contain a detailed description of the subject watersheds. These descriptions must detail all land use applications within the watershed as well as many other key elements (e.g. point source contributors, topographic and hydrologic descriptions, etc.). In many other Phase I program plans, a Geographical Information System (GIS) database is used to capture and report this information.

Development and implementation of BMPs. (Evaluation of specific land use contributions to storm water runoff water pollution is essential in designing and implementing effective BMPs specific to these land uses.)

Current draft regulations require minimum BMP implementation directed towards public information and outreach, land use regulation (development grading and project design), municipal operations control program, commercial facilities.

### **Progress to date**

Project NPDES has focused on defining alternative approaches to Phase II requirements that would efficiently serve all local agencies in the County permit area. Specifically, an approach based on a "co-permittee" arrangement among local agencies (based on successful models elsewhere in Southern California) is being evaluated.

An Intergovernmental Committee has been established to explore the permit options for the urbanized areas of Santa Barbara County. The current membership includes representatives from the NPDES identified municipalities in Santa Barbara County (City of Santa Barbara, City of Lompoc, City of Carpinteria and the City of Santa Maria), the Regional Water Quality Control Board and Program Managers of Project Clean Water and Project NPDES.

Because watersheds impacted by urban storm water runoff are not limited to incorporated areas, coordination with Phase II specified municipalities is an efficient use of limited resources. The main focus of the initial meetings has been centered on advantages of a countywide permit versus individual permits for each of the governments. Ventura County, a Phase I permittee, has been very helpful in providing background information for permit and program development. The last meeting of this committee was held on March 16, 1999.

Although permit application is not required for several years, the South Coast communities appear interested in implementing components of a NPDES program prior to permit acquisition. Project NPDES staff and Project Clean Water staff have worked closely with Stakeholders to outline long-term solutions directed towards

improving surface water quality. Over the next few months and into FY 99/00, Project Clean Water staff will further develop workplans for these proposed solutions.

The City of Santa Barbara is planning to implement specific best management practices (BMPs) such as storm drain inlet cleaning and retrofitting with filtration devices in an attempt to prevent pollutants entering the creeks and storm drain channels from public streets. Project Clean Water staff have been working closely with City Staff, and will be assisting with evaluation of the effectiveness of these BMPs. On a parallel course, the County staff will be evaluating similar programs where appropriate in the County.

Staff of Project NPDES has attended three bimonthly meetings of the Storm Water Quality Task Force (SWQTF). This is a state-wide organization with the goal of improving storm water quality and preventing receiving water pollution. SWQTF has been instrumental in the development of the "California Storm Water Best Management Practice Handbooks." The SWQTF is comprised of NPDES agency representatives, State Water Resources Board and Regional Water Quality Board Representatives, EPA representatives, and a variety of other regulatory, environmental and concerned citizen organizations. Currently, the SWQTF membership does not include very many potential Phase II permittees. As a result, Santa Barbara County, recognized as being pro-active in the development of a Phase II urban storm water runoff permit, has been invited to participate in the Executive Committee for the SWQTF. Information acquired during SWQTF meetings have been exchanged with Phase II municipalities in Santa Barbara County.

In addition, Project NPDES staff members have participated with the Southern California Coastal Water Research Project (SCCWRP) in two studies of ocean water quality in the surfzone from Point Conception to south of the Mexican Border. Recently the report on the water quality from the August 1998 sampling events has been released. This is a cooperative effort (22 private and government agencies participated in this study) and the largest examination of the Southern California beach water quality to date. Exchange of technical information, intercalibration of laboratory techniques and standardization of sampling protocol were established in order to effectively assess water quality data across regional boundaries. This information will be a baseline of water quality in the receiving waters and provides direction for monitoring of the BMP effectiveness under NPDES requirements.

Since the community has expectations for improved surface water quality and decreased health risk at our local beaches beyond the scope and schedule of NPDES requirements, proposed solution implementation has been incorporated into development of the NPDES permit discussed in this report. In addition, to better define the sources and interaction of bacterial contamination with the creek and beach areas, two additional studies are in progress and are outlined below.

#### Plume (lateral) Migration of Bacterial Contamination at Arroyo Burro Beach

This study has been a cooperative effort between the City of Santa Barbara and the County of Santa Barbara to determine the extent to which bacterial contamination leaving the Arroyo Burro Creek mouth migrates along the coastline in the ocean surf zone. The goal of the study is to better delineate this area during low flow conditions (current winter creek flow conditions are similar to summer creek flow conditions), in order to better define an appropriate area of closure during periods when standards are exceeded. A secondary goal would be to develop a protocol, if feasible, for determination of this closure zone at other beach areas. Current Santa Barbara County Public Health Department policies are based upon epidemiological studies performed in different geographical and hydrological areas. The City and County are interested in determining appropriate closure zones that still provide safety in terms of prevention of exposure to significant public health risks associated with these elevated levels of bacterial contamination.

A contract amendment to the contract with URS Greiner Woodward Clyde (a professional consultant) to incorporate the work-plan for this study was approved by your Board on February 16, 1999. Four sampling events have transpired, and staff are working with the consultant to analyze the data. Additional sampling events may be performed, as creek flow has been sporadic during the first two sampling events. A final report will be prepared and presented to your Board within the next two months.

#### Lower Rincon Watershed Study: Determination of possible sources of coliform bacteria using enhanced DNA analysis

This study is a cooperative effort between the County of Santa Barbara and Heal the Ocean (a community organization dedicated to improving water quality conditions in the ocean environment). DNA analysis will be used to determine sources of bacteria in the lower Rincon Creek watershed. Early in the process of planning the sampling and testing protocols for Project Clean Water, a decision, based upon goals of the project, resources availability, etc. was made to delay the usage of DNA methodologies until additional information regarding appropriate locations to be tested could be determined. We now have that information and recommend proceeding.

In October, 1998, Project Clean Water staff provided assistance to Heal the Ocean to collect water samples that have been submitted to Dr. Brunk, at the University of California, Los Angeles. Dr. Brunk's analysis procedures to determine if the water samples contain waste from human are still experimental. Difficulties have been encountered with previously submitted water samples (collected for Rincon Creek, Arroyo Burro Creek, etc.) and it is unknown when results will be ready or the value of these results. Therefore, an alternative testing procedure is proposed.

Dr. Monsour Samadpour, a professor with the University of Washington, has participated in a number of successful water quality studies in the San Diego area using a DNA analysis, which identifies the origin of fecal contamination. E. coli bacteria from different sources (e.g. human, bird, mammals, etc.) have DNA characteristics that are species specific. Dr. Samadpour's technique involves the collection of "background" fecal samples of species indigenous to the area, as a basis for comparison. In the lower Rincon Creek Watershed, this includes but is not limited to several bird species, humans, dogs, cats, horses, cattle, raccoons, possums, etc. These specimens would be transported to Dr. Samadpour's laboratory in the State of Washington. Additionally, water samples would be collected in very specific locations within the watershed over a short period of time. A number of samples would be required at each sample location.

Water samples must be processed and stabilized to preserve E. coli bacteria prior to transportation to Dr. Samadpour's laboratory. The most cost-effective manner is to provide a minor addition of equipment for the Santa Barbara County Public Health Laboratory. Water samples would then be initially processed here. After shipping to the University of Washington, Dr. Samadpour's technique will determine the species of origin of the fecal contamination in the water samples and the relative proportion of each species contribution (qualitative and quantitative data). If successful, this study will provide specific data that can be used to develop focused solutions to this section of the watershed and may serve as a model for studies in other watersheds.

This process is very complex. There are a number of variables that can introduce problems into the study. Project Clean Water staff and the Technical Advisory Committee developed a work plan that has been reviewed and accepted by Dr. Samadpour and all other interested parties. The proposed workplan for this study is

attached as Appendix D. and with approval from the Board of Supervisors, contract negotiations will be finalized and the study will begin within the next few weeks. Results of this study should be available within 3-4 months.

### **Implementation of Best Management Practices and Stakeholder Solutions**

There is considerable overlap between the recommended Stakeholder solutions and the BMPs suggested for the County's NPDES permit. (We expect some BMPs will be required by the final regulations).

Over the past several years, implementation of Phase I permits by larger southern California communities has resulted in published guidelines for the development and adoption of BMPs. Thus the scope of potential BMPs is well defined. The discussion below outlines the various BMPs and identifies those that are also suggested by the stakeholder working groups. As shown in Appendix G, the suggested BMPs may be organized into several basic types:

Public outreach and involvement (Stakeholder Solution);

Municipal operations and control (Stakeholder Solution);

New development and redevelopment design and monitoring (Stakeholder Solution);

Commercial facilities controls (Stakeholder Solution);

Industrial facilities controls;

Illicit connections and discharges (Stakeholder Solution);

Watershed restoration (Stakeholder Solution);

Best management practices are generally regarded to be either source reduction (pollution prevention) or treatment (of water to remove contaminants). Most solutions proposed in the stakeholder reports are source reduction. Staff strongly supports this emphasis since source reduction measures are generally less expensive and more effective than treatment BMPs, however both would reduce levels of pollution in our creeks and in the ocean.

#### **Public Outreach and Involvement (Stakeholder Solution)**

Public outreach is a required element of any storm-water quality program. These efforts include:

Education of the community as to the problem;

Involvement of the community in developing and implementing acceptable solutions;

Support of the community in ongoing abatement efforts;

Acceptance of program success criteria.

#### **Municipal Operations and Control (Stakeholder Solution)**

The local government agencies, as part of the NPDES permit, must monitor their own operations and assure that they result in no storm-water contamination. These efforts to protect storm-water quality include:

Review of vehicle maintenance and improvements if necessary;

Review of hazardous materials handling, storage, and control practices;

Reporting pollution control compliance as part of the permit reporting requirements.

#### Development and Redevelopment Design and Monitoring (Stakeholder Solution)

New and extensively modified development projects must meet minimal runoff quality control standards. These measures apply during both site development (e.g. construction phase erosion control) and operations phase (e.g. incorporation of retention ponds or catchment basins to attenuate pollution in parking lot runoff).

Currently both the City and the County require such measures on a case by case basis. The BMP requires a more systematic approach and may result in the adoption of such measures as ordinance.

#### Commercial Facilities Controls (Stakeholder Solution)

A number of commercial facilities have the potential to inadvertently cause degradation of storm water. Trash receptacles, accumulations of waste or surplus materials and minor spills may all degrade storm-water running off a commercial site. Source control BMPs have been developed for most major classes of commercial operations. For example, those relating to vehicle maintenance (automotive repair facilities) are identical to those that are required of public agencies.

#### Industrial Facilities Controls

Under Phase I permits, most industrial operations were required to acquire a stormwater runoff permit from the appropriate Regional Water Control Board and implement a Storm water Runoff Plan. Evaluation and ongoing monitoring of these plans will be necessary to prevent degradation of storm water runoff. The responsibility for the monitoring and evaluation may remain with the RWQCB and require no local agency action under Phase II regulations.

#### Illicit Connections and Discharges (Stakeholder Solution)

Cross connections between sewer lines and storm drains is illegal; their elimination is a mandatory BMP. Although the inspection of systems for these illegal connections is expensive, it is a part of each sewer system operator's program. With appropriate support, the local sewer system operators may increase the level of their inspection programs.

#### Watershed Restoration (Stakeholder Solution)

Establishing the broader use of biological systems, (restored, "engineered" into new projects or incorporated into existing landscaping where feasible), will help reduce water borne pollutants that enter stream courses. A systematic evaluation of potential sites is needed to maximize the effectiveness of this approach. While most watershed and wetland restoration projects will have water quality benefits, many will have other benefits as well.

#### **IV NEXT PHASES OF WATER QUALITY WORK**

The County and City must meet NPDES mandates by applying for a permit and developing and implementing best management practices for source reduction and pollution reduction. In addition, the community has clearly indicated its expectations for pollution reduction through the Project Clean Water Stakeholders Group. Thus the community appears ready and willing to support a broad water quality improvement program including:

Accelerated development of the NPDES Phase II permit (at least for the South Coast);

Implementation of the solutions identified by the Stakeholder working groups;

Expanded water quality testing in other urbanized areas of the south coast;

Evaluation of BMPs for potential implementation in early phases of the NPDES permit.

The level of effort needed to implement this long-term program is described below. The description is based on using the existing PCW structure and key team members to provide continuity.

In order to sustain certain key program elements, support should be provided through the transition period between the end of the initial phase of PCW and the beginning of the new fiscal year (July 1, 1999), the "transition period". These key elements include 1) Arroyo Burro interpretive center, 2) pilot DNA study in the Rincon Creek area, 3) completion of the plume migration study, 4) the ongoing public information campaign, and 5) on-going follow-up to complaints and previously identified "hot spots".

#### **End of the Fiscal Year Transition Period**

Project Clean Water was given a budget through April 1999. In order to continue the excellent working relationships developed among the Stakeholders and the local agencies, we anticipate continuing the same format and structure through the "transition period" until the beginning of the new fiscal year. This would allow the initiation of work-plans by the same working groups that developed the recommendations. In addition, several key efforts in progress could continue. The level of effort necessary to provide this continuity is modest but would continue the momentum of the project to date. This ongoing work includes the following efforts.

#### **Arroyo Burro Watershed Education Center**

One of the recommendations in this report is for the County to approve a project plan to enter into a lease and/or management agreement with Community Environmental Council (CEC) for the ranger house at Arroyo Burro Beach for use as an interpretive center on watershed ecology and pollution. This center is a key component of the public education and outreach program of Project Clean Water. Should this agreement be approved the working group would continue development of a work plan, seek grant funding, continue working

with an architect in planning the remodeling of the house, and begin developing an educational program. For a detailed discussion of the project, see the Watershed Education Center Working Group Report section of the Project Clean Water Stakeholders' Report, in Appendix H.

#### Pilot DNA Study in the Rincon Creek Area

As detailed in Section III, the lower Rincon Creek watershed study using DNA analysis techniques will be a cooperative effort between the County of Santa Barbara and Heal the Ocean, a non profit group interested in eliminating sources of ocean pollution. It is estimated that the major components of the project will be completed prior to July 1, 1999 (the beginning of the next fiscal year). The estimated cost of this study is \$36,798. Heal the Ocean has committed to providing \$22,500 with the remainder to be funded by Santa Barbara County.

#### Completion of the Plume Migration Study

During the next few weeks the plume migration study performed at Hendry's Beach (Arroyo Burro) will be completed. Its results will be incorporated into the interpretation of ocean monitoring results. EHS will determine whether changes ought to be made to the beach closure and posting protocol at that time.

#### Enforcement and Public Information Campaigns

Driven by the development of the new reporting hot-line, a number of issues regarding enforcement have been identified. PCW staff and Stakeholders will facilitate resolution of these issues during the next few weeks. In addition the need for posting near certain sections of publicly accessible creeks will be evaluated.

#### Initiation of Ocean Monitoring Pursuant to AB 411

Implementation of regulations developed by the State Department of Health Services, required by AB-411, is still in draft stage. These regulations are to be finalized and promulgated as emergency regulations by May 1, 1999. The latest draft regulations (which are not anticipated to change) are more restrictive than current standards and will likely require additional posting of beaches. Draft regulations differentiate between "posting" and "closing" of beach areas. However, as contact with ocean waters that contain elevated levels of bacteria represents a health risk, this distinction may be arbitrary.

The implementation of these draft regulations will likely increase the number of beach posting, which would be similar to the current "advisory" status used by the County Environmental Health Services. The County Public Health Department is currently evaluating policy and procedure options with other Southern California counties to ensure consistency from one beach area to another.

#### **Long-term Water Quality Program Objectives**

To be successful, Project Clean Water will need to be interdisciplinary and intergovernmental. Close interagency and public coordination and cooperation has allowed significant progress in the last few months. Generally speaking the agencies involved to date will continue their involvement while some additional agencies will be added to the program as the program is expanded in to other areas of the County and to address recommended solutions.

Based on our knowledge of likely NPDES mandates and the response of the community, staff recommends the following objectives for the next year:

Meet Clean Water Act mandates to develop and implement a Phase II NPDES permit (there is community interest in accelerating the south coast portion of this permit).

Protect health of recreational public by monitoring water quality in streams and at beaches and post warnings and closures at beaches and creeks as necessary.

Explore opportunities to enhance surface water quality to address issues raised by NPDES and TMDL regulations consistent with community standards.

Continue and expand partnerships established with government agencies and community interests.

Finally, since these three projects overlap in scope we recommend they be combined as a single program: Project Clean Water.

### **Proposed Long-term Program Focus for FY 1999-2000**

In order to establish the long-term water quality program to address community concerns and NPDES regulations, a major new program would be required. Fully establishing this program would take at least one year. During the same period a number of measures to improve water quality could be implemented. In order to both establish a new program and pursue water quality improvements, staff proposes a program in the first year, which would include:

Implementation of straight-forward or immediately applicable BMPs

Storm-drain cleaning

Creek clean up

Public Information

Policy and Ordinance review

Enhanced enforcement based on expanded and targeted education

Development of BMP tracking and reporting system

Implementation of BMPs and the stakeholder recommendations and development of work plans for long-term solutions

Evaluation of the DNA pilot study for potential application elsewhere

Identification and evaluation of additional BMPs

Identification of responsible agency and evaluation of potential BMPs  
Specific evaluation of efficacy and recommendation regarding implementation  
Budgeting for long-term implementation as appropriate.  
Ongoing ocean water monitoring and additional creek testing

To accomplish the necessary tasks the program would require the following elements:

Interagency and public coordination  
Permit development  
Development of software for a BMP tracking and reporting system  
Ongoing stream/ocean monitoring  
Effective health advisories and beach (and possibly creek) closures  
Ongoing public involvement and education  
Regulation and enforcement  
Implementation of source reduction measures ("solutions" and BMPs)  
Development of a long-term funding source

Potential impacts of this new program to City of Santa Barbara departments are discussed in their staff Agenda Report, which transmits this report. The potential implications to County departments are discussed below.

To perform key planning and management functions, county staff proposes that a Project Clean Water section be established in the Public Works Department, Water Resources Division. The section would be co-located with the Water Agency and managed by the Water Agency Manager to take advantage of the familiarity of the staff with the project and to utilize overlapping areas of expertise between the existing staff and future program needs.

### **Impacts to County Departments**

In order to identify the agencies (and specific departments) involved in Project Clean Water, Appendix G was developed to indicate which County entities would be responsible for the various program elements. This approach was the basis for County budget estimates presented in the next section as well. The City program will have much in common with the County program and will maintain a high degree of cooperation. The City program and budget estimates are contained in the City Agenda Report which transmits this report to Council.

Meeting the requirements of the NPDES Phase II permit and the expectations of the community will require significant commitment of resources. In order to avoid adversely affecting other ongoing programs, additional personnel will be needed in City and County departments which are part of the program. County Departments

involved include the Public Works Department, Public Health Department, Parks Department and Planning and Development. A summary of the program responsibilities is presented below and is shown in Appendix G.

Water Resources Division (Public Works Department)

Program administration

Program development, monitoring and reporting

Interagency coordination

Public involvement and education

Review of potential riparian zone/wetland enhancement projects

Corporation yard operations

Roads Division (Public works Department)

Infrastructure related BMPs

Corporation yard operations

Environmental Health Services Division (Public Health Department)

Ocean and stream testing, monitoring and reporting

Public health postings and advisories

Implementation of appropriate business related BMPs (e.g. restaurant cleaners)

Septic system evaluation and alternatives

Assistance with overall program implementation

Parks Department

Opportunities for riparian zone and wetlands enhancement on public property

Practices relating to fertilizer and irrigation management and pet waste

Planning and Development

General Plan policy review

Ordinance revisions and standard conditions relating to construction practices

Ordinance revisions and standard conditions relating to project design

Enhanced monitoring and reporting

Review of potential riparian zone/wetland enhancement projects

Overall budget estimates provide additional resources for affected departments. This may be essential to protect ongoing programs.

## **V FISCAL ISSUES**

This section discusses project expenditures to date, anticipated through the end of the current fiscal year, and to be budgeted for the fiscal year 1999-2000, as well as potential long-term funding sources to be pursued and the limitations thereon. Although detailed projections are not presented for following years, the net agency costs are expected to be similar. However, future funding needs could change due to a variety of factors including the final Phase II NPDES permit requirements, participation by co-permittees, other water quality regulations, and public will.

### **Summary of expenditures, Project Clean Water**

On September 22, 1998 the Board of Supervisors allocated \$150,000 from contingency to fund Project Clean Water to pay for new costs. At that time, it was estimated the total cost for completion of the first phase (through March 1999) would be approximately \$300,000 not including administrative support staff (County Administrator, Auditor-Controller, County Counsel). The actual costs very closely approximate that estimate.

Of the \$150,000, approximately \$37,000 was used for temporary staff to walk and survey creeks and to take samples over the testing period, and to create a geographical information database to house the data collected. Another \$37,000 was used to purchase equipment and supplies to increase the capacity of the Public Health Lab. The remainder was used to fund external testing, public education and a variety of project supplies. The following table outlines those costs.

#### **New Costs**

Temporary Staff \$ 37,309

Services & Supplies 112,691

Total New Costs \$ 150,000

#### **Reallocated Resources**

Support Staff \$ 59,841

Public Works 63,450

Public Health 49,507  
Public Health Lab 37,660  
Total Reallocated 210,457  
Total Cost \$ 358,681

### **Transition Period (through July 1, 1999)**

It is anticipated that no major expenditures will need to be made between now and June 30, 1999. The revenues for remaining studies are provided for under the South Coast Watershed Characterization Study or the on-going Ocean Water Monitoring program.

The only exception to this, is a tentative agreement to provide funding for the initial work to be performed on the Arroyo Burro House that will be converted to a Watershed Resource Center. As is discussed in the Stakeholders' Report, Appendix H, the building will be leased to or managed by the Community Environmental Council (CEC) to establish a center for public education on local watershed resources and the impacts of pollution. However, in order to use this building as a public facility and specifically for this purpose it will require substantial remodeling. A tentative agreement has been reached that the County would provide CEC \$15,000 for the installation of handicap access at the signing of the lease/management agreement.

### **Resource Needs for Fiscal Year 1999-2000**

This section outlines the anticipated resources required for County Departments for fiscal year 1999-2000. The proposed budget for the City of Santa Barbara is discussed in the Agenda Report for their hearing of April 27, 1999.

The estimate is based on the program outlined in sections III and IV and shown in Appendix G. It includes expanded characterization of south coast areas (such as Goleta and Montecito) which were not initially included in Project Clean Water. Other areas will be incorporated into the program as NPDES Phase II mandates become more clear and as water quality problems and community interest in these areas warrants.

Seven County Departments (including 10 Divisions) are expected to play significant roles in the long-term water quality program, Appendix G. Section III summarizes anticipated County resources required to implement this program without reducing service levels in on-going programs. (A detailed breakdown of Project Clean Water costs is shown in Appendix F.)

The primary focus during the next year will be on development of implementation plans for the different source control programs. Principal costs of the new program are for program development and identification of long-term funding sources (\$150,000), expanded water sampling and analysis (\$250,000), implementing source control BMPs (\$230,000) and evaluation and development of "long-term solution" BMPs (\$250,000). The total program cost for fiscal year 1999-2000 is estimated to be approximately \$880,000, detailed as follows:

Program Staff \$ 405,000

Best Management Practices Development 140,000

Expanded Creek Monitoring 182,500

Public Education 110,000

Equipment 25,800

Operating Expenses 16,400

Total \$ 879,700

Appropriations will be budgeted in the Water Resources Division of Public Works and Environmental Health Services, as well as other participating departments, with the non-departmental budget as the corresponding funding source. The full appropriation will initially be made to the non-departmental budget, which will be used to reimburse the other departments by the County Administrator. Project Clean Water staff will coordinate with participating Departments and the County Administrator to develop final budget expansion requests based on the Board's action. Thus the Board is asked to approve the Project Clean Water program for fiscal year 1999-2000 in concept, and to direct staff to prepare appropriate budget expansion requests for consideration as part of the normal County budget adoption process.

Funding sources that are available for the 1999-2000 fiscal year are minimal and include some SB90 funding for mandated ocean water testing and short-term grants that have been applied for. As is discussed below, Proposition 218 drastically limits how governments can raise money, making it extremely difficult to do so quickly. Most viable revenue sources would not be available for the next fiscal year. We are, therefore, recommending that the Board allocate General Fund moneys to fund the project for the fiscal year 1999-2000.

### **Long-Term Funding**

It is anticipated that Project Clean Water will continue for a minimum of eight years (full NPDES program implementation deadline is 2008), but will likely become a permanent program. It is, therefore, necessary to find long-term sources of funding. We have identified various possible funding sources including taxes, assessments, fees, grants, debt, and others, and have made a preliminary evaluation of those sources as they pertain to this project.

In 1996, Proposition 218 was passed which classified all charges that can be imposed on the citizens into taxes, assessments, and fees, and specified how each type can be used and the requirements to impose them. Proposition 218 applies to many of the funding options we have considered, and in many cases presents a major obstacle to using the various funding mechanisms. The effects of Proposition 218 are discussed in the sections below as they apply to each type of funding source.

### **Taxes**

Taxes are the most flexible tool for raising revenue, in terms of its use. A tax is a charge on an individual or business that pays for government services or facilities that benefit the public broadly. There need not be any direct relationship between how much tax a person pays and how much service he or she receives from government. A tax is called a "general" tax if its revenue can be used for any governmental purpose. Examples of general taxes would include sales tax and a local transient occupancy tax ("bed tax"), both of which fund general government activities. A tax is called a "special" tax, however, if its revenues are required to be used for specific

purposes even if its funds are placed in the general fund. An example of a local special tax would be Measure D taxes.

General taxes have the advantage of the most flexibility, but at the same time the most competition for their use. However, under Proposition 218, all general taxes must now be passed by a simple majority of the voters in the community or the affected area. Such elections must also be consolidated with a regularly scheduled election for members of the local governing body.

Special taxes have the advantage of being reserved for specific purposes once they are received. However, special taxes must be approved by a two-thirds majority vote of the community or the affected area (this is not a new requirement under Proposition 218, but was previously in effect).

The greatest advantage of either general or special taxes, with respect to the funding needs of Project Clean Water, is that the funds may be used for general benefit purposes. Unlike assessments and fees, taxes do not require that a special benefit or service be provided to a particular property in proportion to the amount paid. Thus, taxes are very flexible in terms of the types of activities that will be included, such as public education.

A new tax could be imposed county-wide or within a newly formed County Service Area. Based on our preliminary review, the use of a new County Service Area appears to be the most appropriate way to implement a new tax. This is because, initially, the primary areas of focus for Project Clean Water will be on urbanized areas on the South Coast of Santa Barbara County. Later, urbanized areas and agricultural areas of the North County will be added, but service levels will vary based on program need.

Local taxes could be created or added to existing taxes, such as utility taxes, business licenses, sales tax, transient occupancy tax, or DMV charges. This could be cumbersome, however, and there is little nexus between those taxing mechanisms and surface water quality.

Although Measure D moneys from the Roads fund are a possible source for roads related projects, the Roads fund currently has a backlog of capital improvements of approximately \$40 million dollars, and therefore will not be able to provide any significant funding for Project Clean Water. However, future Roads projects should consider including components that would help decrease the impact of roads to surface water pollution.

## Benefit Assessments

An assessment is a charge levied on property to pay for a public service or improvement that benefits the property. They are different from the regular 1% property tax and debt overrides in that the assessments are not based on the value of the property, but rather on the benefit provided. Typical assessments include those for flood control or street lighting.

Proposition 218 provides that only "special benefits" are assessable and that "special benefits" must be separate from any "general benefit" conferred on a parcel. A special benefit is defined as a particular benefit to land or buildings, and does not include a general benefit to the public or a general increase in property value. Local governments must estimate the amount of the special benefit, and must set the individual assessment charges so that no property owner pays more than his or her proportional share of the total cost. There are no exceptions to these requirements. Proposition 218 requires an election for any new assessments, which must be passed by a majority of voters weighted in proportion to assessment liability.

Special assessments to fund Project Clean Water could take the form of a new storm water utility district, or additional or new assessments by existing districts. We reviewed the following options:

New Storm Water Utility District – New Assessment

Flood Control – New Assessment

Flood Control – Increase Assessment

Water Agency – New Assessment

Water Agency – Increase Assessment

The formation of a new Storm Water Utility District would require approval and action by the Local Agency Formation Commission. Use of the existing districts would require legislative action in order to add surface water quality responsibilities to their powers. In either case, a mail ballot election would be required pursuant to Proposition 218, and would have to be passed by a weighted majority of the affected property owners.

The advantages of assessments include the ability to target specific geographical areas that would be affected and even to specify zones of benefit, which could receive different levels of service. They are also a convenient financing mechanism from an administrative perspective. However, benefit assessments are of limited applicability since they must be used to provide direct special benefits to each parcel of property roughly in proportion to the amount of the assessment. Additionally, if the delivery of a special benefit to the properties is not clear, the assessment could be subject to court challenges. Since, many of the best management practice to be implemented under Project Clean Water are of a general nature, such as public education, special benefit assessments would be limited to specific projects that directly benefit real property and would, thus, appear to be a less effective mechanism for long-term funding.

## Fees

A fee is a charge imposed on an individual or business for a service. Common fees include park fees and developer fees. Proposition 218 defines "property-related fees" as fees imposed "as an incident of property ownership." It appears that there is no consensus on all of the fees that meet this definition. Three types of property-related fees, however, are specifically defined as property related fees, but are exempted from the election requirements of proposition 218: Water, Sewer and Refuse Collection. All other property-related fees require passage by a vote. Local governments may choose between an election of the property owners or the electorate in the affected area. In order to pass, a simple majority of property owners or a two-thirds majority of the electorate, weighted in proportion to fee liability, must be attained.

There is contention over whether storm water utility fees should also be exempted from the election or whether they are included under the definition of sewer. Several cities in California have used sewer fees to raise money for this purpose. These issues are fully discussed in the Storm Water Utility Fee Analysis for the City of Santa Barbara, available from the County Water Agency or the City Public Works Department.

Since the County does not provide any of these services in most of the urbanized areas, it would be difficult to justify adding a storm-sewer fee under the exemption. However, this funding source could be very feasible for cities or sanitary districts that choose to impose additional fees for projects that might be applicable for those districts.

Non-property related fees, such as permitting fees, mitigation fees, park fees, or others are not limited by Proposition 218 and could be used where appropriate. However, these fees would only be sufficient to cover specific projects or programs and would not provide a sufficient long-term funding source.

## Optional Tax Bill Contribution

One alternative is the creation of a voluntary contribution, which could be included on property tax bills, or other bills. This would be similar to the voluntary contributions on state income tax returns. While this option could have merit it has not been investigated.

## SB90

SB 90 is a current source of funding. However, this source is limited to mandated ocean water monitoring at beaches with significant public use, and are thus limited to that which we already receive. The mandated ocean water monitoring program is not included in Project Clean Water, but is a related program under the Public Health Department. As new legislation is enacted or as regulations change that would expand the available funding, we will apply for that funding.

## Contributions from Co-permittees

Although the County and cities have been working cooperatively, an NPDES permit structure and co-permittee contributions have not been determined. While co-permittee contributions will, hopefully, provide an offset to County costs, it is uncertain to what extent. Furthermore, the sharing of costs is frequently one-time in nature, in that it pertains to particular cooperative projects, and it simply shifts the burden to other jurisdictions. Contributions will be sought as appropriate.

## New Debt

New debt is generally considered an option for funding specific construction or rehabilitation projects, and is one-time in nature. Because of the relatively small scale of the individual projects that are anticipated, the use of debt does not appear to be cost effective except where debt proceeds are available for general capital improvements necessary to implement BMPs, which require new or substantially modified facilities.

Debt financing also requires an election to the extent that new taxes or assessments are required for repayment of the debt.

## Grants

Numerous grants are available for any variety of projects. Generally, they are available for specific projects and are one-time funding for limited purposes. Sources of grants include federal, state, and local governments and agencies, corporations, non-profits, and private foundations, and can range from a few thousand dollars to hundreds of thousands.

Project Clean Water will establish a "grant writing team". This team will include County staff, City staff and members of community based organizations who are familiar with developing grant proposals. The purpose of this team will be to coordinate the process of seeking grant funding in order to:

Discover more grant funding through shared knowledge;

Strategically coordinate grants with projects so as to optimize overall grant funding;

Form public/private partnerships in order to improve chances of obtaining grant funding;

Develop a grant database to track grant application timing and purpose to eliminate missed opportunities and for future planning.

The above funding alternatives have distinct advantages and disadvantages. While some appear to be more appropriate for the combination of activities proposed under Project Clean Water, there are many possibilities and can be used as complimentary funding sources. Project Clean water staff recommend that the County Administrator further analyze the funding alternatives in order to determine the feasibility of each in light of the County's overall funding strategy.

## **VI RECOMMENDATIONS**

While a great deal has been learned over the last few months, much of the information gathered in the process, so far, is preliminary or inconclusive. Our recommendations, therefore, are focused on creating a program structure that will allow us to continue gathering data on specific causes of pollution, to plan for and begin implementing best management practices, to implement public outreach programs, and to implement some specific, short-term solutions. With this in mind, based on the information we have gathered, the staff of Project Clean Water recommend the following actions for the Board of Supervisors:

Conceptually approve Arroyo Burro Watershed Center project, whereby the County will contract with the Community Environmental Council (CEC) to lease and/or manage and operate the ranger residence located at Arroyo Burro Beach County Park as a community educational "watershed resource center", and direct Project Clean Water staff and Parks Department to return to the Board on May 11, 1999 with a lease and/or management agreement of mutually acceptable terms. (This of course does not preclude obtaining requisite permits from the City of Santa Barbara);

Direct Project Clean Water staff and the County Administrator to prepare a budget expansion request for the Board of Supervisors' consideration during 1999-2000 budget hearings;

Direct the Personnel Department to work with affected departments to develop job classifications and specifications as necessary;

Direct the County Administrator to study and evaluate the feasibility of creating a new County Service Area and implementing a special tax within that area to fund Project Clean Water for fiscal years after 1999-2000;

Approve the Lower Rincon Creek Watershed Study, a pilot DNA testing project, and authorize Project Clean Water staff to negotiate a contract for services from Dr. Mansour Samadpour to provide DNA testing related to the Lower Rincon Creek Watershed Study; Combine the projects previously referred to as the South Coast Watershed Characterization Study, Project Clean Water, and Project NPDES into one project to be known as Project Clean Water, and approve the structure and scope for the development and implementation of a long-term program as described herein.

## **APPENDIX A**

### PROJECT CLEAN WATER STAKEHOLDERS

Allen, Patrick Surfriders Foundation

Allison, Tim Citizens Planning Association

Allred, Ryan Westmont College

Almy, Robert S.B. County Water Agency

Alvarez, Dr. Frank S.B. County Public Health Department

Arenz, Robert The Conception Coast Project

Arviso, Debra The Fielding Insitiute

Aston, Darcy S.B. County Water Agency

Ayres, Jennifer Community Environmental Council

Baccaglio, Allyson Westmont College

Bailard, Jim Beacon

Banales, Frank Zona Seca

Becchio, Frank

Bjork, Rebecca City of Santa Barbara

Blagborne, Isabel Project Recovery

Blois, Jean Goleta Chamber of Commerce

Goleta Water District

Bradley, Richard City of Ventura Public Works

Brechwald, Jayne S.B. County Public Health Department

Buttny, John 3rd Dist. Supervisor's Office

Caldwell, Andy COLAB

Cardenas, Miguel Lideres Latinos

Carlson, Jill City of Santa Barbara

Carrillo, Joe Santa Barbara SEA

Chirman, Darlene

Clark, Jon Wendy P. McCaw Foundation

Cohn, Barry US Parks Service, Los Padres National Forest

Couch, Rachel 2nd District Supervisor's Assistant

Crawford, Nancy San Lucas Ranch

Czuleger, Jerry S.B. County Counsel

DeFlanders, Charles SBCC Transfer Center

Duffy, Patricia

Dunn, Steve Commercial Fishermen of Santa Barbara

Eustace, Claire UCSB Bren School

Fangman, Sarah Channel Islands National Marine Sanctuary

Fayram, Tom S.B. County Public Works

Feeney, Karen Community Environmental Council

Ferguson, Bill City of Santa Barbara

Flores, Grace Casa de la Raza

Fortson, David Citizens' Planning Association

Fusaro, Craig Cal Trout, Inc

Gallegher, Robert Ventura County Environmental Health Services

Garcia, Michael J. S.B. County Grand Jury

Gira, Dan S.B. County Planning & Development

Gray, John U.R.S. Greiner, Woodward-Clyde, Inc.

Grider, Neil Santa Barbara SEA

Guzzardi, Joe Samarkand District Improvement Assoc.

Halsted, Steve Rincon Point Homeowners' Assn.

Hamilton, Charles Carpinteria Valley Water District

Hamm, Keith Santa Barbara Independent

Hansen, Bob Carpinteria Creeks Committee

Harris, Eddie Urban Creeks Council

Hart, Gregg Santa Barbara City Council

Hartley, Don SBCC Environmental Horticulture

Hartley, Mike S.B. County Public Health Department  
Hastings, Sean Channel Islands National Marine Sanctuary  
Hathaway, Rhonda  
Hauge, Richard Ventura County Ocean Water Quality  
Monitoring Program  
Hauser, Hillary Heal the Ocean  
Hazard, Bob Gaviota Coast Conservancy  
Higgins, Mike Regional Water Quality Control Board  
Hill, Ryan S.B. County Fire Department  
Holden, Dr. Patricia UCSB Bren School of  
Environmental Science and Management  
Hunt, Richard  
Islander, Ethan The Conception Coast Project  
Jackson, Emily Congresswoman Lois Capps' Office  
Jenkin, Paul Ventura County Surfrider Foundation  
Jensen, Wayne UCCE Technical Services Building  
Jostes, John  
Kelly, Pat City of Santa Barbara  
Kent, Glen Ventura County Surfriders Foundation  
Kinninger, Jim Arroyo Quemada  
Langle, Peggy S.B. County Environmental Health Services  
Langsdorf, Stephanie Urban Creeks Council  
Laurent, Bud Community Environmental Council  
Lebens, Tom Goleta Water District  
Lee, Mark Peak-Las Positas Partners  
Lysek, Trevor S.B. County Auditor-Controller  
MacIntosh, Steve S.B. County Solid Waste & Utilities Division  
Mack, Steve City of Santa Barbara

Main, Sharyn Wendy P. McCaw Foundation  
Malinoff, Fran S.B. County Public Health Department  
Manning, Jennifer  
Marzolla, Michael UCSB Cooperative Extension 4-H  
McCammon, Cathy Citizens Planning Association  
McGinnis, Michael UCSB Marine Science  
Merrifield, Rick S.B. County Environmental Health Dept.  
Michalenko, Wanda Urban Creeks Council  
Moldaver, Lee Santa Barbara Audubon Society  
Coastal Resource Center  
Motta, Wendy Sen. O'Connell's Office  
Naumhoff, Phil Ventura Co.Surfriders Foundation  
Neustadt, Landon Santa Barbara SEA  
Newman, Jenny UCSB Bren School  
Nielsen, Gary L.  
Nisbet, Bob City of Carpinteria  
Olsen, Dave S.B. County Planning & Developmt.  
Ornelas, Carlos  
Paiz, Rudy  
Philip, Hall  
Price, Chris Comprehensive Planning  
Quintos, Matt MacFarlane, Faletti & Co.  
Raas, Amanda S.B. County Environmental Health Dept.  
Rasmussen, Laura Allied Neighborhoods Association  
Reid, Dan S.B. County Environmental Health Dept.  
Richmond, Jessica Westmont College  
Robinson, John Heal the Ocean  
Rodrigues, Everardo Lideres Latinos

Rogers, Carly  
Romero, Manuel City of Santa Barbara  
Savin, Bruce Council on Alcohol & Drug Abuse  
Project Recovery  
Schoof, John City of Santa Barbara  
Schulman, Dr. Elliot S.B. County Public Health Department  
Schuyler, Jean  
Shewczyk, Pat League of Women Voters  
Simms, Lloyd Goleta Sanitary District  
Smith, Joel C.U.R.E.  
Songer, Betty Carpinteria Creeks Committee  
Streeter, Richard S.B. County Grand Jury  
Stuckey, Karl  
Sumner, Rod  
Timberlake, Jayme  
Torell, John S.B. County Auditor-Controller  
Trautwein, Brian Environmental Defense Center  
Turner, Julie  
Tyzzer, Rob  
Umenhofer, Tom SBCTA

## **APPENDIX B**

### **SUMMARY RESULTS OF CREEK SURVEYS AND TESTING**

Creek walks were begun in October; bacterial sampling and initial follow-ups were begun in mid-October and were completed in the first week of December. Field observations and laboratory results are summarized below and in Appendix B. Data have been provided to the Stakeholders group and are available through the Water Agency.

Rincon Creek

The Rincon Creek watershed contains three general land uses: chaparral wildland in the uppermost portions, rural agricultural uses in the middle and lower portions, and a community of 75 homes surrounding the creek mouth. The creek walks suggest that the creek is generally undisturbed and its riparian zone is in good condition. Below Highway 101 the area around the creek is developed by single family homes. A lagoon occurs at the mouth of the creek. Appendix B of the February 2, 1999 report to the Board and Council contains a more complete description of creek and sampling results.

Sampling results indicate moderate total coliform, fecal coliform and enterococcus bacteria levels through out the watershed, with very high levels from a tributary in the middle section of the watershed. All measured bacteria levels in the main creek decline below this tributary but increase in the lagoon. Sample results from the SCWCS suggest that bacteria levels increase several-fold as a result of storm runoff (Appendix C). Staff suspects both mobilization of animal waste and suspension of sediment as the cause of this post-rainfall increase.

Sampling by Ventura County in October did not reveal high levels of bacteria along the beach or in the "cove area" at low tide, however results from sampling for "MBAS" (methylene blue active substances, which include detergents) in the same locations may suggest the presence of septic system leachate. As discussed in a later section, staff and Stakeholders are developing a work plan for a cooperative DNA testing study to continue evaluating the lower watershed.

As a result of our work we conclude:

Numerous sources of bacteria occur throughout the watershed;

No direct link between septic systems and beach closures has yet been established;

Efforts are ongoing to reduce sources.

### Carpinteria Creek

Land uses in the Carpinteria Creek watershed are varied, but generally become more intense in the lower areas. Chaparral wildland exists in the uppermost sections while orchards and rural residential predominate in the middle section. In the lower section (in the valley) agriculture gives way to suburban uses below Highway 192. South of Highway 101 the area is urbanized. In upper and middle portions of the watershed the creek is steep and rocky with a more or less intact riparian corridor. In the middle and lower sections of the creek the riparian corridor is more disturbed and invaded by non-native plants. Invasive vegetation such as *Arrundo donax* exist in the lowermost sections. A lagoon occurs at the mouth of the creek. Appendix B of the February 2, 1999 report to the Board and Council contains a more complete description of creek and sampling results.

Sampling results indicate low to moderate bacteria levels in the upper and middle sections of the creeks. All three types of bacteria show levels that become somewhat higher in the urbanized sections and are high in the creek-mouth lagoon. Water entering the creek from the storm drain system in the City of Carpinteria carries high levels of bacteria. Results from the SCWCS stormwater sampling show levels of all three types of bacteria tested several times higher than under low flow conditions (Appendix C).

As a result of our work we conclude:

Much of the upper watershed has acceptable levels of bacteria;

Storm drains and lagoon fauna such as birds are probable sources of high levels in the lower watershed;

The City and local groups have implemented creek cleanup efforts.

### Sycamore Creek

Portions of the upper Sycamore Creek drainage are wildland, but a relatively high proportion of suburban development and orchards occur on moderate slopes as well. The middle portion of the stream flows through Sycamore Canyon that is narrow and has steep slopes with scattered single family homes. The lower portion of the watershed extends through the urbanized area of the City of Santa Barbara. No channelized (concrete lined) section occurs. Appendix B of the February 2, 1999 report to the Board and Council contains a more complete description of creek and sampling results.

Results from initial sampling indicate that there may be isolated sources of bacteria (in addition to expected "background") in the upper watershed. Disposal of small volumes of greenwaste and pet waste were documented in and adjacent to the stream during the creek-walks. Staff is attempting to isolate suspected illegal grey-water systems in the area.

All three types of bacteria tested show high levels in the lower watershed and on occasion vary by an order of magnitude over the course of several days. Intermittent sources such as disposal of human or pet waste is suspected as the cause, and the relatively stagnant conditions in the lowermost reach are thought to maintain the high levels.

As a result of our work we conclude:

Numerous sources of bacteria occur throughout the watershed;

Efforts are ongoing to reduce sources;

Numerous diffuse sources and lagoon fauna such as birds are probable sources of high levels in the lower watershed.

### Mission Creek

Mission Creek watershed contains four basic land uses. Upstream of the Botanical Garden, the creek is in a natural condition with a healthy riparian corridor. From the Botanical Garden to Foothill Road, low-density residential housing, some on septic systems, occurs along the banks of the creek. There are some channel improvements in this area but the riparian corridor is mostly intact with relatively high biological functions and values. Rattlesnake Creek is the main tributary to Mission Creek and flows into it in this area. Appendix B of the February 2, 1999 report to the Board and Council contains a more complete description of creek and sampling results.

Beginning at Rocky Nook Park and continuing downstream to Oak Park, land use adjacent to the creek consists of moderate density residential interspersed with commercial uses such as medical offices. Bank vegetation is dominated by landscaping with some native plants. Bridges at State Street and De La Vina have provided creek encampments in the past.

Beginning at Oak Park and continuing to the ocean, high-density housing occurs along the banks of the creek. Between Oak park and the Old Misson Channel outlet, some sections of the creek are channelized (have

concrete channel walls and bottom) and the creek is usually dry in the summer and fall. (This section was dry during the PCW sampling period.) Creekside vegetation is limited to sections which have not been concrete lined. Below the Old Mission Channel, several sections of the creek have been channelized with concrete walls and bottoms. The entire reach is highly degraded with limited biological functions and values. Several large storm-drains, the drainage from Old Mission Creek, and possibly some ground water discharge into this section and provide flow, even in the summer and fall. Several areas of trash accumulation occur in this area and the area appears to be heavily used by humans.

Preliminary sampling results indicate that bacterial levels in the upper watershed are low and increase in the vicinity of Rocky Nook Park. From above upper State Street to the start of the concrete channelized section near Los Olivos Street there was no flow during the creek walks and during initial sampling. High bacterial levels in the lowermost section are due primarily to flow from storm drains and the Old Mission Creek channel area. Creek encampments have been documented along portions of the channelized section and in the Old Mission Creek channel area. Flow from these sources appears responsible for the uniformly high levels of all three tested types of bacteria in the lower-most section.

Staff of the City and County are attempting to identify and eliminate the sources of bacteria laden water entering the Old Mission Creek channel and flowing from one particular storm drain.

As a result of our work we conclude:

No direct link between septic systems and beach closures has yet been established;

Much of the uppermost watershed has acceptable levels of bacteria;

Storm drains, creek encampments, and lagoon fauna such as birds are probable sources of high levels in the lower watershed;

The City and local groups have implemented creek cleanup efforts;

Creek and storm-drain cleanup to remove obvious sources of contamination should continue.

### Arroyo Burro Creek

Arroyo Burro Creek is a large and complex watershed. Above highway 101 Arroyo Burro Creek has two major tributaries, San Roque and Barger Canyon Creeks. Arroyo Burro and Barger Canyon have moderate to high-density suburban land-use between State Street and Foothill Road. Above Foothill Road the bottom of each stream is relatively undisturbed; development is more sparse and occurs on hill-slopes and ridges above. In the San Roque Creek suburban development predominates, a substantial amount of the stream course has been confined to an underground culvert with storm-drain inlet. Between State Street and Foothill Road creek-side vegetation consists primarily of backyard landscaping with some native plants present. Many small drains discharge into this section but there were few obvious sources of pollution. In the vicinity of State Street downstream to Highway 101, commercial uses occur next to the creeks with historic creek encampments in the vicinity of Hitchcock Road.

From Highway 101 to the ocean, moderate density housing occurs along the creek. Both sides of the creek have some large areas of open space; one of these, "Las Positas Friendship Park", is a former landfill. Some landslides encroach into the creek in the Veronica Springs area. A small tributary, Las Positas Creek, flows into Arroyo Burro Creek in the vicinity of Veronica Springs Road. A municipal golf course and the Earl Warren Show Grounds

occur in the uppermost reach of Las Positas Creek upstream of Highway 101. Several reaches of the creek are relatively natural in this area with a well-developed riparian corridor. Arroyo Burro Creek discharges into the ocean at Arroyo Burro (Hendry's) Beach. The lagoon at the mouth of the creek is the largest and deepest of any included in this study. Some questions remain about the physical condition of the lagoon (particularly depth) and its hydrology (particularly stratification). Appendix B of the February 2, 1999 report to the Board and Council contains a more complete description of creek and sampling results.

Preliminary results indicate that bacterial levels are moderately high throughout the portion of watershed below foothill Road, with the exception of the area between State Street and Highway 101. Between State Street and Highway 101 levels of all three types of bacterial tested are very high. The results from samples downstream suggest that the creek attenuates these very high levels quickly during low flow conditions, but not during high flow. The test results suggest there are a number of sources of bacteria including the underground portion of San Roque Creek, runoff in the upper State Street area, creek encampments and pet waste.

As a result of our work we conclude:

numerous sources of bacteria occur throughout the watershed,

no direct link between septic systems and beach closures has yet been established,

much of the uppermost watershed has acceptable levels of bacteria,

storm drains, creek encampments, and lagoon fauna such as birds are probable sources of high levels in the lower watershed, and

the City and local groups have implemented localized creek cleanup efforts.

#### Arroyo Quemado Creek

Arroyo Quemado Creek flows through the Baron Ranch upstream of Highway 101 and through a small beachside community downstream of 101. The Baron Ranch is owned by the County of Santa Barbara and is immediately east of the County's landfill. The predominant crop on the ranch is avocados. The residence on the ranch depends on a septic system. The drainage is just east of the Pila Creek watershed, site of the Tijiguas Landfill. Appendix B of the February 2, 1999 report to the Board and Council contains a more complete description of creek and sampling results.

The beachside community consists of approximately 14 homes that are all serviced by septic systems. The creek flows through a small estuary that has a large population of birds.

As a result of our work we conclude:

The upper watershed has acceptable levels of bacteria;

Lagoon fauna, such as birds, is probable sources of high levels in the lower watershed.

#### Jalama Creek

The Bixby Ranch Company who maintains a large agricultural operation owns virtually all of the watershed. Much of the steeper portions of the watershed are relatively undisturbed chaparral and oak woodland. Some of the lower areas are in row-crops, the rest of the agricultural operation is cattle raising. The County operates Jalama Beach Park with a campground at the mouth of the creek. In the past dogs have been observed in the vicinity of the lagoon. The re-vegetation plan being implemented at the park will, among other things, preclude dogs from the area of the lagoon.

Bacterial levels measured in the creek are moderate above the park. Levels are higher in the lagoon at the mouth of the creek. Birds have been observed in the lagoon at the mouth of the creek and may be a source of bacteria in the lagoon. Staff continues to investigate potential sources in the area of the park.

## **APPENDIX C**

### **SOUTH COAST WATERSHED ALLIANCE**

#### **SUGGESTED SOLUTIONS**

##### **Short-term Solutions**

Storm drain stenciling, bilingual no dumping signs, and garbage cans at or near bridges with regular maintenance

Continuous water testing in creeks and ocean for bacteria and other pollutants

Improved multi-lingual beach and creek posting

Installation and regular maintenance of portable toilet facilities

Hot-line for reporting possible sources of water pollution, and response network including site visit.

##### **Medium and Long-term Solutions**

Review existing ordinances, codes and regulations related to water quality, and ability to enforce; develop new or revised ordinances, regulations and codes as necessary; and increase budget for enforcement, possibly including a new enforcement position.

Identify sites for wetland and riparian restoration, and funding sources for same.

Septic system mapping within targeted watersheds, dye tests, ascertain depth to groundwater and distance to wetlands and watercourses (i.e. consistency with Basin Plan:), require correction of problematic septic systems

Infrastructure cleaning (streets, parking lots, storm drains, etc.)

Develop and implement strategies to keep domestic and grazing animal feces out of watersheds and beaches.

## **APPENDIX D**

## LOWER RINCON CREEK WATERSHED MONITORING STUDY

### Work Plan

#### Introduction

Heal the Ocean (a nonprofit organization dedicated to improving ocean water quality), Santa Barbara County, Public Health Department, "Clean Up Rincon Effluents" (CURE- a nonprofit group dedicated to improving ocean water quality in the Rincon Creek area) as well as a number of other public and private organizations is interested in determining the source of bacterial contamination in the lower Rincon Creek Watershed and adjacent ocean surfzone.

The Santa Barbara County, Public Health Department has conducted monitoring of the ocean surf-zone for over two years. The data provide a strong baseline of water quality information that can serve as a yardstick for long-term analysis of trends in overall storm water quality. In addition, several exceedances of recreational water standards have been noted, posing potential public health risks to those coming in contact with these waters (e.g. surfers, swimmers, bathers, waders, etc.).

Although it has been postulated that septic systems of the residential community at Rincon Point are contributing to high bacterial levels in the lower sections of the watershed and the ocean, previous indicator testing of coliform bacteria has failed to produce a clear indication of this alleged relationship. However, a single testing event for MBAS (methylene-blue activated substances) in shallow holes dug to collect water seeping through the sands at extreme low tides, has revealed amounts suggestive of continual input. Site selection was such to rule out direct contributions from the watershed. Water samples were concurrently tested for bacterial levels. Results were negative or exhibited extremely low levels. Therefore, it appears there is a link between septic systems and the beach area, but bacterial contribution is minimal at best.

However, given the large cost of the characterization monitoring program, as well as the length of record to date (approximately 120 station-events), all associated organizations are now interested in modifying the monitoring program to focus on the characterization and solution of known water quality problems in the Rincon Creek area, rather than continuing solely with broad-scale characterization monitoring.

The associated agencies have exhibited a willingness to conduct focused monitoring in conjunction with an attempt to identify bacteria sources in the watershed. Project Clean Water, a community coordinated effort, has been identifying potential sources through physical examinations of the watershed, focused water testing at specific locations within the watershed, and focused constituent testing of ocean waters (i.e. nitrates, MBAS's). This information has been vital in better defining the problematic areas. With the goal of solving known water quality problems in mind, several representatives of the associated agencies began meeting in September 1998 to discuss the direction of the testing for the Rincon Creek Watershed.

It is with this perspective that the associated agencies hereby propose a detailed study focused on identifying the sources of bacteriological contamination in the lower Rincon Creek Watershed. Although the selected watershed for the study makes up the boundary between Santa Barbara County and Ventura County, the overall study is believed to be of relevance and applicability to other similar rural watersheds.

The proposed bacteria study will be jointly funded by Heal the Ocean and the County of Santa Barbara. Three sample locations have been chosen at the lower reaches of the Rincon Creek Watershed: in the surf-zone at the mouth of the creek; in the lagoon; just upstream of the lagoon.

#### Goals and Objectives of the Bacteriological Study

Long-term monitoring in Santa Barbara County and elsewhere have indicated that levels of total coliform, fecal coliform and enterococcus are elevated in runoff from urban areas. Coliform bacteria is used as an indicator of possible human health risk from water contact, and is thus used as the primary factor in determining whether beaches should be closed. In addition, studies conducted to date have focused primarily on the concentrations of coliform bacteria, rather than identifying their host organism sources. The proposed study will help fill this data gap by evaluating a watershed that has very limited land-uses in distinct geographic areas.

Rincon Creek watershed has its beginnings in the Los Padres National Forest in Santa Barbara County and Ventura County. For several miles, Rincon Creek forms the border between the two counties. The watershed encompasses about 14 miles from tributary sources to the ocean just South of the City of Carpinteria. The creek has several major tributaries including Casitas Creek. For the most part, the major land uses are agricultural with a few isolated residential areas. The beach area around Rincon Creek has shown elevated bacterial levels on a consistent basis even during periods of low flow

The Rincon Watershed was selected for the following reasons:

Watershed that has limited land uses (residential, agricultural)

Public and political will

Focused section of watershed to act as a "pilot" study

Typical lagoon impoundment that occurs in several other Santa Barbara County Watersheds

Sufficient access to stream reaches for conducting the monitoring.

#### Scope of Work for Santa Barbara, Rincon Creek Bacteria Study 1999

The Scope of Work for the bacteria study is designed to characterize the sources of coliform bacteria in discharges from dry weather flows. A map showing the stream configuration is shown in Figure 1. The lower portion of Rincon Creek Watershed forms a lagoon that is under tidal influences that creates a freshwater, brackish water and ocean water interface. The land uses of the upper sections of the watershed are predominantly natural chaparral with the middle reaches being mainly agricultural (avocado and lemon orchards) with small sections of residential. The lowest portion of the watershed, surrounding the lagoon area is predominantly residential. The sample locations are chosen to attempt to isolate the upper and middle sections of the watershed from the lower residential section. Therefore sample site RC-035 is just upstream of the lagoon and residential areas which represents everything flowing down the watershed up until that point. Sample location RC-002 is in the lower end of the lagoon and represents the mixing of salt and freshwater as well as any contributions from the lower residential area to the watershed. Sample RC-OC is chosen in the surfzone, at the mouth of the creek and represents the watershed's contribution to the oceans.

As stated above, the bacteriological study will be designed to characterize the sources of Escherichia coli (E. coli) and the presence of human pathogens in runoff from the watershed. In order to determine coliform sources, we will retain the services of Dr. Mansour Samadpour of the University of Washington. Dr. Samadpour will conduct DNA testing on fecal coliforms in water samples obtained from the watershed to determine their host organisms and therefore, sources, of the bacteria. Specifically, genetic fingerprinting of the cultures will be performed by ribosomal RNA typing using two restriction enzymes. These fingerprints will then be compared to known sources within Dr. Samadpour's E. coli DNA library, which is composed of over 24,000 previously identified DNA fingerprints representing thousands of species. Dr. Samadpour's library will be supplemented with fecal samples collected from local species.

Water samples will be collected from three discrete points in the watershed: at the surfzone at the mouth of the Rincon Creek Watershed labeled as Sampling Point RC-OC on Figure 1), in the lagoon labeled as Sampling Point RC-007; and just upstream of the lagoon labeled as Sampling Point RC - 035.

A total of 50 discrete water samples will be collected from each location in order to perform the DNA analyses. The samples will be collected from the flowing water stream, lagoon and ocean surfzone at 5-minute intervals. Five samples will be collected under baseflow (non-storm) per day at each location. Samples will be collected each day over a two-week working period (10 days), during a variety of tidal conditions. Filter membrane samples containing isolated fecal coliform colonies will be prepared by the Santa Barbara County Public Health Laboratory. The filter membranes will then be transferred to M-FC agar and incubated as previously agreed. Subsequently the plates will be shipped on ice to Dr. Samadpour's lab.

## Reporting

A comprehensive report detailing the results of the monitoring program will be prepared and submitted to the governing agencies. The report will focus on the results of the bacteriological study. This section will include a discussion of work conducted, data obtained, analysis of the results, and recommendations for future work (e.g., additional studies, best management practices to control sources, etc.).

**APPENDIX E**

Summary of results from "Feasibility Study, Short Term Temporary Treatment Alternatives"

Treatment Alternatives	Relative Capital Costs	Relative Operational Costs	Primary Advantages	Primary Disadvantages	Potential Fatal Flaw	Permitting
Diversion to sewer	Low (\$170,000)	High (\$10,000/month)	Highly effective; low capital costs; small physical plant	Reduction in freshwater flows to lagoon; impacts endangered tidewater goby and other species; difficult permitting	Impacts to the lagoon and tidewater goby may preclude permitting	USACE 404; CDP; RWQCB 401
Chlorination	Moderately High (\$250,000)	Moderate (\$5,000/month)	Effective and proven treatment	Public safety hazard with use and storage of chlorine on-site; high capital costs	Public safety hazard due to chlorine may create public opposition	USACE 404; CDP; RWQCB 401
Ultraviolet Light	Moderately High (\$225,000)	Moderate (\$5,000/month)	Effective treatment; scaleable; safe treatment	High capital costs	None	USACE 404; CDP; RWQCB 401
Ozonation	Moderately High (\$225,000)	Moderate (\$5,000/month)	Effective treatment; scaleable; safe treatment	High capital costs	None	USACE 404; CDP; RWQCB 401
UV/Ozonation	High (\$375,000)	Moderate (\$5,000/month)	Effective treatment; scaleable; safe treatment	Very high capital costs	None	USACE 404; CDP; RWQCB 401
Electro-coagulation	Very High (\$600,000)	Moderate to high (\$8,000)	Removes other pollutants	Sludge production and disposal; very high capital and operational costs	None	USACE 404; CDP; RWQCB 401
Reverse Osmosis	High (\$325,000)	Moderate to high (\$6,000)	Removes other pollutants	Very high capital costs	None	USACE 404; CDP; RWQCB 401

**APPENDIX F**

Estimated County Resource Requirements FY1999-2000

		FTE	Cost
Program Personnel			
Water Agency			
	Program Director	0.40	39,200
	CE Manager	0.70	57,850
	Program Specialist	1.00	55,000
	Engineering Tech II	1.00	50,580
	Accountant Tech Senior	0.15	8,070
	Clerk Typist III	0.15	5,100
	Administration		26,000
		3.40	241,800
Public Health Department			
	Project Manager	1.00	83,347
	Environmental Health Tech	1.00	38,155
	Laboratory Assistant	0.50	19,976
	Clerk Typist II	0.10	3,792
	Administrastion		18,000
		2.60	163,270
BMP Development and Implementation			
	Parks	0.20	10,000
	General Services	0.20	10,000
	Public Works	0.75	60,000
	Planning and Development	0.75	60,000
		1.90	140,000
Monitoring			
	Public Health Lab		30,000
	Outside Laboratory		107,500
	Sampling		10,000
	Consultant Analysis		35,000
			182,500

Public Education			
	Educational Material Printing		15,000
	Media		50,000
	Public Service Announcements		20,000
	Arroyo Burro Watershed Center		25,000
			110,000
Equipment Purchases			
	Computer Upgrades, Software & Peripherals		9,820
	Vehicles		16,000
			25,820
Operating Expenses			16,385
	<b>Total Estimated Costs</b>	<b>7.90</b>	<b>\$ 879,775</b>

## APPENDIX H

### PROJECT CLEAN WATER WORKING GROUP RECOMMENDATIONS

<b>WORKING GROUP</b>	<b>RECOMMENDATIONS</b>	<b>Resources needed</b>	<b>Lead* and Support Agencies</b>	<b>Proposed project period</b>	<b>PCW Staff recommendation</b>
<b>"No Dumping" signs &amp; trash cans</b>  <b>1A</b>	Install signs & trash cans at bridges to discourage illegal dumping	Trash cans & signs/staff time for installation: \$2,680  Service contract for trash pick-up: \$209/month for pilot project.	City of Santa Barbara*  City of Carpinteria  County	5/99 - 10/99 and ongoing if six-month assessment is successful	Implement pilot project in City; consider potential county sites for similar project
<b>Portable Toilets</b>  <b>2A</b>	Install portable toilets at 3 recommended locations for six month trial period	Installation & service for three toilets for six-month trial period = \$1,423.68	City of Santa Barbara*  PCW Staff	5/99 - 10/99 and ongoing if six-month assessment is successful	Install at 3 locations for 6 months pilot study.



<p><b>Ordinance Review</b></p> <p><b>4A</b></p>	<p>Clarify primary enforcement responsibilities / determine if additional enforcement resources are needed</p>	<p>Staff time - part of basic PCW budget</p>	<p>County Depts/Divisions :*</p> <p>Solid Waste</p> <p>Env. Health Services</p> <p>Sheriff</p> <p>Cities:</p> <p>Corresponding jurisdictions</p> <p>RWQCB</p> <p>CA Fish &amp; Game</p>	<p>1999</p>	<p>Direct Sheriff Solid Waste, EHS, Parks &amp; PD to clarify and streamline enforcement procedures. Report back in July 1999</p>
<p><b>4B</b></p>	<p>Explore options for a septic system maintenance ordinance</p>	<p>40 hours - Co. Counsel</p>	<p>County Counsel*</p> <p>County Env. Health</p> <p>Stakeholders Working Group</p>	<p>3/99 - 6/99 (report to Board with recommendations relating to septic system maintenance)</p>	<p>Complete by 7/1/99 (See Recommendation 5A)</p>
<p><b>4C</b></p>	<p>Periodically review &amp; update relevant County GP/LCP policies and City of SB LCP policies</p>	<p>P&amp;D responsibility - updates are state law mandate</p>	<p>County Planning &amp; Dev.*</p> <p>Cities Planning Dept.*</p> <p>Stakeholders Working Group</p>	<p>4/99 - ongoing annually</p>	<p>Direct P&amp;D staff to prepare summary of existing policies. Report to BOS July 1999.</p>
<p><b>4D</b></p>	<p>Consider developing a pet waste ordinance for areas of the County not covered by existing laws</p>	<p>Part of basic program budget.</p>	<p>County PCW staff</p> <p>County Parks</p>	<p>Prior to 6/00</p>	<p>Evaluate potential for water quality improvement by regulating additional County areas (outside County Recreational Areas)</p>

<p><b>Septic Systems</b></p> <p><b>5A</b></p>	<p>Adopt countywide maintenance ordinance</p>	<p>80 hrs - EHS</p> <p>Ongoing</p>	<p>County Public Health*</p> <p>County P &amp; D</p>	<p>1999</p>	<p>Explore options for a countywide ordinance by 7/1/99 for regular inspection of existing systems, inspection upon application for increased development, and regular maint./reporting for new development.</p>
<p><b>5B</b></p>	<p>Investigate &amp; implement solutions in problem areas</p>	<p>0.10 FTE project manager</p> <p>0.10 FTE geologist/eng.</p>	<p>County EHS*</p> <p>PCW staff</p>	<p>Through 99/00 FY</p>	<p>Initiate alternatives analysis in identified problem areas; best alternative should be pursued cooperatively by County/landowners and other agencies.</p>
<p><b>5C</b></p>	<p>Develop review criteria for septic systems near creeks &amp; within coastal zone</p>	<p>0.10 FTE Env. Health Spec. Senior</p> <p>0.10 FTE geologist or sanitary waste disposal eng.</p> <p>0.10 FTE EHS Supervisor</p>	<p>County EHS*</p> <p>County Flood Control</p> <p>County P&amp;D</p> <p>City of SB</p> <p>Industry</p> <p>PCW Stakeholders</p>	<p>Through 99/00 FY</p>	<p>Develop criteria that recognize increased impacts of septic failure near surface water. Identify potential problem areas and given priority for evaluation.</p>
<p><b>5D</b></p>	<p>Develop map &amp; data base of all septic systems in county</p>	<p>0.5 FTE mapping tech</p> <p>0.15 FTE planner/Env. Health specialist</p> <p>GIS System cost and/or access</p>	<p>County Water Resources*</p> <p>County EHS</p> <p>County Assessors Office</p>	<p>Through 99/00 FY</p>	<p>Direct staff to develop database including available details of placement and system design, and should be entered in GIS.</p>

<b>5E</b>	Conduct DNA/other testing to determine if septic tanks are a contributing factor	See recommendation 10E Under "Continuous Creek & Ocean Testing"	See recommendation 10E Under "Continuous Creek & Ocean Testing"	See recommendation 10E Under "Continuous Creek & Ocean Testing"	See recommendation 10E Under "Continuous Creek & Ocean Testing"
<b>Sewer Testing</b>  <b>6A</b>	Countywide assessment of potential problems	0.1 FTE - EHS	County EHS  City of SB  City of Carpinteria  Sanitary Districts  Ventura County  RWQCB	1999-00	Use staff report as starting point for evaluation of potential problem using existing staff from agencies and interested PCW participants
<b>6B</b>	Testing Ground Water	Research- 40 hours/year	County Public Works  City Public Works  Special Districts  RWQCB  Public Health	99/00 FY	Review information from RWQCB and special districts to determine if further work is necessary. Review water district information for ground water monitoring. Evaluate bacterial levels in ground water adjacent to sewer lines. Offer as graduate project for UCSB Environmental Studies.
<b>6C</b>	Smoke & dye testing of sewer lines	\$110,000 for City of SB in FY00  Sanitary districts: 100 hours per year for oversight	City Public Works*  Sanitary Districts*  County Public Works  RWQCB	FY 99/00	Support City of SB change in service, use City of SB program as pilot for other areas.

<b>6D</b>	Evaluation of private laterals	Research, survey, investigation, report completion: 200 hours	County Public Works  City Public Works  Sanitary Districts*  Homeowner's Associations	FY 99/00	Volunteer testing of laterals in relation to smoke testing storm water sections. Review existing ordinances.  Propose study on limited, problematic area to determine potential extent of problem.
<b>Infrastructure  maintenance and cleaning  7A</b>	Define existing infrastructure	\$35K  0.5 FTE	County Public Works  City of SB	1999-00	Direct Public Works to develop mapping. This mapping can also be used for storm drain stenciling purposes (see 16A).
<b>7B</b>	Evaluate existing street sweeping program	\$10K  0.20 FTE	County Roads  City of SB	1999-00	Evaluate existing program and develop recommendations for changes as appropriate.
<b>7C</b>	Evaluate creek cleaning & drop inlet cleanout	\$20K  0.20 FTE  City of SB = \$20,000 in '99	County Flood Control  County Roads Div.  City of SB	1999-00	Evaluate proposed recommendations
<b>7D</b>	Employee training	40 hrs - PCW staff	PCW staff*  County  City of SB  City of Carpinteria	1999 - ongoing	Develop information package for public employees involved in handling wastes or infrastructure cleaning that can result in discharge to creeks or ocean. Develop companion effort for contractors (see Targeted

					Information).
<b>7E</b>	Evaluate options for cleaning private parking lots and vehicle fueling and service areas	40 hrs - PCW staff	PCW staff*  County  Cities		Direct staff to determine existing cleaning requirements for private developments and make recommendations for additional efforts.
<b>Animal Waste</b>  <b>8A</b>	DNA Testing	\$15,000 for Rincon study.  \$50,000 per watershed to determine animal source (domesticated versus wild animals) of contamination and direct appropriate BMP's	Public Health Department  Flood Control	1999	Do pilot study on Rincon. Evaluate applicability for other watersheds.
<b>8B</b>	Installation of improved signage for pet waste ord. and mutt mitt dispensers in high use areas	Creek monitoring, enforcement authority- \$1,000/year/park location  = \$15,000 total	County Parks Department  City Parks Department  NPDES program  City & County Animal Health & Regulation	1999 - 2000	Provide cost estimates, solicit voluntary compliance, evaluate need for enforcement. Explore countywide storm water quality management ordinance with provisions for pet waste cleanups. Consider better signs at parks and public locations, mutt mitt

					dispensars, more trash cans, etc.
<b>8C</b>	Targeted educational campaign for grazing and equestrian operations	See Targeted Information Campaign	Public Health County Parks Department City Parks Agriculture Commissioner's Office	1999-2000	Recommended as part of Targeted Information Campaign
<b>8D</b>	Targeted educational campaign for pet owners	See Targeted Information Campaign	Public Health City Agencies	1999-2000	Recommended as part of Targeted Information Campaign
<b>8E</b>	Ongoing inspection of creeks for illegal dumping and disposal of pet waste.	1,200 hours = 2/3 FTE	NPDES program City Agencies and enforcement	1999 and ongoing	Recommended: overlap with mapping functions, complaint response, creek clean ups, etc.
<b>8F</b>	Review of Coastal Zoning Ordinance related to cattle grazing	Utilize existing staff	PCW staff Flood Control Agriculture Commissioner's Office City of Santa Maria	1999-2000	Recommend as part of Ordinance Review work plan.

<b>8G</b>	Equestrian Trail Signage	Signs, posting, upkeep  500 hours, \$2500	PCW staff  City of Santa Barbara  City of Carpinteria  US Forestry Service	1999-2000	Recommend performing cost benefit/analysis as a result of DNA testing results if horses are significant contribution.
<b>Riparian &amp; wetland restoration</b>  <b>9A</b>	Establish & support ongoing Wetland & Riparian Restoration Working Group	Utilize existing staff  P&D (biologist) = 500 hrs/yr  PW (engineer) = 300 hrs/yr  PW-Roads (engineer) = 250 hrs/yr  PW-Flood Control (biologist) = 500 hrs/yr	PCW staff*  County Planning & Dev.  County Parks  County Flood Control	1999-00	Direct PCW staff to organize and host regular RWG meetings. Direct P&D, Public Works to designate existing staff to participate in RWG, and to incorporate wetland restoration/creation into long-term planning.
<b>9B</b>	Direct County Parks to hire/ contract with specialist to develop restoration plans	1 FTE @ \$75,000	County Parks Dept.*	1999 - ongoing	Direct County Parks to make recommend potential sites for restoration. Direct Flood Control staff to work with Parks to develop priority list and develop work plan. Return to Board with specific request for funding according to sites/priorities developed.
<b>9C</b>	Direct PCW to host restoration workshops/ develop info brochure on guidelines	Development/printing of brochure = \$10,000  (one-time cost)	PCW Staff*	1999-00	Direct PCW to host restoration workshops/ develop info brochure on guidelines

<b>9D</b>	Direct County staff, when feasible, to use local native plant stock for restoration work	Creates marginally higher costs for mitigation procedures.	PW Flood Control*	1999 - ongoing	Direct County staff, when feasible, to use local native plant stock for restoration work
<b>9E</b>	Establish a grant team to seek funding for restoration projects	Part of basic PCW budget	PCW Staff*  PW Flood Control  RWG	1999 - ongoing	Direct staff to establish grant team.
<b>9F</b>	Utilize new development mitigation requirements as source of support for restoration projects	40 hrs - P&D	Planning & Development*  County Flood Control	1999 - ongoing	Direct staff to establish process for accepting mitigation funds where direct mitigation is otherwise unfeasible or ineffective.
<b>Continuous Creek &amp; Ocean Testing</b>  <b>10A</b>	Continue current PCW follow-up testing	FY 99/00 = \$40,000  0.25 FTE EHS Tech*  0.20 FTE Lab Assist*	County EHS*  (Ocean Monitoring Program)  County PCW staff	6/99 - ongoing	Combine with NPDES and Ocean Monitoring
<b>10B</b>	Test for additional pollutants in selected watersheds	\$12,000 per watershed  0.25 FTE EHS Tech*  0.10 FTE Lab Assist*	County EHS*  County PCW staff	1999 - 00	Develop expanded water testing program for urbanized areas on South Coast.
<b>10C</b>	Increase current frequency of ocean monitoring	0.50 FTE EHS Tech*  0.20 FTE Lab Assist*	County EHS*  County PCW staff	1999 - 00	Evaluate need for additional testing after AB 411 is implemented.

<b>10D</b>	Test in additional watersheds not currently being tested	Test in 12 additional watersheds @ \$10,000 per watershed  0.50 FTE EHS Tech*  0.10 FTE Lab Assist*	County EHS*  County PCW staff	1999 - ongoing	Prioritize second tier of problematic watersheds, especially in NPDES urban areas.
<b>10E</b>	Investigate techniques for better identification of bacteria sources	DNA sampling study at Rincon = \$37,500  (Heal the Ocean will contribute \$22,500)	County PCW staff*  County EHS  Heal the Ocean	1999 - 00	Recommend funding study costs not covered by Heal the Ocean or other grants. Info from study will be applicable to other watersheds.
<b>10F</b>	Provide improved public access to data	Website enhancement:  Equip/materials: \$550  Staff time: \$150/week	County EHS*  County PCW staff	1999 - ongoing	Level of enhancement should be commensurate with increased water testing.
<b>Watershed Education Center</b>  <b>11A</b>	Renovate existing building at Arroyo Burro Beach to create watershed resource center	\$110,000 for renovation  Staff resources to develop contract with CEC for management/provide liaison for construction oversight.	Community Env. Council  Current PCW staff  County Parks Dept.  City of Santa Barbara	4/99 - 9/99	Recommend funding and staff resources to initiate renovation. Also direct staff to pursue grants/other alternative funding sources (donations, etc.)
<b>11B</b>	Develop interpretive program (displays, library, water lab, etc.)	\$26,000 for interpretive displays & materials  \$40,000 annually for resource center staff position	Community Env. Council  Current PCW staff  City of Santa Barbara	6/99 - ongoing	Direct staff to pursue grant funding, cooperative funding (with CEC/others) for interpretive displays and materials. Consider funding

					options for staff position.
<b>Public Service Announcements</b>  <b>12A</b>	Develop, produce & air TV PSAs	Current program funded by PCW. Potential future program = \$41,000	County of Santa Barbara*  City of Santa Barbara*  PCW staff  NPDES participants	1/99 - 5/99 and ongoing	Recommend evaluating current campaign impact and consideration of repeat campaign in FY 99/00.
<b>Targeted Information Campaign</b>  <b>13A</b>	Develop, print & distribute targeted info brochures	\$8,300 for initial printing of brochures  Staff time: 0.08 FTE (Public Information Assist)	County Water Agency  City of Santa Barbara	10/98 - 6/99 and ongoing	Recommend approval of staff time for development and funding for printing of brochures.
<b>Youth Education Program</b>  <b>14A</b>	Develop Project Clean Water presentation for youth	\$5,000 - training for presenters  \$1,440 - paid intern  \$45,000 - staff position	County PCW staff  City of Santa Barbara  County Public Health	4/99 - ongoing	Recommend funding for training and paid intern. Consider administration of education program by existing Project Clean Water / NPDES staff before funding designated position.
<b>14B</b>	Provide curriculum materials for teachers	\$2,000 for materials  Staff Resources (research, dist. of materials, admin)	County  City of Santa Barbara	4/99 - ongoing	Recommend funding for materials and staff time for admin.

<b>14C</b>	Provide water test kits	\$625 for initial purchase of 25 kits  Staff Resources - admin	County  City of Santa Barbara	4/99 - ongoing	Recommend funding/staff support
<b>Speakers Bureau/Community Forum 15A</b>	Develop & promote speakers bureau for PCW topics	\$2,250 (one time)  \$4,050 (annual/ongoing) for printed materials, staff time, training	Current PCW staff  County  City of SB	4/99 - ongoing	Recommend funding/staff support
<b>15B</b>	Coordinate Community Forum	\$805 for printed materials and staff time to administer	Current PCW staff  County  City of SB	4/99 - ongoing	Recommend funding/staff support
<b>Storm Drain Stenciling 16A</b>	Coordinate & promote volunteer stenciling	\$7,500 for staff time and stenciling materials	County Public Works*  City Public Works*	4/99 - 6/99	Recommend funding/staff support
<b>16B</b>	Develop long term / permanent stenciling program	\$24,000 (one time)  \$3,900 annually  plus staff time for applying permanent markers	County Public Works*  City Public Works*	7/99 - ongoing	County/Cities to develop as part of NPDES
<b>16C</b>	Require storm drain stenciling in all new developments	20 hrs - P&D	County P&D*  City Public Works	7/99 - ongoing	Direct P&D staff to consider adoption of this requirement for all new development.

<b>Website</b>  <b>17A</b>	Evaluation  Modification	Ongoing: 3 hrs/week  On-line swimmer illness report form will likely require separate evaluation. Admin Assist II @ 3 hrs/week = \$5,000/year	County Public Health  Current Project Clean Water staff	11/98-ongoing	Recommend providing designated County Staff to maintain and enhance site. Center for Disease Control (County Public Health) to perform evaluation of on-line swimmer illness report form
<b>Improved Beach &amp; Creek Signage</b>  <b>18A</b>	Develop permanent signs for beaches to provide beach status and general info.	\$13,618 for sign construction and installation (22 signs)	Current PCW staff*  County Parks Department*  City of SB Parks Department	4/99 - 7/99	Recommend implementing Level II service (multiple signs at 16 beaches where ocean water monitoring occurs) and modify as necessary pursuant to AB 411.
<b>18B</b>	Install similar signs at parks with creeks	\$3,714 for sign construction and installation (6 signs)	Current PCW staff*  County Parks Department*  City of SB Parks Department  City of Carpinteria	8/99 - 11/99	Consider signage in parks with creeks when Level II is complete.
<b>Homeless Outreach</b>  <b>19A</b>	Provide accessible toilet facilities and trash cans	See recommendations 1A and 2A.	County Social Services*  General Services  PCW staff  City of Santa Barbara	1999 - ongoing	PCW staff should work with and expand recommendations 1A & 2A

<b>19B</b>	Direct residents of illegal encampments to established campgrounds or other accommodations	Part of basic PCW budget	City of Santa Barbara*  County Social Services*  PCW staff	1999 - ongoing	PCW staff should work with staff from sponsoring agencies to promote implementation of these solutions.
<b>19C</b>	The last low-income hotel that serves the poor in Santa Barbara (Faulding Hotel) must be preserved	Part of basic PCW budget	County Social Services*  PCW staff  City of Santa Barbara	1999 - ongoing	PCW staff should work with staff from sponsoring agencies to promote implementation of these solutions.
<b>19D</b>	New, low-income hotels, must be considered in the city/county planning process.	Part of basic PCW budget	County Social Services*  PCW staff  City of Santa Barbara	1999 - ongoing	PCW staff should work with staff from sponsoring agencies to promote implementation of these solutions.
<b>19E</b>	Development of a year-round, all-purpose shelter.	Part of basic PCW budget	County Social Services*  PCW staff  City of Santa Barbara	1999 - ongoing	PCW staff should work with staff from sponsoring agencies to promote implementation of these solutions.
<b>19F</b>	Creation of an affordable detoxification program	Part of basic PCW budget	County Social Services*  PCW staff  City of Santa Barbara	1999 - ongoing	PCW staff should work with staff from sponsoring agencies to promote implementation of these solutions.

NOTE: Public information will be a component of all proposed solutions, even if they are not specific public information efforts.

\* 10A - 10D: 1 FTE EHS Tech = \$38,155/yr; 1 FTE Lab Assist = \$19,976/yr. Between these four recommendations, staff requirements would be 1.5 FTE EHS Tech and 0.5 FTE Lab Assist.