

San Diego Stormwater Copermittees
Jurisdictional Urban Runoff Management Program
(URMP)

Outreach
Model Program Guidance

September 19, 2001



project clean water

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Section I. Background

Often without realizing it, each of us in our daily lives engages in activities that contribute to stormwater and urban runoff pollution. As our regional population continues to increase and urbanization rapidly expands, the significance of each of these seemingly inconsequential acts becomes even greater. Degradation of receiving waters not only contributes to public health and safety threats, but also negatively impacts the aquatic environment, riparian habitat, tourist and beach oriented economies, property values and aesthetic concerns. We can reduce our contributions and degradation of these resources by increasing public awareness and changing attitudes and behaviors.

Order No. 2001-01¹ (Permit) section F.4. establishes requirements for Copermittees to implement comprehensive educational programs which will measurably increase the knowledge of target populations with respect to Municipal Separate Storm Sewer Systems (MS4s), impacts of urban runoff on receiving waters, and possible Best Management Practice (BMP) solutions, as well as to measurably change the behavior of these target populations thereby reducing pollution to MS4s and the environment.

This document provides suggested guidance to Copermittees in developing the Education element of their Jurisdictional Urban Runoff Management Programs as required by Permit section H.1.(6)² to be submitted to the SDRWQCB by February 21, 2002. It does not establish, or promote the establishment of, a particular set of minimum standards or program activities for Copermittee programs. Rather, it provides guidance for establishing individual program priorities and requirements, and a description of viable options and approaches available to Copermittees in lawfully complying with their permit obligations. It additionally provides a description of areas of potential Copermittee collaboration to utilize economies of scale and provide consistency between efforts. Permit section N.1. specifically requires Copermittees “collaborate with all other Copermittees regulated under this Order to address common issues, promote consistency among Jurisdictional Urban Runoff Management Programs (Jurisdictional URMPs), and to plan and coordinate activities required under this Order.” While this neither relieves Copermittees of their obligation to develop and implement jurisdictional programs, nor explicitly requires that they implement programs jointly with other Copermittees, it emphasizes the importance of collaboration to ensure consistency between programs and the most efficient and effective use of limited resources. Consistency is especially crucial to the citizens of San Diego County who must ultimately abide by the standards and requirements set forth in individual jurisdictional programs.

This document represents the first phase of Copermittee collaboration with respect to outreach and education. It is expected that additional collaboration will be necessary as Copermittees implement programs and evaluate their effectiveness over time. Recommendations developed by the Model Outreach Activities Technical Workgroup are discussed in Section V. C.

¹ Order No. 2001-01, NPDES No. CAS0108758, Waste Discharge Requirements for Discharges of Urban Runoff from the Municipal Separate Storm Sewer Systems (MS4s) Draining the Watersheds of the County of San Diego, the Incorporated Cities of San Diego County, and the San Diego Unified Port District.

² Permit section F.1.(6) specifically requires “A description of the content, form, and frequency of education efforts for each target community”.

Section II. Program Objectives

The overall goal of this Model Outreach guidance element is to assist Copermittees in developing outreach programs and strategies that will support their overall Permit responsibilities. The Permit broadly requires that Copermittee education programs (1) measurably increase the knowledge of target communities regarding MS4s, impacts of urban runoff on receiving waters, and potential BMP solutions for the target audience; and (2) measurably change the behavior of target communities and thereby reduce pollutant releases to MS4s and the environment. In support, this Model Program addresses the following primary objectives:

- o To provide useful guidance to Copermittees in developing outreach and training programs that will support the successful implementation of each of the required elements of the Permit,
- o To provide a forum for interested stakeholders to allow for their input prior to the development and implementation of local Copermittee outreach programs,
- o To maximize regional and watershed level consistency between Copermittee education programs,
- o To encourage the consistent use of reasonable and effective BMPs by target audiences,
- o To facilitate the adaptation of education and outreach tools for the appropriate target populations, and raise knowledge and awareness of the issues related to stormwater and urban runoff, and
- o To promote the most effective use of existing resources through partnerships with the public, the business community, academic institutions, non-profit organizations and other interested stakeholders.

Section III. Implementation Strategy

This section provides an overview of the education, outreach, and training requirements contained in Permit section F.4.³, and provides guidance to Copermittees in complying with them. It first describes the major elements of a Copermittee Education Program as required by the Permit, and provides general guidance for the development of an overall program implementation strategy. More detailed guidance is then provided for each of the six specific focused program elements required by the Permit. Finally, conclusions and recommendations from the Model Education Technical Workgroup with respect to specific areas of potential Copermittee collaboration are presented.

A. GENERAL STRATEGY

A number of important issues must be considered by Copermittees in developing and implementing a comprehensive education program. The Permit generally requires that education elements be developed for six types of target audiences and specifies the minimum elements that must be considered for each. Beyond this initial direction, the Permit allows Copermittees broad discretion in determining the specific content of their programs, as well as the types of strategies and tools that can be used to implement them. Designing an effective outreach strategy requires the consideration of a number of additional factors, which are often not explicitly addressed in the Permit. The sections listed below reiterate Permit requirements, as applicable, and provide information to Copermittees on potential options for developing effective programs to achieve and maintain compliance:

- o Target Audiences
- o Outreach Objectives
- o Program Content
- o Geographic Focus
- o Outreach Tools and Approaches
- o Program Resources

1. Target Audiences

Permit section F.4. establishes six target audiences which must be addressed by the Copermittees' Education Programs.

- o Residential Community, General Public, and Schoolchildren
- o Municipal Departments and Personnel
- o Construction Site Owners and Operators
- o Industrial Owners and Operators
- o Commercial Owners and Operators
- o Quasi-Governmental Agencies / Districts

Educational strategies for each of these target audiences are described in greater detail in section III.B. (Focused Program Elements). Copermittees can also find additional information on these audiences and their corresponding Permit requirements in other

³ Additional requirements can be found in other Permit sections, but most are contained in section F.4. Appendix A provides a complete summary of all Permit requirements.

Model Programs currently under development (Existing Residential Areas, Construction Activities, Industrial Facilities, Commercial Facilities, Municipal Facilities, and Land Development).

2. Outreach Objectives

For each of the target audiences above, Copermittees must develop and implement an Education Program using all media as appropriate to (1) measurably increase the knowledge of target communities regarding MS4s, impacts of urban runoff on receiving waters, and potential BMP solutions for the target audience; and (2) measurably change the behavior of target communities and thereby reduce pollutant releases to MS4s and the environment. While these objectives provide initial direction and establish a clear need to focus on program results, Copermittees should continue to establish more specific and measurable objectives to guide the development and implementation of each education program element. In doing so, Copermittees should note that environmental educators have divided the learning process into four distinct phases: (1) knowledge, (2) attitudes, (3) skills, and (4) behaviors. Ultimately, Copermittees must be able to demonstrate changes in the knowledge and behavior of target audiences over the five year Permit cycle. Focusing educational efforts solely on knowledge can be shortsighted since this does not always correlate to changes in attitudes and behavior. Program efforts must therefore focus on understanding, and where necessary changing, the attitudes of target audiences, and providing useful information that will enable them to change their behaviors.

3. Program Content

(a) Required Content. Permit section F.4. specifies the minimum program content which must be included where applicable for each target audience. This is a programmatic requirement, and therefore should not be interpreted to mean that all materials and approaches must incorporate for each of the issues listed in Table 1 below. For instance, Copermittees may determine that educating kindergarten children on State and Federal water quality laws is unproductive. Copermittees must therefore determine where specific topics are appropriate and tailor their programs accordingly.

(b) Additional Considerations. Where possible, outreach and education activities should target specific populations, sub-populations, activities, areas, and/or constituents considered to be “high priority”. In the absence of detailed initial baseline data and information, Copermittees must necessarily apply their efforts more generally. Over time, however, these efforts should be modified to better reflect an increasing body of knowledge regarding the potential contribution of specific sources to water quality impacts. While Copermittees can continue to gear general stormwater pollution awareness, education and outreach efforts to the community at large, more focused education can then be provided for specific high priority activities. In combination with other program data and information, this approach can be used to establish a nexus between attitudinal / behavioral change and environmental gains over the life of the Permit. This information can then be used to further refine educational goals and strategies over a longer period. Focused education can also be conducted initially within subgroups of the six minimum categories specified in the Permit. For instance, Copermittees may consider particular trades or industries to be high priority polluters, and may focus their educational efforts accordingly.

Table 1: Potential Outreach Content by Target Audience (Permit Section F.4.)

Content / Information	Target Audience				
	Residential, General Public, Schoolchildren	Municipal	Construction	Industrial, Commercial	Quasi-Governmental
Permit section F.4. requires that the Copermitees' education programs address the following types of information <u>where applicable</u> for each of the target audiences indicated.					
State and Federal water quality laws	X	X	X	X	X
Requirements of local municipal permits and ordinances	X	X	X	X	X
Impacts of urban runoff on receiving waters	X	X	X	X	X
Watershed concepts	X	X	X	X	X
Distinction between MS4s and sanitary sewers	X	X	X	X	X
Importance of good housekeeping	X	X	X	X	X
Pollution prevention and safe alternatives	X	X	X	X	X
Household hazardous waste collection	X	X	X	X	X
Recycling	X	X	X	X	X
Best Management Practices (BMPs): Site specific, structural and source control	X	X	X	X	X
BMP maintenance	X	X	X	X	X
Non-stormwater disposal alternatives	X	X	X	X	X
Pet and animal waste disposal	X	X	X	X	X
Proper solid waste disposal	X	X	X	X	X
Equipment and vehicle maintenance and repair	X	X	X	X	X
Public reporting mechanisms	X	X	X	X	X
Green waste disposal	X	X	X	X	X
Integrated pest management	X	X	X	X	X
Native vegetation	X	X	X	X	X
Proper disposal of boat and recreational vehicle waste	X	X	X	X	X
Traffic reduction, alternative fuel use	X	X	X	X	X
Water conservation	X	X	X	X	X
Public reporting information services	X				
Residential and charity car-washing	X				
Community activities	X				
Basic urban runoff training for all personnel		X	X	X	X
Additional urban runoff training for appropriate personnel		X	X	X	X
Illicit Discharge Detection and Elimination observations and follow-up during daily work activities		X	X	X	X
Lawful disposal of catch basin and other MS4 cleanout wastes		X	X	X	X
Water quality awareness for Emergency/First Responders		X	X	X	X
California's Statewide General Industrial NPDES Permit		X	X	X	X
California's Statewide General NPDES Construction Permit		X	X	X	X
SDRWQCB's General NPDES Permit for Groundwater Dewatering		X	X	X	X
401 Water Quality Certification by the SDRWQCB		X	X	X	X
Statewide General NPDES Utility Vault Permit		X	X	X	X
SDRWQCB Waste Discharge Requirements for Dredging Activities		X	X	X	X
Local requirements beyond statewide general permits		X	X	X	X
Federal, state and local water quality regulations that affect development projects		X	X	X	X
Water quality impacts associated with land development		X	X	X	X
Alternative materials & designs to maintain peak runoff values		X	X	X	X
How to conduct a storm water inspection		X	X	X	X
Potable water discharges to the MS4		X	X	X	X
De-chlorination techniques		X	X	X	X
Hydrostatic testing		X	X	X	X
Spill response, containment, & recovery		X	X	X	X
Preventive maintenance		X	X	X	X
How to do your job and protect water quality		X	X	X	X

4. Geographic Focus

There are three levels at which education and outreach efforts can generally be applied⁴; Jurisdictional, Watershed and Regional. Copermittees may choose to pursue educational activities for each targeted audience at a variety of levels. Ideally a combination of tools and approaches that will complement each other and achieve the most effective use of limited resources will be selected.

(a) Jurisdictional Activities and Programs. With limited exception, the Permit places sole responsibility for developing and conducting education programs with local jurisdictions. Jurisdictional activities and programs should initially be geared to immediate program needs. Local programs should address local issues and educate citizens on the importance of non-polluting behaviors and point out the specific impacts that pollution has had in their community. Copermittees should concurrently explore the role of education at the watershed and regional levels, since these activities provide other benefits that can complement and support local efforts.

(b) Watershed Activities and Programs. A strong watershed element is important for establishing ownership in the minds of target audiences. People are more likely to respond to education and outreach when they understand the impacts of upstream activities on downstream areas. Permit section J.2.g. requires that Copermittees develop and implement watershed-based education programs by January 31, 2003. In addition to this requirement, there are a number of reasons for addressing educational activities on a watershed basis. First, educational activities can be better tailored to address the concerns of local citizens and watershed network groups regarding local water quality issues. Watershed-level activities can also be utilized in combination with jurisdictional and regional approaches to allow for a more systematic and efficient use of existing resources. By working cooperatively with other entities along common waterways, Copermittees can also develop partnerships for achieving other shared goals such as litter abatement, habitat restoration and invasive plant eradication.

(c) Regional Activities and Programs. Regionally conducted activities can often be the most effective means of reaching the community at large, as well as other focused targets such as business and industry associations. The City of San Diego is large enough to undertake significant programs, that may not be practical for the smaller jurisdictions. In addition to increasing the Copermittees' ability to develop and utilize clear, concise, and broad-based messages, regional approaches offer significant opportunities for leveraging cost-savings. Regional programs, especially those utilizing broadcast media, also offer avenues for sharing stormwater information more clearly and consistently than other approaches. In many instances, such programs may be the most reasonable, practical and economical approach available to Copermittees. While regional content is generally broad-based, it can also address issues and concerns specific to watersheds and local jurisdictions.

5. Outreach Tools / Approaches

The effective implementation of BMPs relies on educating the parties who ultimately

⁴ The inclusion or emphasis of a particular geographic approach does not exclude particular informational content that addresses other levels. For instance, a regional outreach campaign directed at the general public would address watershed issues.

must undergo behavioral changes, whether it includes the general public, school children, public interest groups, businesses or agency personnel. Outreach may include information on both nonstructural (pollution prevention, good housekeeping, etc.) and structural (treatment control) BMPs, but will generally emphasize non-structural measures and behavioral change. Where applicable, outreach should be presented in a bilingual format to educate both English-speaking and Spanish-speaking residents, but decisions to translate materials into Spanish or other languages should be based on a clear understanding of the demographics of potential target audiences. Table 2 below summarizes the types of outreach tools which may be most used to target particular audiences at the regional, watershed and local levels.

(a) Broadcast Media. Television and radio are a large component of traditional advertising activities. These mechanisms can have a significant impact since most people spend significant amounts of time watching television or listening to the radio. Broadcast media provide access to large audiences and may therefore provide an economical approach to disseminating general program information, especially if pursued cooperatively with Copermitees or other entities. Though being pursued as a collaborative project, broadcast media may be pursued independently by large cities with significant resources, such as the City of San Diego.

(b) Print Media. Newspaper advertisements or articles, magazines, newsletters, newspapers, bill inserts, paycheck inserts, brochures, fact sheets and printed BMPs can all be used effectively to inform and educate target audiences.

(c) Brochures/Printed Materials. Educational brochures are a useful and relatively inexpensive way to reach specific target audiences (e.g., home do-it-yourselfers, businesses, etc.) with water quality and Best Management Practice information. Brochures also include information regarding littering, discharge regulations, illicit discharge prohibitions and illegal connections. Providing reasonable educational information to the public is vital in promoting and implementing BMPs. Other similar types of printed materials include reference pages or cards with listings of phone numbers, websites or referral pages for community members to contact specific programs or resources for stormwater programs or volunteer opportunities.

(d) News Media Releases. Articles and news releases may be distributed for inclusion in city newsletters and local papers, likewise, trade and industry associations will be encouraged to print articles in their newsletters. Media releases may be used to announce special promotions, clean up days or special events.

(e) Municipal Vehicles. Many municipalities have started advertising and/or displaying program information on service or fleet vehicles. Some have messages printed directly on the vehicle, while others have changeable board space available. This type of advertising should not be overlooked as a potentially inexpensive and effective way for municipalities to disseminate water quality information.

(f) Municipal Facilities / Public Lobbies. Public lobbies and municipal buildings that serve the public provide space for distributing posters, brochures, and other educational items. Permit counters (construction, grading, hazardous materials, etc.) are especially effective for distributing materials to the business sector.

Table 2: Potential Application of Outreach Tools by Target Audience and Geographic Focus

Tool / Approach by Target Audience	Geographic Focus		
	Regional	Watershed	Jurisdictional
Residential			
1. Broadcast Media (Radio and Television)	X		X
2. Print Media	X	X	X
3. Brochures	X	X	X
4. Media Releases	X	X	X
5. Municipal Vehicles			X
6. Municipal Facilities / Public Lobbies			X
7. Libraries	X	X	X
8. Promotional Items	X	X	X
9. Other Advertising	X	X	X
10. Training Workshops	X	X	X
11. Hotlines	X		X
12. Internet Websites	X	X	X
13. Community Events	X	X	X
14. Public Service Announcements	X	X	X
15. Video	X	X	X
16. School Programs	X	X	X
Municipal			
1. Print Media			X
2. Brochures			X
3. Municipal Vehicles			X
4. Municipal Facilities / Public Lobbies			X
5. Promotional Items			X
6. Other Advertising			X
7. Training Workshops			X
8. Video			X
Construction			
1. Print Media	X		X
2. Brochures	X		X
3. Municipal Facilities / Public Lobbies	X		X
4. Promotional Items	X		X
5. Other Advertising	X		X
6. Training Workshops	X		X
7. Internet Websites	X		X
8. Video	X		X
Commercial / Industrial			
1. Print Media	X		X
2. Brochures	X		X
3. Municipal Facilities / Public Lobbies	X		X
4. Promotional Items	X		X
5. Other Advertising	X		X
6. Training Workshops	X		X
7. Internet Websites	X		X
8. Video	X		X
Quasi-Governmental			
1. Print Media	X		X
2. Brochures	X		X
3. Municipal Facilities / Public Lobbies	X		X
4. Promotional Items	X		X
5. Other Advertising	X		X
6. Training Workshops	X		X
7. Internet Websites	X		X
8. Video	X		X

(g) Libraries. Because of their community focus, libraries are convenient locations for the distribution of printed materials; most provide a rack for materials distribution. After school programs or special promotion weeks may provide additional opportunities to reach target audiences.

(h) Promotional Items. Promotional items are an effective way to disseminate program information to residents, especially if there is a value or use associated with the product. Give-away items such as dustpans currently given away by the City of San Diego remind citizens to sweep instead of grabbing the hose to wash down sidewalks and driveways. Useful imprinted, promotional items such as pencils, magnets and other tokens can also keep hotline information readily available to citizens.

(i) Other Advertising. A variety of other methods of traditional and non-traditional advertising should be considered for education and outreach. Typical examples of traditional advertising media include billboards and transit advertising such as shelters, transit centers and benches. Transit vehicles also often have advertising space available. Taxicabs and limousine services may also sell advertising space when cabs are equipped with board space on the outside of the vehicles. Examples of non-traditional advertising include the use of slides in movie theatres, and messages printed on grocery bags, coffee jackets, voters' guides, and bill inserts. Such approaches have the advantage of being novel, and may be more cost-effective than traditional methods.

(j) Training / Workshops. Workshops and training sessions are very effective tools for providing specific information to agency personnel and specific industries. Because of their immediacy and "hands on" approach, these forums are especially useful for increasing awareness and knowledge, conveying complex or technical information, and instructing attendees on the use of specific best management practices and pollution prevention techniques. Workshops should be geared toward the involvement of agencies or businesses that are similar in nature and activities. They can also be coordinated with other local agencies and organizations (e.g., hazardous materials regulators, pollution prevention specialists, state regulatory agencies and industrial associations) to maximize impact, take advantage of overlaps in subject matter, and reduce overall costs.

Examples that might be considered by Copermittees include workshops for automotive repair activities, landscapers, mobile carpet and upholstery cleaners, or restaurant operators. Ongoing workshops include "Protector Del Agua" training which is offered in English and Spanish for landscapers and laborers working in the field. Workshops could also be offered for residential audiences to address a variety of topics, such as less toxic gardening techniques, home and garden care, low water-use gardening, and other home related topics. Currently, the County Water Authority and Cuyamaca College offer gardening classes that also encourage stormwater pollution prevention techniques.

(k) Hotlines. The effective dissemination of public information is a central element in successfully educating potential dischargers and providing opportunities for public complaints. Permit Section F.5.g. requires that Copermittee programs include a hotline component. There are currently two regional stormwater hotline numbers promoted within San Diego County, a toll-free Regional Stormwater Hotline, 1-888-846-0800 and the Think Blue Hotline, 1-888-THINK BLue (1-888-844-6525). Both of these hotlines are staffed by the County of San Diego Monday through Friday, 8:00 a.m. - 5:00 p.m. Community members are encouraged to call the hotlines to report complaints and get

additional information. In addition to personal service during regular business hours, the hotline provides a voice mail message for 24-hour public access in both English and Spanish.

(l) Internet Websites. Websites are becoming an increasingly popular option for conveying water quality information to general and focused audiences. Some advantages of this approach are that websites are relatively inexpensive to develop, can be updated by agency staff, can be easily tailored to convey a wide variety and complexity of content. Websites have another benefit in that they are accessible beyond local jurisdictional boundaries. Many local water quality websites have been established in the San Diego Area. Examples include the County of San Diego's Project Clean Water website at <http://www.co.san-diego.ca.us>, and the Think Blue Website at <http://www.thinkblue.org>, established through a cooperative arrangement between the City of San Diego, CalTrans, the Port of San Diego, and the County of San Diego. Both of these sites disseminate a variety of information to residents including household tips for reducing contributions to stormwater pollution, and upcoming community events and activities. They also provide links to other outreach and education providers such as the San Diego California Regional Environmental Education Community (SanDCREEC) site at <http://www.creec.org>.

(m) Community Events. Community events such as informational booths at community fairs and family festivals provide a conduit to distribute information and resources directly to target communities. Providing practical information to the public is the most effective way to promote the implementation of BMPs. These events provide staff with an opportunity to communicate with a larger audience and to address their needs, concerns and questions directly. These events allow for brochures and other promotional items to be given directly into the hands of the intended target audiences. Examples of community activities encouraging public participation include storm drain stenciling events, beach clean-up days, creek clean-up days and neighborhood clean-up days. Events currently underway have included sponsorship by I Love A Clean San Diego, San Diego BayKeeper, Solana Recyclers, City of Oceanside, Surfrider Foundation, City of San Diego, San Diego Port Tenants Association, and the Port of San Diego. Other community events may include holiday parade festivals, street fairs, multicultural or ethnic fairs, and family festival days.

(n) Public Service Announcements. Radio and television Public Service Announcements (PSAs) are frequently utilized by public agencies to educate the community on specific issues. The County of San Diego has broadcast two 30-second PSAs on the County Television Network (CTN) over the past several years. One of these targets residential sector, while the other is geared for local businesses. Other PSAs are available through a variety of sources such as Earth's 911. Other broadcast media such as PBS, ITV and others can be considered for PSA broadcasts.

(o) Videos. Videos can be a very effective way to provide urban runoff information, and can be made accessible to the public in a variety of ways. Existing videos with stormwater, urban runoff, and other related content are available from a variety of public and private sources. For example, "We Live Downstream", an 8-minute video, has been produced by the County of San Diego in English and Spanish. The video, which is appropriate for all ages, is broadcast on the County Television Network (CTN) and is available for loan to civic organizations, municipalities and the general public, upon

request. It is also available for check out at the County Public Libraries and at the City of San Diego “Green” Library Branch.

(p) School Programs. Education of school children is essential for promoting stormwater awareness. School presentations can be delivered to students from kindergarten through college levels, and can be focused at a variety of groups including individual classrooms, school assemblies, teacher workshops, or special events.

One approach that can educate all ages of students is to encourage development of educational curricula which incorporate stormwater issues. From elementary school through high school, stormwater pollution issues can appropriately be incorporated into water science, biology, environmental studies, health science and driver’s education courses. At the college and university level, stormwater issues can also be incorporated in urban planning, and engineering classes. Currently there are Regional Occupational Programs (ROP) being designed to offer courses in water quality that include stormwater management.

Stormwater pollution issues can also be highlighted through special school presentations, either in assemblies or in individual classrooms. Energetic and interactive presentations can be a creative way of educating students within a formal school setting. Presentations additionally provide an opportunity to deliver materials or verbal information indirectly to parents through students. Watershed models used by many local agencies are effective visual tools for showing students how pollution from neighborhoods, industries, roads and farms flow through storm drains, creeks, lakes, and rivers and eventually flow to the ocean.

Since many agencies and groups have already established programs to provide environmental education to students, Copermittees should actively seek to utilize these existing resources. Agencies and organizations such as the County Water Authority have extensive programs for K-12 including water awareness presentations, water testing programs, school gardens, and water conservation programs. With minimal modification, these programs can be expanded to include stormwater pollution prevention concepts. Most of these programs emphasize a hands-on approach to education, which is generally the most effective means of relating concepts learned in the classroom to application in the real world. Field trips to areas of riparian habitat or aquariums can demonstrate the effects of stormwater pollution while students additionally learn about related concepts and disciplines such as biology, hydrology, geology, geography and numerous other sciences. Encouragement to participate in hands-on activities will help to promote stewardship of environmental resources. The County Office of Education operates the “Splash Science Mobile Lab” (grades 4-6) and the “Marine Science Floating Lab” (grades 3-12), both of which are used extensively for school programs. The Museum to School Partnership/ Communities Alive In Nature (MSP/CAN) is one program that provides education, as well as exposure to field activities. MSP/CAN is a K-12 watershed-based core curricular program that integrates science, math, technology, language arts and service learning. Students are required to perform monitoring/restoration projects and deliver public education. Students currently focus on water quality, habitat, erosion, invasive species, and human impacts on watershed health. (The program is conducted through The Environmental Trust and the San Diego Natural History Museum). The County, Resource Conservation Districts, several water agencies, and municipalities also provide in-school presentations. Participants at these presentations receive brochures and other appropriate materials for

their age groups to share with their families. Coloring books and comic books have been developed to appeal to young children. The stories are educational and features characters that are familiar from videos, cartoons and presentations. Characters include “Wally and Rufus” (Stormwater Ducks), “Fancy Finn” (Riverside County Fish Mascot) and “Phinneous Greene” (Mission RCD Frog), “Miss Frizzle” (San Diego Natural History Museum) and the Teenage Mutant Ninja Turtles (US EPA).

6. Program Resources

(a) Program Costs and Funding. The potential costs associated with implementing targeted outreach activities can be prohibitive, especially since stormwater programs must compete for funding with other services (public safety, etc.) which are usually given higher priority. Prior to developing and implementing outreach programs and activities, Copermittees must determine the potential costs associated with the production and distribution of specific materials or content. Appendix D provides an overview of costs associated with some types of outreach tools. Since program budgets are limited, Copermittees must also determine the best and most effective use of the resources available to support their program objectives. One approach to limiting costs is to utilize economies of scale by partnering with other Copermittees or programs. Additionally, Copermittees should consider all potential sources of external funding. Outreach efforts can be augmented by dovetailing onto existing programs with similar messages and through the pursuit of grant funds. Grants function not only to obtain vital funding, but also to foster local alliances for projects that complement efforts while maximizing local resources.

Copermittees should also consider potential “crossover education” or consolidation with existing programs, such as solid waste removal, composting, recycling, household hazardous waste, used oil recycling and water conservation. Used Oil Recycling and Household Hazardous Waste grant funds from the California Integrated Waste Management Board (CIWMB) currently denote funding eligibility for establishing Pollution Prevention programs. Likewise, partnerships with local environmental nonprofit organizations that have access to other types of environmental funds could be beneficial.

(b) Resources / Partnerships. Cooperative efforts with Copermittees, agencies, community groups, and educational institutions should be promoted to encourage the most productive and effective implementation of local, watershed and regional outreach efforts. Copermittee programs should foster mutually beneficial partnerships and advocate teamwork to keep messages consistent while maximizing program coverage. Forging viable partnerships within the local community is an effective way to actively involve specific groups to constructively circulate information. This can be accomplished by establishing a solid network with other agencies, community groups, educators, local business and industry, and the public. Examples of potential partnerships are described below.

- (1) **Other Copermittees.** Copermittees are encouraged to work cooperatively through the formation of, and participation in, a Stormwater Education Subcommittee. This Subcommittee should work together on an ongoing basis to provide consistent, comprehensive, cost-effective outreach to residents on local, watershed, and regional scales. Collaboration among Copermittees to promote consistency between their programs is also required in Permit section N.1.

- (2) Household Hazardous Waste (HHW) Programs. Partnerships with local Household Hazardous Waste Programs are an important tool for maintaining Permit compliance and maximizing program effectiveness by incorporating stormwater pollution prevention into existing materials and events. Several existing programs currently educate the public about the dangers associated with household hazardous materials. These programs also offer safe collection, recycling and disposal options for household hazardous wastes to reduce the amount of materials disposed to the storm drain system. Many programs have established permanent facilities, one-day collection events and door-to-door pickup services for disabled and elderly residents. In addition, a few have established hotline numbers to publicize local used oil recycling, as well as general recycling and household hazardous waste collection opportunities. Examples of these include the County of San Diego Hotline at (877) R-1 EARTH [(877) 713-2784], Regional Solid Waste Association HHW Hotline (800) 714-1195, South Bay's (800) 237-2583, and the City of San Diego (619) 235-2111.
- (3) County Office of Outdoor Education. The County Office of Outdoor Education offers a variety of school activities for students in grades K-12. Through tools such as the Splash Science Mobile Lab, Marine Science Floating Lab and other programs, water quality education and stormwater/urban runoff are introduced to elementary, middle, and high school children.
- (4) San Diego County Water Authority. Partnering with the County Water Authority to promote water conservation and techniques to prevent runoff can be beneficial and maximize the use of limited outreach resources. Collaborative efforts can focus on educating residents who may not be aware of how their habits contribute to the degradation of water quality while encouraging water conservation (in the home and garden) and implementation of runoff control techniques.
- (5) Recycling and Litter Prevention Programs. Partnering with municipal departments and solid waste disposal service providers can be an effective means of encouraging citizen groups to participate in programs such as litter abatement. These efforts tie into existing programs by emphasizing the use of ashtrays for cigarette butts, clean-up day campaigns, and proper disposal of pet waste. Currently, jurisdictions throughout California receive Department of Conservation, Division of Recycling block grant funds specifically targeted at recycling and litter prevention. All jurisdictions are encouraged to apply for these readily accessible funds and incorporate them as supplemental funding for their pollution prevention programs. Coordination on community clean-up activities can also be coordinated through Keep California Beautiful (KCB). KCB provides community programs with free bags and promotional assistance for clean-up activities and events. Likewise, jurisdictions may consider participating in the greater Keep America Beautiful programs promoting citizen involvement.
- (6) Pollution Prevention Workgroups. Partnering with Pollution Prevention (P2) Workgroups can be beneficial in reaching targeted business communities. In addition to providing a clear and consistent message between programs, opportunities may arise to incorporate stormwater messages into P2 literature and programs.

- (7) Local Businesses. Partnerships formed with local businesses can aid in distributing literature and possibly result in other in-kind services. Businesses may be able to cover costs related to re-printing materials for distribution to their employees or to donate advertising space. Trade and industry associations should also be utilized where possible as a means of more easily reaching broader groups of specific businesses types. Copermittees may be able to speak or distribute information at regular meetings or to utilize their newsletters to disseminate focused water quality information.
- (8) Local Television Channels. Partnerships with local television and radio stations can be an integral part of a Copermittee's media campaign. The promotion of stormwater pollution prevention messages through a variety of broadcast media is key to reaching a wide range of audiences. Public service announcements (PSAs), news stories, announcements for community events and paid advertising can be utilized in English and Spanish to reach target audiences. Advertising and media promotions can also be utilized to broadcast video and PSAs promoting stormwater issues.
- (9) Community Education Programs. Partnerships with Community College Districts, Universities and other academic institutions offer excellent opportunities for special events, workshops, and tie-ins with course content for individuals and businesses. Presentations to community groups (Rotary, Kiwanis, Optimists, Soroptimists, etc.) and involvement in community booths have proven to be effective outreach and education avenues in local communities. The inclusion of stormwater pollution prevention topics into existing media also provide opportunities for collaboration.

Water quality program topics can be integrated into existing programs to amplify outreach efforts. Many local groups have consistently provided public education and outreach services, including stormwater pollution prevention messages.

- (10) Earth's 911 (1-800-CLEANUP). The Earth's 911 national hotline 1-800-CLEANUP and www.1800CLEANUP.org website may be included in outreach materials. These resources provide comprehensive information on stormwater and other environmental topics on a statewide and national basis. By entering a zip code, information on disposal locations and recycling centers can be accessed. This process allows each jurisdiction to tailor the information to suit their individual needs. Currently, SANDAG's Solid Waste Technical Advisory Committee is updating the information on a regional basis. The California Integrated Waste Management Board (CIWMB), other state agencies and several national corporations, such as Home Depot and Ford Motor Company, also fund the program.

Beyond this initial list, numerous other resources and potential partnerships are available to assist or augment stormwater education efforts. Copermittees should continue to identify these options and incorporate them into their outreach strategies as appropriate.

B. FOCUSED PROGRAM ELEMENTS

This section provides more detailed information on each of the six target audiences that must be addressed in accordance with Permit section F.4. Copermittees' outreach programs should provide a focused educational component to effectively concentrate efforts on each of these identified audiences. As discussed previously, these activities should focus where possible on activities, sources, areas, and pollutants considered by the Copermittee to be high priority. Targeted pollutant sources should be classified and prioritized by threat to water quality and other relevant factors provided in the Permit and elsewhere⁵. Outreach tools and methods should be specifically tailored to each of these audiences based on a clear understanding of the characteristics of these groups, the advantages and disadvantages of the methods selected, and the desired outcomes.

1. General Residential Outreach

Copermittees must develop and implement an education program to increase the knowledge and change the behaviors of residents, schoolchildren and the population at large. As with other areas addressed by the Permit, numerous residential activities have the potential to contribute to urban runoff pollution. Examples of residential pollutants and activities include household hazardous wastes, litter and debris, residential and charity car washing, pool and spa care, auto repair, lawn maintenance, pet waste, home improvement projects, and on-site domestic sewage treatment systems. Potential sources are discussed in more detail in the Copermittees' Existing Residential Areas Model Program.

(a) *Specific Target Audiences.* Copermittees should utilize a general stormwater message to raise awareness and promote environmentally friendly behaviors, but should consider the incorporation of specific content which considers the relative contribution to stormwater pollution of particular target audiences. With respect to the general residential population, Permit section F.4. identifies two focus areas; (1) schools, and (2) the general residential population. Within each, specific audiences and sub-populations may be considered for inclusion in the Copermittees' programs. Selection of these audiences will in turn determine the types of outreach tools and approaches to be utilized.

- (1) Schools. San Diego County is home to 42 school districts, 590 public schools, and more than 470,000 students. Students, teachers, administrators, and other employees should be a primary focus of Copermittee educational efforts.
 - i. Schoolchildren / Students. Students are eager to learn about the world around them. Students typically serve as trendsetters by bringing home information to parents and carrying out activities learned in the classroom as "the right thing to do." Pollution prevention classroom education that is reinforced year after year can change the behaviors of future generations. Copermittee programs should focus on schoolchildren as the focal point of efforts to produce long-term behavioral changes. Reinforced knowledge of stormwater pollution issues through elementary, junior high, high school and college can establish a foundation for incorporating these changes as a normal part of a person's lifestyle.

⁵ Prioritization of these activities is discussed in greater detail in the Model Program guidance corresponding to each of these Permit elements.

- ii. Administrators / Employees. Understanding of the concepts of stormwater pollution should begin with the administration at local schools. Not only can administrators conceptualize the areas in which stormwater pollution fits into classroom education, they are responsible for basic compliance with stormwater regulations. Thus, knowledge of how stormwater pollution occurs will assist schools in their delegation of grounds maintenance duties, regulation of activities on school grounds, student littering and monitoring of potential pollution on parking lots.
 - iii. Grounds Maintenance / Janitorial Staff. Under guidance from the administration, maintenance and janitorial staff should be educated as to how they may contribute to stormwater pollution and which BMPs should be implemented to prevent storm water pollution. Grounds maintenance staff should be regularly trained and given guidance on pollution prevention measures. (Note: School Administrators, Employees, Grounds Maintenance and Janitorial Staff also fall under the Quasi-Government target audience description.)
- (2) General Residential Population. There are currently more than 2.9 million people in the San Diego region (Table 3). Developing and implementing effective programs to change the behaviors of the populace will require a detailed understanding of the characteristics and variability of the overall population and specific sub-populations within the Copermittee's jurisdiction. Demographic information on these populations is available from the San Diego Association of Governments (SANDAG). Much of this information can be downloaded from their website (www.sandag.org).

Within the residential population, a number of general and specific audiences may be considered both as targets for behavioral change and/or as vehicles for information dissemination. These include the following.

- i. Individual residents. Many residents are unaware of the contribution they make to stormwater pollution in their daily lives. Providing basic information to residents about pollution sources and solutions to these problems should be a priority for Copermittees.
- ii. Homeowners Associations. Coordination with local Homeowners Associations can be an effective way of educating residents about the pollution sources in and around their homes.
- iii. Rental Units. Renters may often be a more challenging target audience to reach than homeowners. The need to address apartment complexes and other rental units should be considered during the design of the Copermittee's outreach strategy. Educating property owners and managers can be an important step toward achieving increased compliance from tenants. Copermittees should educate managers about the various areas in which their renters contribute to storm water pollution and the types of BMPs that can be implemented to reduce these impacts.

Table 3: 2000 Population Estimates by Jurisdiction

Jurisdiction	Estimated 2000 Population
Carlsbad	82,030
Chula Vista	174,319
Coronado	24,673
Del Mar	5,391
El Cajon	96,627
Encinitas	62,060
Escondido	127,813
Imperial Beach	29,180
La Mesa	59,210
Lemon Grove	25,936
National City	55,447
Oceanside	160,753
Poway	49,287
San Diego	1,277,168
San Marcos	53,938
Santee	58,342
Solana Beach	14,360
Vista	85,659
Unincorporated	469,275
Total	2,911,468

Source: San Diego Association of Governments [Data Warehouse](#), 2001

- iv. Pet Owners. Household pets can be significant contributors to stormwater pollution. Pet owners should be educated on how pet waste contributes to storm water pollution and their obligation to ensure that these wastes are not left on city streets, parks and other areas.
- v. Community Groups. An effective means of reaching concerned citizens is to educate local community groups (e.g. service, political, civic and business groups). By hosting presentations or informal chat sessions citizens can learn more about the specific measures they can take to reduce storm water pollution, and can ask questions or raise concerns directly to staff.
- vi. Do-It-Yourselfers. Residents who engage in home improvement projects should be educated about the various ways in which the activities and materials they use can contribute to storm water pollution. By partnering with retailers such as nurseries and home improvement stores, Coopermittees can place stormwater materials where members of the public go to purchase materials and supplies for projects.
 - Gardeners
Using excessive amounts of pesticides and fertilizers during landscape maintenance can contribute nutrients, such as nitrogen and phosphorus, and organophosphate and carbamate pesticides into stormwater. Toxic materials can damage aquatic life and nutrients can result in excessive algae growth in waterways, leading to cloudiness and a reduced level of dissolved oxygen available to aquatic life. In addition, unionized ammonia (nitrogen form) can kill fish. Residents who engage in gardening activities are often unaware

of the pollution problems associated with fertilizers, pesticides, leaf litter and sedimentation that can occur with improper BMPs. Gardeners should be educated about the proper timing of pesticide and fertilizer application (e.g. no application before a rain event or routine watering). Additionally, gardeners should be aware of the problems which occur from unplanted slopes (e.g. sedimentation) and the pollution created from leaf litter blown, swept or washed into the storm drain system. Coordinating public gardening presentations and workshops with the San Diego Master Gardener's Program may be an effective means of utilizing existing resources to educate residents on ways to minimize pollution from gardening activities.

- Do-it-yourself Painters

Residents who do their own painting should be encouraged to wash their paint brushes in a sink which discharges water to the sanitary sewer system and should be informed of the proper disposal of excess paints and thinners (e.g. at a hazardous waste collection site).

- Do-It-Yourself Home Remodelers and Builders

Citizens who engage in building activities must be educated about ways to keep debris away from streets and storm drains (e.g., covering materials with plastic tarps, not leaving exposed dirt piles in the street and sweeping regularly to prevent sawdust or other materials from entering storm drains).

- Automotive Hobbyists

Copermittees should educate residents about the proper disposal of used motor oil (e.g. hazardous waste collection sites or auto parts stores which accept used motor oil). Additionally, citizens should be educated in spill prevention, spill cleanup, and conducting repairs indoors where possible. They should also be encouraged to properly manage and dispose of automotive wastes.

(b) Specific Content. The Permit requires that Copermittees consider and include where appropriate each of the following types of content in their general residential outreach program activities.

(1) Legal and Regulatory Requirements

- o State and Federal water quality laws
- o Requirements of local municipal permits and ordinances

(2) Watershed and Water Quality Concepts

- o Impacts of urban runoff on receiving waters
- o Watershed concepts
- o Distinction between MS4s and sanitary sewers

(3) Best Management Practice (BMP) Information

- o Importance of good housekeeping

- o Pollution prevention and safe alternatives
- o Household hazardous waste collection
- o Recycling
- o Best Management Practices (BMPs): Site specific, structural and source control
- o BMP maintenance
- o Non-stormwater disposal alternatives
- o Pet and animal waste disposal
- o Proper solid waste disposal
- o Equipment and vehicle maintenance and repair
- o Green waste disposal
- o Integrated pest management
- o Native vegetation
- o Proper disposal of boat and recreational vehicle waste
- o Traffic reduction, alternative fuel use
- o Water conservation
- o Residential and charity car washing

(4) Public and Community Resource Information

- o Public reporting mechanisms
- o Public reporting information services
- o Community activities

While this provides a starting point for designing specific program content, Copermittees should endeavor to tailor program content to appropriately reflect each of the activities and populations they consider to be priorities. Copermittees may also consult the Existing Residential Areas Element Guidance for additional information on priority activities for which educational content will need to be developed.

(c) Tools and Approaches. There is no single best method for educating the public on stormwater quality issues. A multi-media approach should be pursued which appropriately reflects the particular targets, priorities and Copermittee objectives.

2. Municipal Departments and Personnel

The types of activities conducted at municipal facilities are often similar to those at construction sites, and commercial and industrial facilities. A variety of pollutants may be discharged as a result of these activities. Examples include pesticides (including herbicides, insecticides and rodenticides), fertilizers, paints, heavy metals, litter and organic debris, soil, sediment and oils, greases, cigarette butts, and other petroleum hydrocarbons. Permit section F.3.a. describes the minimum requirements of Copermittees with respect to the development of an overall program to prevent or reduce the introduction of these and other pollutants into runoff from municipal land use areas and activities. Section F.4. describes the education and training requirements that Copermittees must provide to municipal personnel in support of these directives.

(a) Specific Target Audiences. Education and training should be provided to employees to appropriately reflect their particular job responsibilities. The Copermittee's training program should closely reflect the requirements of Permit section F.3.a. This section requires that at least the following types of municipal areas and activities be

considered high priority:

- o Roads, streets, highways, and parking facilities,
- o Flood management projects and flood control devices,
- o Areas tributary to Clean Water Act section 303(d) listed water bodies or discharging to environmentally sensitive areas,
- o Municipal waste facilities,
- o Municipal airfields, and
- o Other municipal areas and activities determined by the Copermittee to contribute a significant pollutant load to the MS4⁶.

Training should be targeted to employees engaged in activities related to these activities (e.g., road maintenance crews, etc.), as well as other activities the Copermittee determines to be a priority.

(b) Specific Content. The Permit requires that Copermittees consider and include where appropriate each of the following types of content in their municipal facilities training activities.

(1) Legal and Regulatory Requirements

- o State and Federal water quality laws
- o Requirements of local municipal permits and ordinances
- o Lawful disposal of catch basin and other MS4 cleanout wastes
- o California's Statewide General Industrial NPDES Permit
- o California's Statewide General NPDES Construction Permit
- o SDRWQCB's General NPDES Permit for Groundwater Dewatering
- o 401 Water Quality Certification by the SDRWQCB
- o Statewide General NPDES Utility Vault Permit
- o SDRWQCB Waste Discharge Requirements for Dredging Activities
- o Local requirements beyond statewide general permits
- o Federal, state and local water quality regulations that affect development projects
- o Potable water discharges to the MS4

(2) Watershed and Water Quality Concepts

- o Impacts of urban runoff on receiving waters
- o Watershed concepts
- o Distinction between MS4s and sanitary sewers
- o Water quality impacts associated with land development

(3) Best Management Practice (BMP) Information

- o Importance of good housekeeping
- o Pollution prevention and safe alternatives
- o Household hazardous waste collection
- o Recycling

⁶ See the Municipal Facilities Model Program for more a detailed discussion of priority municipal facilities and minimum requirements.

- o Best Management Practices (BMPs): Site specific, structural and source control
 - o BMP maintenance
 - o Non-stormwater disposal alternatives
 - o Pet and animal waste disposal
 - o Proper solid waste disposal
 - o Equipment and vehicle maintenance and repair
 - o Green waste disposal
 - o Integrated pest management
 - o Native vegetation
 - o Proper disposal of boat and recreational vehicle waste
 - o Traffic reduction, alternative fuel use
 - o Water conservation
 - o Residential and charity car washing
- (4) Public and Community Resource Information
- o Public reporting mechanisms
 - o Public reporting information services
 - o Community activities
- (5) Employee Training Information
- o Basic urban runoff training for all personnel
 - o Additional urban runoff training for appropriate personnel
 - o Illicit Discharge Detection and Elimination observations and follow-up during daily work activities
 - o Water quality awareness for Emergency / First Responders
 - o How to conduct a storm water inspection
 - o Alternative materials and designs to maintain peak runoff values
 - o Preventive maintenance
 - o How to do your job and protect water quality
 - o De-chlorination techniques
 - o Hydrostatic testing
 - o Spill response, containment and recovery

Additionally, for employees involved in the management of pesticides, herbicides, and fertilizers, training and education should also specifically address the following minimum BMP requirements as per Permit section F.3.a.(6):

- o Educational activities, permits, certifications, and other measures for municipal applicators,
- o Integrated pest management measures that rely on non-chemical solutions,
- o The use of native vegetation,
- o Schedules for irrigation and chemical application, and
- o The collection and proper disposal of unused pesticides, herbicides, and fertilizers.

While most employees will likely receive basic urban runoff training to increase their general awareness of stormwater issues, others should receive more intensive

classroom training geared to their specific responsibilities. Permit section F.3.a.(1) also requires that training emphasize pollution prevention methods where applicable. Copermittees may consult the Municipal Facilities Element Program Guidance for further information on BMPs.

(c) Approaches and Tools. Depending on the particular audience, education may be provided to municipal employees via a number of approaches. Examples include classroom training, paycheck inserts, E-mail and Newsletters. Focused training to key personnel should consist of classroom lectures, on-the job safety lectures, and/or refresher sessions as appropriate. Training should focus on the incorporation of BMPs into standard operating procedures for municipal facilities and activities. Brochures or other written materials may also be useful in documenting and conveying specific content regarding required and/or recommended BMPs. Copermittees are encouraged to review BMP content at least annually to ensure its adequacy and proper implementation. For more specific BMP information for municipal personnel, Copermittees should refer to the Municipal Facilities Model Program.

2. Construction and Development

Permit section F.1. establishes requirements for Copermittees to address the permanent, post-construction impacts of new development and significant redevelopment on receiving waters. Section F.2. further establishes requirements for Copermittee programs to address the impacts of these and other projects during the construction phase. Construction and development activities can alter natural drainage patterns and contribute pollutants to the stormwater conveyance system. Improperly managed stormwater runoff from construction sites can be a significant source of water pollution causing habitat disturbance and destruction, decline in wildlife, and restrictions on water use and enjoyment of these resources. Pollutants of concern typically associated with these activities include soil, sediment, debris, hazardous materials, concrete and slurry, wood products, recyclable materials. Because of the significant overlap in these target communities, education and training requirements for each are discussed together in this section.

(a) Specific Target Audiences. Several specific audiences within the construction community should be considered for inclusion in the Copermittees' programs. This should minimally comply with Permit section F.2.j. which requires that at least the types of audiences listed in Table 4 below be addressed:

Table 4: Required Target Audiences

Required Target Audience	Construction Activities		Development	
	Internal	External	Internal	External
Municipal Staff	X		X	
Project Applicants		X		X
Contractors		X		X
Developers		X		X
Property Owners		X		X
Community Planning Groups				X
Other Responsible Parties		X		

Copermittees should add specificity to these lists and determine where their efforts will be most effective.

(b) Specific Content. Permit sections F.1.d. and F.2.j. establish minimum subject matter that must be addressed by Copermittees in training both internal staff and external project applicants. This is summarized in Table 5. Focused education should inform developers about stormwater management activities associated with project development and construction. Targeted construction sources for focused education should be identified. Examples include exposed soil, construction site entrances and exits, slopes, proper storage of construction materials, illicit connections, illegal discharges, proper storage and disposal of wastes, trash and litter, and vehicle washing and equipment maintenance.

An example of content to be included in brochures or other materials targeting construction dischargers would be a description of the required and/or suggested BMPs for project construction, a general description of the Stormwater Management requirements, and copies of pertinent ordinances.

Final content should reflect the priorities and activities of the Copermittee’s Construction and Land Development Activities Programs. Additionally this education component must address each of the elements listed in section III.B.2.(b) above for municipal departments and personnel.

(c) Approaches and Tools. Opportunities for training the construction and development community should focus on assisting regulated parties in complying with stormwater and urban runoff requirements. Training workshops and materials should be geared toward the establishment and implementation of the BMPs associated with their activities, both in the project design and implementation stages. Through education, inspection and enforcement, managers and operators can be educated to incorporate BMPs into their standard operating procedures. Some approaches which may be effective for the construction and development industry include:

- o Distributing educational fliers to construction companies and land development companies,
- o Distributing handouts with BMP information for building and grading permit applicants,
- o Conducting construction and development workshops to educate project supervisors and engineers about stormwater pollution and appropriate BMPs,
- o Educating construction site employees during routine inspections,
- o Providing presentations at individual construction sites for field workers and supervisors, and
- o Providing presentations to trade associations and professional organizations.

Table 5: Required Content by Target Audience

Training / Outreach Topic	Construction Activities		Development	
	Internal	External	Internal	External
Federal, state, and local water quality laws	X	X	X	X
Required federal, state, and local permits				X
The connection of construction and/or land development to water quality impacts	X	X	X	
Water quality impacts of urbanization				X
Methods for minimizing impacts to receiving waters	X	X	X	X
How erosion can be prevented	X	X		
Other applicable topics listed in Permit section F.4.	X	X		

Outreach should generally encourage site owners to address potential water quality problems early in the site design process, and to utilize a variety of BMPs such as scheduling, erosion and sediment control, flow controls, site management, and materials and waste management. Educational materials should be made readily available at public counters for developers and contractors to pick up when requesting project approvals and construction permits.

3. Commercial and Industrial Businesses

Permit section F.3.b. establishes requirements for Copermittees to establish and enforce minimum requirements for industrial facilities. Section F.3.c. establishes similar requirements for commercial facilities. As with construction and development activities, these two target communities overlap significantly, and the education and training requirements for each are therefore discussed together in this section. For both, Copermittee education and training activities must be established which appropriately reflect the priorities and minimum requirements established in the Permit.

Industrial and commercial facilities cover a diverse arena of activities and practices, but with minor exceptions, educational approaches for both will be very similar. The activities, pollutants, and sources associated with commercial and industrial facilities include wash-water, oil and grease, automotive fluids, fuel, solvents, detergents,

degreasers, tires, lead-acid batteries, paint, stucco, cement slurry, cement / concrete / mortar, garbage, food wastes and grease, bottles, mobile carpet and upholstery wastes, mobile petgroomers waste, green waste, pesticides, herbicides, fertilizers, large animal wastes, chlorinated or other treated water, and chemical toilet wastes.

(a) Specific Target Audiences. Several specific audiences within the industrial and commercial business community should be considered for inclusion in the Copermittees' programs. The Permit requires that Copermittees consider each of the following types of commercial businesses and activities as high priority:

- o Automobile mechanical repair, maintenance, fueling, or cleaning;
- o Airplane mechanical repair, maintenance, fueling, or cleaning;
- o Boat mechanical repair, maintenance, fueling, or cleaning;
- o Equipment repair, maintenance, fueling, or cleaning;
- o Automobile and other vehicle body repair or painting;
- o Mobile automobile or other vehicle washing;
- o Automobile (or other vehicle) parking lots and storage facilities;
- o Retail or wholesale fueling;
- o Pest control services;
- o Eating or drinking establishments;
- o Mobile carpet, drape or furniture cleaning;
- o Cement mixing or cutting;
- o Masonry;
- o Painting and coating;
- o Botanical or zoological gardens and exhibits;
- o Landscaping;
- o Nurseries and greenhouses;
- o Golf courses, parks and other recreational areas/facilities;
- o Cemeteries;
- o Pool and fountain cleaning;
- o Marinas;
- o Port-a-Potty servicing;
- o Other commercial sites/sources that the Copermittee determines may contribute a significant pollutant load to the MS4;
- o Any commercial site or source tributary to a Clean Water Act section 303(d) impaired water body, where the site or source generates pollutants for which the water body is impaired; and
- o Any commercial site or source within or directly adjacent to or discharging directly to a coastal lagoon or other receiving water within an environmentally sensitive area.

Permit section F.3.b.(3) additionally requires that at least the following types of industrial facilities to be addressed by Copermittee programs:

- o Industrial facilities that are subject to 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA),
- o Industrial facilities tributary to a Clean Water Act section 303 (d) impaired water body, where a facility generates pollutants for which the water body is impaired
- o Industrial facilities within or directly adjacent to or discharging directly to coastal lagoons or other receiving waters within environmentally sensitive areas,
- o Facilities subject to the statewide General Industrial Permit; and

- o All other industrial facilities that the Copermittee determines are contributing significant pollutant loading to its MS4, regardless of whether such facilities are covered under the statewide General Industrial Permit or other NPDES permit.

(b) Specific Content. The specific content required by the Permit for these target audiences is identical to that described for municipal facilities and activities in section III.B.2.(b) above. In addition to meeting these minimum requirements for educational content, education and training should be provided to owners, operators, and employees to appropriately reflect their particular businesses and job responsibilities. Overall, the education program should closely reflect the requirements of Permit sections F.3.b. and F.3.c. and the Jurisdictional URMP elements developed pursuant to those sections. Copermittees should refer to the Industrial and Commercial Activities Model Program Guidances for more detail on the specific outreach content needed to support these activities.

(c) Approaches and Tools. A key to industrial and commercial education is to provide both general and specific information through as many avenues as possible. Pollutant sources should also be identified to target educational strategies most effectively. A variety of media and approaches are appropriate for commercial and industrial audiences. For example, both general and specific brochures can be developed for dissemination during inspections to facilitate an interactive learning process. Inspectors should be trained to emphasize education as a means of gaining compliance. In addition, educational materials can be provided to permitted and unpermitted businesses through mail-outs, workshops, and presentations to trade associations. Other avenues include business licensing, mailouts, trade and merchant associations, and public counters and lobbies. Conferences and workshops should also be considered for businesses or industries requiring specific training or education.

To reach the greatest possible number of owners and operators, Copermittees should consider incorporating at least the following types of individuals and groups into their overall outreach approach for commercial and industrial facilities:

- (1) Trade Associations. An effective way of distributing industry specific BMP information is through trade associations. These associations often conduct meetings or seminars and publish newsletters, magazines, websites or other forms of media to reach members.
- (2) Merchant Associations. General information can be provided to merchant associations for distribution to a broad range of member businesses. These associations are either geographically or politically oriented and hold regular meetings and often provide newsletters, magazines, or websites to members.
- (3) Specific / Individual Industrial Facilities. On-site training can be an effective means of educating management and employees. Training can be conducted during routine inspections or through separately scheduled sessions to satisfy or supplement employee training requirements. On-site training not only helps individual facility operators understand their responsibilities, but allows for constructive exchange of ideas and solutions with Copermittee staff.
- (4) Property Management. Educating property owners or managers to understand stormwater regulations and how they affect their tenants can assist Copermittees

in achieving overall site compliance. Property managers and owners are usually responsible for contracting landscaping and trash hauling services. Educational materials can also be disseminated to tenants through property managers.

- (5) Franchise Chain Owners. Since many franchise facilities are designed and operated similarly, educating chain owners can be a quick and effective method of providing the same BMP information to more than one location simultaneously.
- (6) Employees / Supervisors. Employees and supervisors are among the most important target groups for the Copermittees' industrial and commercial education programs. Employees should to be educated on the use of proper BMPs for their specific work activities, and supervisors should additionally be educated to monitor the practices of their employees.

3. Quasi-Governmental Agencies

Quasi-Governmental Agencies / Districts. Quasi-governmental entities include a variety of agencies and districts which may be outside of the current regulatory purview of Copermittees. These include special districts, school districts and campuses, water agencies, utility districts and service providers. Many of these are similar in structure and function to government agencies, while others more closely resemble commercial businesses. Depending on the particular type of entities included, it may be possible to utilize shared materials and workshops, or to use existing approaches with minor modification. Regardless of whether Copermittees develop separate and distinct programs, opportunities to utilize shared resources for quasi-governmental, municipal, and commercial / industrial audiences should be considered. Partnerships with quasi-government entities can also be sought by Copermittees for materials distribution.

(a) *Specific Target Audiences*. The Permit does not specify the particular types of quasi-governmental entities that must be addressed by the Copermittees' education programs, but educational institutions, water districts, and sanitation districts are listed as examples. Since these entities are not addressed elsewhere in the Permit (e.g., the Copermittees are required to educate rather than regulate them), the intent of the Permit appears to be to address those entities over which the Copermittees do not have regulatory authority. Since some of these parties are addressed in the Phase II Stormwater Regulations, Copermittees may look to these regulations for further clarification on the specificity of potential target audiences.

(b) *Specific Content*. Permit sections F.4.a. and F.4.b. specify the minimum content to be considered for education of quasi-governmental agencies. This content is identical to that described above for municipal, construction, commercial and industrial target audiences. Specific program content will ultimately depend on the audiences selected for inclusion in the Copermittees' programs. Once these determinations are made, Copermittees should model the specific content on these other elements as appropriate.

(c) *Approaches and Tools*. As above, outreach approaches and tools will be audience-specific and should initially be modeled on other similar program elements and modified as appropriate.

C. RECOMMENDED COPERMITTEE COLLABORATION

As previously described, Copermittee collaboration can be beneficial in increasing consistency between efforts at the regional and watershed scales, and in providing opportunities for cost savings which might not otherwise be available to individual Copermittees. Shared efforts can also make outreach media and approaches available to Copermittees that might otherwise be beyond the scope of their individual outreach budgets. Collaborative programs do not relieve Copermittees of their obligation to develop and implement local programs. But, in combination, individual and shared programs can often provide the most efficient and effective use of limited Copermittee resources. The degree to which collaborative programs or efforts are utilized must ultimately be determined by individual Copermittees within the context of their own program priorities. However, some general directions can and should be considered. With this in mind, the Model Outreach Technical Workgroup has developed the following recommendations with respect to ongoing Copermittee collaboration:

1. Develop and Implement a Strategy for Measuring Outreach Program Effectiveness

Permit section F.4. requires that Copermittees measurably change the knowledge and behavior of target populations. To demonstrate compliance with this directive, Copermittees must develop methods for measuring baseline conditions and the changes achieved by their programs over time. Permit section F.7. further requires that Copermittees develop a long term effectiveness assessment strategy as part of their Jurisdictional URMP. The measurement of program effectiveness is further discussed in Section IV, Program Effectiveness.

To begin addressing the need for measurability of outreach efforts, a survey or combination of surveys should be conducted to establish a baseline of awareness of the general population. This baseline will serve as a starting point from which to measure increases in awareness. Survey results will additionally allow Copermittees to develop outreach strategies which best address the priorities and needs of their communities. Over time, Copermittees' measurement strategies should also include subsequent surveys and evaluations which can be compared to the original baseline information.

2. Establish a Copermittee Education and Outreach Subcommittee

An Education and Outreach Subcommittee of the Copermittees' Management Committee should be established to develop a recommended annual budget and scope-of-work for shared regional outreach programs. Examples of issues which could be addressed include the measurement of program effectiveness, development of a regional broadcast media program, development of a regional outreach theme or regional training tools and/or workshops. The Subcommittee should also provide an ongoing forum for sharing resources, disseminating materials, developing collaborative programs as needed, and promoting the regional application of shared resources such as a stormwater hotline.

3. Develop Regionally Focused Outreach Activities

Regional activities should be developed which complement rather than replace jurisdictionally based outreach programs. To the extent that some shared costs may be

required rather than optional, these programs must also consider the degree to which individual Copermittees are willing and able to participate. Although collaboration is possible on a number of levels, it currently makes the most sense to develop and implement regionally focused outreach activities which promote a broad-based and consistent message to the general public. The use of existing campaigns should be encouraged since they may already be familiar to residents. However, if existing campaigns are not available for the Copermittees to freely use, a campaign should be pursued to achieve a familiar and recognizable theme. Broadcast media such as television and radio are approaches which may be particularly suitable for Copermittee collaboration.

Section IV. Program Effectiveness and Evaluation

As previously discussed, Permit section F.4. requires each Copermittee to implement an Education Component to measurably increase the knowledge of the target communities regarding MS4s, impacts of urban runoff on receiving waters, and potential BMP solutions for the target audience; and to measurably change behavior of the target communities and thereby reduce pollutant releases to MS4s and the environment. Assessing the performance of these activities is critical to the successful implementation of a comprehensive stormwater pollution prevention program. Permit Section F.7.a. also requires that each Copermittee develop a long-term strategy for assessing the effectiveness of its individual Jurisdictional URMP. Numerous measures can be utilized in the evaluation of education and outreach programs. Table 6 illustrates some examples.

Table 6: Methods of Measurement

Element	Effects	Measurement
Storm Drain Stenciling Programs	Stenciled drains can directly cut down pollutants discharged Stewardship for neighborhood	Number of requests for information
Community Events Booths	Raising awareness and encouraging stewardship	Number of events participated in Public interest in the booth or materials Type of materials distributed
Stormwater Website	Feedback from visitors	Number of hits Features of interest
Media Campaigns	Feedback from viewers/listeners	Number of impressions Frequency of message
Multi-ethnic Outreach	Feedback from visitors	Number of events participated Materials distributed
Materials for Pest Control Management	New materials developed Supporting participants Master Gardener programs	Number of display sites Number of requests for alternative IPM information Master Gardener Evaluations Number of supporting participants
Public Opinion Surveys	Survey results	Survey process
School Programs	Results of tests Response from teachers and students	Number of schools participating Test results Response from teachers and students
Public Officials/City Officials	Participation in pollution prevention week events Participation in Clean Water Days	Number of Proclamations Support from mayors, boards or councils
Workshops/Seminars	Response from managers Partnerships with businesses and associations	Number of Participants Number of sessions held
Department Partnerships	Partnerships with departments and employee representatives	Number of departments implementing BMPs Number of departments incorporating stormwater messages in their materials
Statewide and Regional Outreach	Participation in Statewide Outreach Campaigns	Number of meeting hosted Meetings participation Presentations to the State Task Force
Training Programs	Response from managers, supervisors, trade associations	Number of participants Test results Questionnaires
Business or Site Inspections	Response from managers, owners, trade associations	Compliance Number of violations or citations issued

The effectiveness of BMPs, whether considered individually or collectively, is ultimately measured over time by changes in the pollutant levels found in downstream receiving waters. Information collected through the Copermittees' wet and dry weather monitoring programs will be useful in identifying trends and assessing the effectiveness of their programs. However, Copermittees will likely not be able to rely on this data to assess the effectiveness of individual program elements or BMPs that comprise their overall program. The basis for measuring the overall effectiveness of Copermittee programs must therefore be a collective assessment of the effectiveness of the BMPs implemented within that program. As such, specific measures should be developed and tracked at both the program and specific BMP level. A suite of measures, which allows for assessment on a variety of levels and time frames, should therefore be developed. These measures are generally divided into two types, direct and indirect. With respect to both direct and indirect measures, baseline conditions must be defined. All future comparisons showing improvements will be made relative to these baseline conditions. Since the largest incremental improvements in receiving water quality are often realized at the beginning of an implementation program, these improvements cannot be adequately measured in the absence of a well-defined baseline. It may also be necessary to conduct periodic surveys to assess the effectiveness of public education efforts.

A. Direct Measures

Direct measures are those that focus on characterizing the quality of water bodies receiving discharges from Copermittee MS4s or on assessing other parameters with an immediate or well-established nexus to changes in the quality of those waters. Examples of direct measurement include receiving waters monitoring, estimation of pollutant loadings from specified areas (catchments, municipalities, watersheds, etc.), and focused evaluations of structural BMPs. Direct measures generally include actual measurement or quantification of pollutants (e.g., reductions in concentrations of chemicals of concern, etc.) or of the amount of materials extracted or diverted by a BMP (e.g, through household hazardous waste collection, etc.).

B. Indirect Measures

Because direct measures can be difficult and expensive to obtain, and because they often require long periods of time to fully assess, a variety of indirect measures are generally used to evaluate stormwater program effectiveness. Indirect measures are based on the assumption that the use of specific program activities is effective in decreasing stormwater pollution, and therefore in protecting water quality. Examples of indirect measures may include number of brochures distributed, number of participants in a workshop or number of classes participating in class presentations. Indirect measures are particularly important for assessing the performance of education and outreach activities. Indirect measures should be pursued in combination with more broadly focused direct measures to allow Copermittees to prioritize limited resources, to conduct meaningful assessments on intermediate time frames, and to focus on particular BMPs and program elements.

Although behavior may be difficult to measure, knowledge and awareness may be easier to measure with use of surveys. The results of surveys can provide enough information

for the establishment of a baseline. Successive surveys can be conducted to assess program effectiveness. Depending on the outcome of follow up surveys, program delivery or materials can be updated to improve the effectiveness of outreach and education program.

Appendix A. Permit Excerpts Relating to Education and Outreach

F.1.d. Conduct Education Efforts Focused on New Development and Redevelopment

(1) Internal: Municipal Staff and Others

Each Copermittee shall implement an education program to ensure that its planning and development review staffs (and Planning Boards and Elected Officials, if applicable) have an understanding of:

- (a) Federal, state, and local water quality laws and regulations applicable to development projects;
- (b) The connection between land use decisions and short and long-term water quality impacts (i.e., impacts from land development and urbanization); and
- (c) How impacts to receiving water quality resulting from development can be minimized (i.e., through implementation of various source control and structural BMPs).

(2) External: Project Applicants, Developers, Contractors, Property Owners, Community Planning Groups

As early in the planning and development process as possible, each Copermittee shall implement a program to educate project applicants, developers, contractors, property owners, and community planning groups on the following topics:

- (a) Federal, state, and local water quality laws and regulations applicable to development projects;
- (b) Required federal, state, and local permits pertaining to water quality;
- (c) Water quality impacts of urbanization; and
- (d) Methods for minimizing the impacts of development on receiving water quality.

F.2.j. Education Focused on Construction Activities (Construction)

(1) Internal: Municipal Staff

Each Copermittee shall implement an education program to ensure that its construction, building, and grading review staffs and inspectors have an understanding of:

- (a) Federal, state, and local water quality laws and regulations applicable to construction and grading activities.
- (b) The connection between construction activities and water quality impacts (i.e., impacts from land development and urbanization).
- (c) How erosion can be prevented.
- (d) How impacts to receiving water quality resulting from construction activities can be minimized (i.e., through implementation of various source control and structural BMPs).
- (e) Applicable topics listed in section F.4. of this Order.

(2) External: Project Applicants, Contractors, Developers, Property Owners, and other Responsible Parties

Each Copermittee shall implement an education program to ensure that project applicants, contractors, developers, property owners, and other responsible parties have an understanding of the topics outlined in section F.2.j.1. above of this Order.

F.3.a.(6) Management of Pesticides, Herbicides, and Fertilizers (Municipal)

The Copermittees shall implement BMPs to reduce the contribution of pollutants associated with the application, storage, and disposal of pesticides, herbicides and fertilizers from municipal areas and activities to MS4s. Important municipal areas and activities include municipal facilities, public rights-of-way, parks, recreational facilities, golf courses, cemeteries, botanical or zoological gardens and exhibits, landscaped areas, etc.

Such BMPs shall include, at a minimum: (1) educational activities, permits, certifications and other measures for municipal applicators and distributors; (2) integrated pest management measures that rely on non-chemical solutions; (3) the use of native vegetation; (4) schedules for irrigation and chemical application; and (5) the collection and proper disposal of unused pesticides, herbicides, and fertilizers.

F.4. Education Component

Each Copermittee shall implement an Education Component using all media as appropriate to (1) measurably increase the knowledge of the target communities regarding MS4s, impacts of urban runoff on receiving waters, and potential BMP solutions for the target audience; and (2) to measurably change the behavior of target communities and thereby reduce pollutant releases to MS4s and the environment. At a minimum the education component shall address the following target communities:

- Municipal Departments and Personnel
- Construction Site Owners and Developers
- Industrial Owners and Operators
- Commercial Owners and Operators
- Residential Community, General Public, and School Children
- Quasi-Governmental Agencies/Districts (i.e., educational institutions, water districts, sanitation districts, etc.)

F.4.a. All Target Communities

At a minimum the Education Program for each target audience shall contain information on the following topics where applicable:

- State and Federal water quality laws
- Requirements of local municipal permits and ordinances (e.g., storm water and grading ordinances and permits)
- Impacts of urban runoff on receiving waters
- Watershed concepts (i.e., stewardship, connection between inland activities and coastal problems, etc.)
- Distinction between MS4s and sanitary sewers
- Importance of good housekeeping (e.g., sweeping impervious surfaces instead of hosing)
- Pollution prevention and safe alternatives
- Household hazardous waste collection
- Recycling
- BMPs: Site specific, structural and source control

- BMP maintenance
- Non-storm water disposal alternatives (e.g., all wash waters)
- Pet and animal waste disposal
- Proper solid waste disposal (e.g., garbage, tires, appliances, furniture, vehicles)
- Equipment and vehicle maintenance and repair
- Public reporting mechanisms
- Green waste disposal
- Integrated pest management
- Native vegetation
- Proper disposal of boat and recreational vehicle waste
- Traffic reduction, alternative fuel use
- Water conservation

F.4.b. Municipal, Construction, Industrial, Commercial, and Quasi-Governmental (educational institutions, water districts, sanitation districts, etc.) Communities

In addition to the topics listed in F.4.a. above, the Municipal, Construction, Industrial, Commercial, and Quasi-Governmental (Educational Institutions, Water Districts, Sanitation Districts) Communities shall also be educated on the following topics where applicable:

- Basic urban runoff training for all personnel
- Additional urban runoff training for appropriate personnel
- Illicit Discharge Detection and Elimination observations and follow-up during daily work activities
- Lawful disposal of catchbasin and other MS4 cleanout wastes
- Water quality awareness for Emergency/First Responders
- California's Statewide General NPDES Permit for Storm Water Discharges Associated with Industrial Activities (Except Construction).
- California's Statewide General NPDES Permit for Storm Water Discharges Associated with Construction Activities
- SDRWQCB's General NPDES Permit for Groundwater Dewatering
- 401 Water Quality Certification by the SDRWQCB
- Statewide General NPDES Utility Vault Permit (NPDES No. CAG990002)
- SDRWQCB Waste Discharge Requirements for Dredging Activities
- Local requirements beyond statewide general permits
- Federal, state and local water quality regulations that affect development projects
- Water quality impacts associated with land development
- Alternative materials & designs to maintain peak runoff values
- How to conduct a storm water inspection
- Potable water discharges to the MS4
- Dechlorination techniques
- Hydrostatic testing
- Spill response, containment, & recovery
- Preventive maintenance
- How to do your job and protect water quality

F.4.c. Residential, General Public, School Children Communities

In addition to the topics listed in F.4.a. above, the Residential, General Public, and School Children Communities shall be educated on the following topics where applicable:

- Public reporting information resources

- Residential and charity car-washing
- Community activities (e.g., “Adopt a Storm Drain, Watershed, or Highway” Programs, citizen monitoring, creek/beach cleanups, environmental protection organization activities, etc.)

F.5. Illicit Discharge Detection and Elimination Component

F.5.g. Facilitate Public Reporting of Illicit Discharges and Connections - - Public Hotline

Each Copermittee shall promote, publicize and facilitate public reporting of illicit discharges or water quality impacts associated with discharges into or from MS4s. Each Copermittee shall facilitate public reporting through development and operation of a public hotline. Public hotlines can be Copermittee-specific or shared by Copermittees. All storm water hotlines shall be capable of receiving reports in both English and Spanish 24 hours per day / seven days per week. Copermittees shall respond to and resolve each reported incident. All reported incidents, and how each was resolved, shall be summarized in each Copermittee’s individual Jurisdictional URMP Annual Report.

F.5.h. Facilitate Disposal of Used Oil and Toxic Materials

Each Copermittee shall facilitate the proper management and disposal of used oil, toxic materials, and other household hazardous wastes. Such facilitation shall include educational activities, public information activities, and establishment of collection sites operated by the Copermittee or a private entity. Curbside collection of household hazardous wastes is encouraged.

F.6. Public Participation Component

Each Copermittee shall incorporate a mechanism for public participation in the implementation of the Jurisdictional URMP.

F.8. Fiscal Analysis Component

Each Copermittee shall secure the resources necessary to meet the requirements of this Order. As part of its individual Jurisdictional URMP, each Copermittee shall develop a strategy to conduct a fiscal analysis of its urban runoff management program in its entirety. In order to demonstrate sufficient financial resources to implement the conditions of this Order, each Copermittee shall conduct an annual fiscal analysis as part of its individual Jurisdictional URMP Annual Report. This analysis shall, for each fiscal year covered by this Order, evaluate the expenditures (such as capital, operation and maintenance, education, and administrative expenditures) necessary to accomplish the activities of the Copermittee’s urban runoff management program. Such analysis shall include a description of the source(s) of funds that are proposed to meet the necessary expenditures, including legal restrictions on the use of such funds.

H. SUBMITTAL OF JURISDICTIONAL URMP DOCUMENT

The written account of the overall program to be conducted by each Copermittee within its jurisdiction during the five-year life of this Order is referred to as the “Jurisdictional URMP Document”.

1. Individual – Each Copermittee shall submit to the Principal Permittee(s) an individual Jurisdictional URMP document which describes all activities it has undertaken or is

undertaking to implement the requirements of each component of the Jurisdictional URMP section F. of this Order.

a. At a minimum, the individual Jurisdictional URMP document shall contain the following information for the following components:

(1) Construction Component

a. A description of the construction education program and how it will be implemented

[sections H.1.a.(2) through (5) not included]

(6) Education Component

(b) A description of the content, form, and frequency of education efforts for each target community

I. SUBMITTAL OF JURISDICTIONAL URMP ANNUAL REPORT

1. Individual - Each individual Jurisdictional URMP Annual Report shall be a documentation of the activities conducted by each Copermittee during the past annual reporting period. Each Jurisdictional URMP Annual Report shall, at a minimum, contain the following:

a. Comprehensive description of all activities conducted by the Copermittee to meet all requirements of each component of the Jurisdictional URMP section of this Order;

[section F.1-F.3 and F.5-F.8 not included]

F.4. Education Component

b. Each Copermittee's accounting of all:

[section b.(1)-b.(3) not included]

(4) Education efforts conducted.

J. WATERSHED URBAN RUNOFF MANAGEMENT PROGRAM

[section J.1. not included]

2. Each Copermittee shall collaborate with all other Copermittees discharging urban runoff into the same watershed to develop and implement a Watershed Urban Runoff Management Program (Watershed URMP) for the respective watershed. Each Watershed URMP shall, at a minimum contain the following:

[sections J.2.a. through f. not included]

g. A watershed based education program;

Appendix B. Inventory of Education and Outreach Programs

AGENCY	Programs/Topics of Outreach
FEDERAL AGENCIES	
<u>U.S. Forest Service</u>	The goal of the Forest Service Continuing Education (CE-WFRP) Program is to enhance the productivity and effectiveness of professionals whose work involves or relates to management of rare plants, wildlife, and fish habitats. CE-WFRP strives to serve the people who care for the land. The mission of the USDA Forest Service / Cleveland National Forest is achieve quality land management under the sustainable multiple-use concept in order to meet the diverse needs of the people. The Cleveland National Forest, a unit of U.S. Forest Service offers the Project Learning Tree, Wilderness Education and Fire Ecology education programs for students and teachers.
<u>U.S. Fish & Wildlife Service</u>	The mission of the Education and Interpretation Program at Tijuana River National Estuarine Research Reserve is to provide interactive, hands-on, thematic bilingual environmental education to local and regional students, the community, and coastal decision makers through partnerships with local schools, community groups and government agencies to promote and support estuary stewardship by an informed and active citizenry. The educational and interpretation programs will seek to expand high school science programs that connect the Reserve's education and research programs, to develop programs for middle schools students, to plan and implement a long term coastal decision makers education program, and to integrate existing educational programs with watershed coordination.
<u>National Park Service</u>	The National Park Service is responsible for the conservation of the scenery and the natural and historic objects of its parks, unimpaired, for the enjoyment of future generations. Cabrillo National Monument offers educational programs for 3rd through 5th grade school children. They include the history of Cabrillo's 1542 expedition along the California coast; the ecology and adaptation of plants and animals in the tide pool habitat; and Native American uses of plants found in the coastal sage scrub community. A 2nd grade program has been developed for the history of Old Point Loma Lighthouse. These programs are free of charge but require advance reservations. Workshops are available to train educators to lead their students through several programs at the site. The monument also offers programs for the general public throughout the year. They emphasize seasonal occurrences such as gray whale migration from December to February; wildflowers and sage scrub from February to April; and tidepools from December through May.
<u>National Resource Conservation Service</u>	The national Water and Climate Center offers training materials. The Water Quality Resource Assessment Course is offered through the NCRS National Employee Development Center and provides training on the Water Quality Indicators Guide. It is four days in duration and is offered between one and four times a year at various locations. Introduction to Stream Ecological Assessment: The National Water and Climate Center has developed a set of flexible training materials that can be used by State Office or Area personnel to provide training. Several modules support one to two days of training. The Water Quality Monitoring Training course was developed by the NCRS national Employee Development Center in partnership with the NWCC and covers part 1 of the Water Quality Monitoring Field Handbook.
<u>United States Environmental Protection Agency</u>	Region 9's commitment to environmental protection includes providing educational services for educators, students, youth groups and community or environmental organizations. The Office of Communication and Government Relations Division offers a competitive grants program, environmental education publications for classroom use, and a youth awards program. The U.S.-Mexico Border XXI Program is an innovative binational effort which brings together the diverse U.S. and Mexican federal entities responsible for the shared border environment to work cooperatively toward sustainable development through protection of human health and the environment and proper management of natural resources in both countries. EPA's Office of Environmental Education sponsors the National Network for Environmental Management Studies (NNEMS). The NNEMS fellowship program was established in 1986 to encourage college students to pursue environmental careers. The program provides students with environmental research or training experience linked directly to their field of undergraduate or graduate study.
<u>Earth's 911</u>	The Earth's 911 national hotline 1-800-CLENAUP and www.1800CLEANUP.org web site may be included in outreach materials. These resources provide comprehensive information on stormwater and other environmental topics on a statewide and nationwide basis. By entering a zip code, the information for disposal locations and recycling centers can be accessed. This process allows each region to tailor the information to suit their individual needs.

CALIFORNIA STATE AGENCIES

<u>California Environmental Protection Agency</u>	The California Environmental Protection Agency is responsible for coordinating and prioritizing the state's efforts to protect the environment for the health and well-being of all the residents of the state. The Cal-EPA is a member of the California Environmental Education Interagency Network (CEEIN) which links environmental agencies, educators, students and others and provides workshops and outreach programs. They also produce a web site http://ceres.ca.gov which provides information on a wide range of environmental issues in California.
<u>Department of Pesticide Regulation</u>	The California Department of Pest Regulation includes within its programs the surface Water Protection Program, which protects human health and the environment by preventing pesticides from adversely affecting our surface waters. The prevention component includes local outreach to promote cooperation to protect water quality from the adverse effects of pesticides, DPR and the SWRCB signed a management Agency Agreement (MAA). The outreach section of the companion document "The California Pesticide Management Plan for Water Quality", represents part of the Plan's four-stage approach to minimize the potential for pesticide movement to ground and surface waters. The objective of the Education and Training Programs is to increase awareness among pest control advisers, pest control businesses, growers, farm managers, homeowners, and other pesticide users in agricultural and nonagricultural situations regarding water quality issues and reduced-risk practices so that they can help prevent water quality problems. The purpose of the Public Information Programs is to ensure public awareness and coordinate responses to public concerns.
<u>Air Resources Board</u>	The mission of the California Air Resources Board is to oversee and support the efforts of all 34 local and regional air pollution control districts in attaining and maintaining the state's protective, health-based air quality standards, which include mobile, stationary and toxic emissions. The California Air Resources Board offers public information and community outreach programs consistent with its mission to oversee and support all 34 local and regional air pollution control districts statewide.
<u>Department of Toxic Substances Control</u>	The California Department of Toxic Substances Control is responsible for protecting the public and environment from harmful exposure to hazardous substances. The California Department of Water Resources offers public education and community information programs related to the responsible use of water resources for the benefit of the state's residents. The California Department of Toxic Substance Control offers The No Waste Anthology: A Teacher's Guide to Environmental Activities K-12 curriculum plus on-going programs of community awareness and public education.
<u>Integrated Waste Management Board</u>	The California Integrated Waste Management Board works to protect the public health, safety and environment by programs related to waste prevention, waste diversion, recycling, composting, safe waste processing and disposal. The California Integrated Waste Management Board offers waste prevention, reduction, recycling and composting programs and workshops for students and teachers grades K-12. The California Integrated Waste Management Board offers the Closing the Loop (K-6), Earth Resources: Using a Case Study-Oil (7-12), and Project Learning Tree - Solid Waste Module (9-12) curriculum for students and teachers. In addition, staff also provide free technical assistance to schools and school districts interested in setting up a waste reduction program.
<u>Office of Environmental Health Hazard Assessment</u>	The mission of the Office of Environmental Health Hazard Assessment of the California Environmental Protection Agency is to oversee the state's activities as they relate to environmental health hazards to insure the health and safety of state residents. The Office of Environmental Health Hazard Assessment of the California Environmental Protection Agency conducts continuing community education and public information programs dealing with environmental health hazards in the home and workplace.
<u>Department of Water Resources</u>	The California Department of Water Resources creates programs that guide development and management of the state's water resources for the benefit of state residents. The department provides water for municipal, industrial, agricultural and recreational use, and also for fish and wildlife protection enhancement. Public information and community information programs related to the responsible use of water resources for the benefit of state residents is available.
<u>Department of Health: Border Health Office</u>	The mission of the California Border Health Office/San Diego is to promote the health and well-being of border residents by providing health education and health care services through its network of community clinics and providers. The California Border Health Office/San Diego offers health education and health care programs for border residents on a range of topics from proper nutrition for infants to the special health needs of senior citizens.
<u>California Conservation Corps</u>	The mission of the California Conservation Corps is to bring together a diverse group of young men and women to participate in an integrated program of conservation work, community involvement and environmental education for the benefit of the communities they serve. The California Conservation Corps offers young people the opportunity to participate in environmental conservation projects including building trails, clearing streams, planting trees and restoring fish and wildlife habitats.

<p><u>California Coastal Conservancy</u></p>	<p>The mission of the California Coastal Conservancy is to protect the state's coastal environment, including the lands, plants and marine wildlife that are part of this unique natural resource. The California Coastal Conservancy offers public education and community awareness programs designed to encourage the direct involvement of residents in protecting and preserving the state's unique coastal and marine habitats.</p>
<p><u>U.S. Department of Fish and Game</u></p>	<p>The California Department of Fish and Game is responsible for managing the state's fish, wildlife, plant resources and their natural habitats. The Department offers statewide educational opportunities through programs such as Project Wild (students and teachers grades k-12), Fishing in the City and Trout in the Classroom. It also offers The Natural community Conservation Planning Program for communities to use in implementing their own local programs. The Office of Fortuna provides grants that will assist public school educational programs with instruction in watershed and anadromous fishery conservation.</p>
<p><u>California Department of Forestry and Fire Protection, Project Learning Tree</u></p>	<p>The California Department of Forestry's Project Learning Tree program seeks to increase the understanding of students for the whole environment, to stimulate critical and creative thinking, to develop the ability to make informed decisions on environmental issues and to instill the confidence and commitment to take responsible action on behalf of the environment. The California Department of Forestry offers the Project Learning Tree program and curriculum for students and teachers on environmental education using the forest as a theme to teach ecology issues and environmental conservation.</p>
<p><u>Department of Conservation</u></p>	<p>The mission of the California Department of Conservation is to protect, conserve and encourage informed development of the state's soil, mineral, geothermal and petroleum resources; and to promote the recycling of beverage containers, and the conservation of agricultural and open space lands. The California Department of Conservation / Recycling Division offers public information and community education programs designed to encourage the active participation of citizens in recycling efforts in their areas.</p>
<p><u>Department of Education</u></p>	<p>"A Child's Place in the Environment" is a curriculum guide for grades 1-6 developed by the California Department of Education and the Lake County Department of Education. It is designed to provide elementary teachers with an example of an interdisciplinary, thematic environmental education program and to encourage students to become environmentally literate and active. Each grade-level unit of A Child's Place in the Environment is designed around four major themes: Valuing the Environment, Systems and Interactions, Patterns of Change, and Conservation. The San Diego regional coordinator provides information and training for teachers in use of the curriculum. The SandCREEC Region 9a Resource Directory helps you find Environmental Education (EE) Providers and the EE Programs/Resources they provide.</p>
<p><u>Department of Parks and Recreation</u></p>	<p>Anza Borrego Desert State Park: The mission of the California Park and Recreation Department is to provide for the health, inspiration and education of the people of California by helping preserve the state's biological diversity, protecting its natural and cultural resources, and creating opportunities for high quality outdoor recreation. Anza-Borrego Desert State Park, a unit of California State Parks, offers nature walks, guided hikes, talks by naturalists, a Junior Ranger program, and slide shows and desert ecology walks. The mission of the California Park and Recreation Department / Cuyamaca Rancho State Park is to provide for the health, inspiration and education of residents by helping preserve the state's rich biological diversity and its valued natural and cultural resources, and creating opportunities for high-quality outdoor recreation. Cuyamaca Rancho State Park, a unit of the California State Parks system, offers Jr. Ranger, nature hike and campfire programs for visitors to the park. We also go into the local schools to teach about the natural and cultural history of the area. Universities do studies and activities in the park.</p>
<p><u>California Resources Agency</u></p>	<p>The mission of the Resources Agency of California is to oversee the state's activities relating to the conservation, management and enhancement of California's natural resources, including land, wildlife, water and minerals. The Resources Agency of California offers the Environmental Education web site (www.ceres.ca.gov/cra) as an information resource for students and educators, and CERES which integrates and distributes natural resource information from a variety of sources.</p>
<p><u>California Department of Transportation</u></p>	<p>Caltrans has a comprehensive Storm Water Program addressing Construction, Planning & Design, Maintenance, Pesticide, and Vegetation Control operations. Caltrans is regulated as an MS4 similar to Municipalities and has publicly-available BMP references for Construction and for Planning and Design. Available on the web, a Construction Site BMP Manual (www.dot.ca.gov/hq/env/stormwater/publicat/const/12_99.htm) includes both temporary and permanent BMPs that meet today's highest performance standard. Also available, a SWPPP Manual covers all aspects of developing a SWPPP for projects that are both greater than 5 acres of disturbance and for projects less than 5 acres of disturbance. Caltrans has conducted numerous in-house and externally focused BMP and Design training sessions and plans to expand availability of this training. Caltrans has financially supported Think Blue Campaign and supports SANDAG's compilation of GIS data on Caltrans' MS4 system, drainage basins, and interconnections with municipality's MS4 systems.</p>

<u>California Regional Water Quality Control Board</u>	<p>The mission of the California Regional Water Quality Control Board office in Palm Desert is to allocate rights to the use of surface water and maintain responsibility for water quality control in the regional area. The California Regional Water Quality Board in Palm Desert provides public education and community awareness programs for the benefit of residents in its service area. In addition, the State Water Resources Control Board web site offers many links for teachers and students at www.swrcb.ca.gov/nps/education.htm.</p>
<u>Resources Conservation District</u>	<p>The Resource Conservation District (RCD) of Greater San Diego County helps people protect, conserve, and restore natural resources through information, education, and technical assistance programs. Watershed awareness, employee education program, erosion control for municipal staff, elementary age education with the enviroscape. Our mission is to promote wise use of our natural resources. Projects include watershed awareness and stormwater education.; public brochures; garden program; and the Carlsbad Agricultural Grants Program. We work in partnership with federal and state agencies to secure funding for our programs. Materials such as classroom presentations and scholarships are provided online for educators and students at www.rcdsandiego.org/educational/index.html.</p>

REGIONAL AGENCIES

<u>California Regional Environmental Education Coordinator program.</u>	<p>Part of a statewide network, SanDCREEC is the San Diego component of the California Regional Environmental Education Coordinator program. Its mission is to develop a communication network which provides educators with access to high quality environmental education resources to enhance the environmental literacy of California students. Funded in part by the California Department of Education, the office of the San Diego Environmental Education Coordinator is located in the San Diego Natural History Museum in Balboa Park. The San Diego EE Coordinator helps develop local and regional networks and partnerships; acts a clearinghouse for programs, materials, resources, and information, including maintenance of a database; facilitates the flow of information and resources in all directions among schools, agencies, non-profit organizations, businesses, and others; provides training in exemplary environmental education programs and projects to use as models; organizes workshops and regional meetings to increase the quality of regional EE.</p>
<u>State Education and Environmental Roundtable</u>	<p>SEER is a cooperative endeavor of 12 state education agencies that seeks to improve student achievement by using EIC for K-12 education. SEER's staff investigates the academic and behavioral efficacy of environment-based education. SEER is the developer of the EIC approach -- Using the Environment as an Integrating Context for Learning. EIC designates a pedagogy that employs natural and socio-cultural environments as the context for learning while taking into account the ""best practices"" of successful educators. EIC-based learning is not primarily focused on learning about the environment nor is it limited to developing environmental awareness. It is about using a school's surroundings and community as a framework within which students can construct their own learning, guided by teachers and administrators using proven educational practices. EIC programs typically employ the environment as a comprehensive focus and framework for learning in all areas: general and disciplinary knowledge; thinking and problem-solving skills; basic life skills, such as cooperation and interpersonal communications; as well as understanding of and appreciation for the env</p>
<u>County of San Diego</u>	<p>Community booths, Presentations (school, community, municipal), flyers, voter guide page - Bilingual (English & Spanish). Municipal Employees, Trade Associations, Chamber of Commerce, One on one w/ business owners & operators at site visits & inspections. Stormwater P2, Recycling, HHW Mngt/Disposal, BMP's for gardening, auto washing, water conservation. Stormwater BMP's, Pollution Prevention, Recycling. Used oil recycling</p>
<u>San Diego County Water Authority</u>	<p>The mission of the San Diego County Water Authority is to provide a safe, reliable source of imported water to its member agencies who serve the residents of the greater San Diego metropolitan region. The San Diego County Water Authority offers special programs for grades K-12, curriculum materials for grades K-6, programs and presentations for grades K-6 and programs and materials for grades 7-12. All programs and materials are free to San Diego County educators.</p>
<u>SANDAG</u>	<p>The San Diego Association of Governments is comprised of 18 cities and county government officials. The monthly board meetings are a forum for discussion on regional issues including environmental/growth management, habitat conservation, traffic, air quality, hazardous waste disposal, open space and recycling. Through SANDAG, regional consensus is reached on long-term plans for the health and development of the San Diego area. SANDAG also oversees collection and allocation of the resources necessary for completion of developmental improvements.</p>

LOCAL AGENCIES

<p><u>County of San Diego Department of Public Works</u></p>	<p>The mission of the County of San Diego Department of Public Works/Solid Waste Services Division is to promote solid waste awareness and reduction, re-use, and recycling of waste materials. The County of San Diego Department of Public Works provides recycling and hazardous waste hotlines to inform the public of the location and operating hours of county collection facilities.</p>
<p><u>County of San Diego, Office of Education</u></p>	<p>The Office of Education offers a variety of hands-on science based activities for students of all ages; 6th grade residential Outdoor School Program, a county tradition for over 50 years, hands-on field study programs and a series of mobile laboratories that come right to your school. The County of San Diego Office of Education offers a range of natural science programs, classes, camps and field trips for students of all ages to enable them to learn about the environment using fun, hands-on approaches. The San Diego County Office of Education offers Science Outreach and Outdoor School Programs to serve all school districts in San Diego County.</p>
<p><u>County of San Diego, Air Pollution Control District</u></p>	<p>The San Diego Air Pollution Control District monitors air pollution levels from mobile and stationary sources to ensure compliance in accordance with state and federal mandates for the metropolitan area. The County of San Diego Air Pollution Control District offers a variety of materials to help educate students and their teachers about air pollution. Call for more information.</p>
<p><u>County of San Diego, Department of Parks and Recreation</u></p>	<p>The Discovery Program offered by the County Department of Parks and Recreation, has available for teachers, five kits that are topic, grade, site-specific, and correlated to the 1990 Science Framework for CA Public Schools. Transportation costs are reimbursed. The Environmental Education Office of the San Diego County Park and Recreation Department offers a wide range of educational programs and resources including the Tracks 6th grade camp (from February through May), and the Junior Ranger camp which offers nature explorer, wildlife explorer, and instruments of discovery camps at different parks throughout the district for nine weeks in the summer. Department personnel and docents offer classroom presentations including career talks, slide programs, and live-animal programs on wildlife and adaptations for survival. They teach about cultural and natural resources at different parks throughout the county. The Department also has an Environmental Education Resource Center which contains a wide range of educational materials for reference or check out. At the Resource Center they have a visitor resources office which offers training for docents and other groups.</p>
<p><u>City of San Diego</u></p>	<p>The Think Blue campaign is the largest environmental public education program in City of San Diego history. The regional program will inform the public about storm water pollution, a major threat to San Diego's environment.</p>
<p><u>City of San Diego, Community and Economic Development Department</u></p>	<p>The City of San Diego Community and Economic Development Department promotes responsible use of the area's natural resources with programs dealing with habitat protection and recycling. The City of San Diego Community and Economic Development Department manages the multiple species conservation program related to habitat protection and the recycling market development zone.</p>
<p><u>City of San Diego, Metropolitan Wastewater Department</u></p>	<p>The mission of the City of San Diego Metropolitan Wastewater Department is to provide the public with a safe and efficient regional sewer system that protects our ocean water quality, supplements our limited water supply and meets federal standards, all at the lowest possible cost. The City of San Diego Metropolitan Wastewater Department offers public information and community outreach services related to its various energy/water conservation, wastewater monitoring and water reclamation and purification programs.</p>
<p><u>City of San Diego, Environmental Services Department</u></p>	<p>The mission of City of San Diego Environmental Services Department is to maintain a clean, safe and health environment by reducing, collecting and disposing of solid waste; to implement and encourage public participation in recycling programs; to prevent litter; and to educate the public as to the benefits of a safe environment. The City of San Diego Department of Environmental Services offers public information and outreach services related to its energy/water conservation, water quality, habitat protection and recycling programs.</p>
<p><u>City of San Diego, Park and Recreation Department Ranger Program</u></p>	<p>The mission of the City of San Diego Park and Recreation Department Ranger Program is to protect, preserve, interpret, educate and involve the public, while managing the lands managed by the department and providing opportunities for safe, quality recreation activities. The City of San Diego Park and Recreation Department offers environmental education programs as part of its management of the Tri-Canyon Open Space Parks. They are designed to help the public gain an appreciation of San Diego's natural and cultural resources.</p>

<u>City of San Diego, Planning and Development Review Department</u>	<p>The City of San Diego Development Services Department is committed to promoting responsible use of our area's natural resources through its programs dealing with review of proposed developments for conformance to the State Energy Code and the California Environmental Quality Act. The City of San Diego Development Services Department offers review of proposed developments for conformance to the State Energy Code in the area of energy conservation; and environmental response team and review of proposed developments for conformance with California Environmental Quality Act.</p>
<u>City of San Diego, Water Department</u>	<p>Provide the best quality of water to the citizens of San Diego in a professional, effective, efficient, and sensitive manner in all aspects of operation so that the public health, environment, and quality of life are enhanced. The City of San Diego Water Department offers a broad range of water conservation programs targeting homeowners, businesses, industries, gardens, parks and golf courses designed to promote responsible use of the city's water resources.</p>
<u>City of San Diego, Transportation Department</u>	<p>The City of San Diego Transportation Department is committed to promoting responsible use of natural resources and a healthily environment for city residents by offering programs on urban forestry, alternative transportation, street light and traffic signal conversion related to energy conservation and storm water pollution control. The City of San Diego Transportation Department offers programs on urban forestry, alternative transportation, street light and traffic signal conversion related to energy conservation and stormwater pollution control.</p>
<u>San Diego Unified Port District</u>	<p>The Port's Environmental Services Department oversees dredging efforts, testing of stormwater for pollutants while ensuring the port is functional. The Port also enacts Best Management Programs (BMPs) that includes both structural (physical barriers to pollution, i.e. filters) and non-structural (pollution prevention education) approaches to maintaining port's water. The Port joins the county as a partner in the "Think Blue" campaign designed to reduce pollution to stormdrains through awareness. The Port also enforces construction permit requirements in its waters. The Port industrial program - respond only to very limited specific issues raised by industry, limited to specific requests for information.</p>
<u>Mission Trails Regional Park</u>	<p>Mission Trails Regional Park Visitor and Interpretive Center contains exhibits on park history, cultural history and the six habitats found within the park. A theater offers slide and video presentations on cultural and natural history, and a research library is open to the public. Staff is also developing educational programs for students in grades K-adult. There is also a Public Walk on Watersheds and history of the San Diego River offered by the Education Coordinator of Mission Trails Regional Park. The West Hills High School Ranger Project is designed to further student understanding of ecology, class and taxonomy, and the scientific method with an experiential approach. Students visit Mission Trails Regional Park for a hands-on activities and field work. Using Mission Hills Park as the classroom students identify plant and animal species, test local water esevoirs, and study first hand human impact on the environment.</p>
<u>City of Solana Beach</u>	<p>The City of Solana Beach's coastline is guarded by the Department of Marine Safety which monitors not only the safety of persons but also the safety of water and all beach facilities. In order to reduce erosion the standard construction period is in the dry season for most operations and it must also comply with city ordinances and erosion control plans. Educational and outreach programs include Community Environmental Groups, Reporting, City Employees - inform during field business, newsletter/media to merchant groups. City of Solana Beach promotes a "Don't Pollute Stormwater" strategy for cleaner beaches. The city also sponsors recycling programs for household hazardous waste.</p>
<u>City of Imperial Beach</u>	<p>City of Imperial Beach monitors sewers and storm drains through BMPs. It also inspects sites for environmental hazards. Imperial Beach also provides household hazardous waste disposal through Household Hazardous Waste Program which includes used oil recycling. In May SANDAG funded the Regional Beach Sand Restoration Project which placed 120,000 cubic yards of sand onto the City's beaches to prevent further erosion.</p>
<u>City of Carlsbad</u>	<p>Resource Conservation Dist. (Consultant) Testing. Erosion Control BMP's. Building/ Zoning Codes. Vouchers are provided for both commercial interests and private citizens if they install low flow toilets and more efficient washing machines. Professional assistance is also given to those with an acre or more of irrigated land in the interests of conserving water. The City of Carlsbad also provides recycling and safe disposal of used oil, hazardous materials, phone books and Christmas trees.</p>
<u>City of Oceanside</u>	<p>Industrial Inspections/education, host community events, municipal training/education, community group presentations, used oil recycling education. "Oceanside Eyes" program for illegal discharge, construction inspection/education, watershed model education at community events.</p>

City of San Marcos	Stormwater overview (general education) management, response, inspections, engineering and planning. Inspectors in the field contact contractors and developers regarding their specific project. General Stormwater education/overview, pollution prevention
City of Poway	Entire NPDES Program. Prevention of pollution during construction activity, erosion control. Publish articles in the papers, provide handouts. Household Hazardous Waste facility and program. Used Oil Recycling Program.
City of Encinitas	Pollution Prevention in the design phase (planning), Pollution prevention (Streets department & Parks Dept.) /BMP Implementation. Illicit Discharge, soil stabilization, "stop work" notices, contractor education. Illicit connection, illegal discharges (how to recognize), isolating pollution sources from rain or runoff potential. Doggie "Dootie", volunteer monitoring, schools, over irrigation. Economic impacts of pollution, prevention methods, pollution reporting
City of Coronado	How to respond & document illegal dumping & illicit connections; stormwater pollution control; municipal cleaning practices; pollution prevention measures and identification of stormwater problems. Review of construction & commercial sites prior to issuance of permits & ongoing inspection of sites and construction is ongoing. Hazardous water materials magnet. How to clean & store dumpsters & trash cans; proper spill cleanup; water friendly products, grease oil disposal; general laws and fine information. Disposal of household hazardous waste, the need to prevent over-irrigation on private property & the proper disposal of pet waste, disposal of yard and garden clippings, motor oil and car washing drainage. BMP's for residents and businesses; household & home maintenance; automotive care; landscape grounds maintenance; disposal of pet waste; illegal discharges or improper connections.
National City School District	National City School District believes all children can learn and succeed. We believe that these outcomes will be achieved through dynamic learning experiences to work cooperatively, solve problems and speak and write frequently. Our environmental education programs encourage students to explore the natural world around them and to learn the importance of protecting our environment. The National School District offers programs that incorporate curricula developed by the State of California including A Child's Place in the Environment and Closing the Loop / Integrated Waste. The outdoor classroom program at the Stein Farm offers activities for students that include planting, archaeological digs and science experiments.
Encina Wastewater Authority	The Encina Wastewater Authority provides wastewater treatment to more than 200,000 North San Diego County residents and businesses. The Encina Waster Water Authority offers an educational program related to household hazardous waste and the damage it can cause water systems and the environment.
Helix Water District	Helix Water District has been offering exciting water-awareness programs to schools in our service area for more than thirty years. Currently, Helix Water District's school program reaches more than 5,000 students each year. In addition to school classroom presentations and tours, Helix has speakers who will talk to service groups or clubs about water-related topics.

PRIVATE

Environmental Groups, Watershed Groups, Non-profit, etc.

I Love a Clean San Diego	The mission of I Love a Clean San Diego is to empower the community to act in ways that are both economically viable and ecologically sustainable. I Love a Clean San Diego offers a range of community education programs including phone book, Christmas tree, motor oil and steel recycling, environmental awareness, adopt-a-bus stop, earth talk and beach cleanup.
San Diego Chapter of the Sierra Club	The mission of the Sierra Club, San Diego Chapter, is to explore, enjoy, and protect the wild places of the Earth. The Sierra Club, San Diego Chapter, coordinates and offers presentations by speakers on conservation issues in San Diego County.
San Diego Chapter of the National Audubon Society	The San Diego Audubon Society encourages protection of wildlife and native habitat. The society conducts community education and public outreach, conducts weekly field trips, owns and operates The Silverwood Wildlife Sanctuary and the nature education center in Lakeside. Included in their program themes are: wildlife, environment, ecosystems, nature awareness. The Audubon Society / San Diego chapter conducts community education and public outreach, conducts weekly field trips, owns and operates the Silverwood Wildlife Sanctuary and the nature education center in Lakeside.
Environmental Health Coalition	The Environmental Health Coalition is dedicated to the prevention and cleanup of the toxic pollution that threatens the health and well-being of our communities and environment. The Environmental Health Coalition offers on-going community education and public information programs on environmental health issues through presentations by members of its speakers' bureau and by sponsoring environmental health education forums.

<p><u>Friends of Tecolote Canyon</u></p>	<p>The Friends of Tecolote Canyon is a non-profit environmental organization created to studying, exploring and maintaining the integrity of the natural ecosystem and habitat of the canyon area. The Friends of Tecolote Canyon offers public education programs related to its work of studying, exploring and maintaining the integrity of the natural ecosystem and habitat of the canyon area.</p>
<p><u>Chula Vista Nature Center</u></p>	<p>The Chula Vista Nature Center is dedicated to preserving the lands in its care for ecological, recreational, scenic and scientific opportunities. The Chula Vista Nature Center offers a wide variety of educational programs. For students, ""Stepping into Nature"" (grades K-6) is a two-hour tour of the outdoor exhibits, gallery, and interpretive trails. ""Science Exploration"" (grades 3-6) focuses on wetland ecology, food chains, and birds. Both programs charge a small fee for students and require teachers to participate in a two-hour teacher training workshop, which provides curriculum materials, prior to the group's visit. For family groups, the nature center offers free programs including bird, bug, and beach walks, interpretive craft projects, and an introduction to raptors. For adults, the center provides birding skills workshops, field trip orientation workshops, and docent training.</p>
<p><u>Iron Mountain Conservancy</u></p>	<p>Committed to protecting and preserving the natural beauty surrounding Ramona through sensible land use. As a land trust, we can achieve effective long-term habitat preservation through creative methods of receiving land from public and private donations and conservation easements. Iron Mountain Conservancy connects deep appreciation of our natural home with dynamic participation through nature walks, lectures, children's activities, wildlife surveys and other educational outreach.</p>
<p><u>Friends of Hellhole Canyon</u></p>	<p>Our goals are to increase public awareness and appreciation of the Preserve by sharing with the public the natural beauty, wildlife and plant resources of the Preserve, and by encouraging recreation and access to the Preserve. We are also committed to the expansion and protection of the preserve and its biological integrity. We want the beautiful Hellhole Canyon Open Space Preserve to remain an inspiring natural resource for all of us today and the generations that follow us.</p>
<p><u>San Diego Natural History Museum</u></p>	<p>The San Diego Natural History Museum offers a variety of classes through the Environmental Science Education Center. The center houses several programs that address different audiences: Informal Education, serves a variety of children's classes, adult field trips and classes, lectures, overnight trips and expeditions, and family programs. Docent guided tours are available to students grades K-college, and docent outreach programs for grades K-6. Guided canyon walks are offered to the general public and to classes. Natural History subject trainings are available for teachers. The Bioregional Environmental Education Project seeks to develop partnerships for teacher training that inspire teachers, students, and individuals to become environmentally responsible citizens in the Tijuana River watershed. PROBEA provides teacher-training workshops and develops educational materials for the use of teachers in the San Diego, Tijuana, and Ensenada region. Students in Mexico and the U.S. also test water quality in specific sites throughout the Tijuana River watershed and share their results with one another and appropriate regional agencies.</p>
<p><u>Batiquitos Lagoon Foundation</u></p>	<p>The Batiquitos Lagoon Foundation preserves, protects, and enhances the Batiquitos Lagoon. The foundation seeks to educate the public about the importance of preserving the unique natural resources found in the greater San Diego area. It offers six programs with curriculum guides tailored for the age of the student group, field trips and self-guided nature walks. provides multimedia educational opportunities and administers enhancement from a mitigation fund (Port of Los Angeles).</p>
<p><u>Friends of Penasquitos Canyon Preserve</u></p>	<p>The Friends of Penasquitos Canyon Preserve is a non-profit organization established to protect and preserve the Penasquitos Canyon habitat and surrounding areas. Friends of Los Penasquitos Canyon Preserve offers free weekly guided nature walks at the preserve located between Mira Mesa and Rancho Penasquitos. The Friends of Penasquitos Canyon Preserve offers community outreach and public information programs as part of its work to protect and preserve the Penasquitos Canyon habitat and surrounding areas.</p>
<p><u>Native American Environmental Protection Coalition</u></p>	<p>They provide the technical assistance to those member tribes in dealing with the environmental issues in their community. This includes, recycling, waste reduction, household hazardous waste and air programs. They also provide technical training in GIS and act as a facilitator between cross tribal efforts.</p>
<p><u>San Dieguito River Valley Land Conservancy</u></p>	<p>The mission of the San Dieguito River Valley Conservancy is to preserve and enhance the San Dieguito River system from ocean to foothills.</p>
<p><u>San Elijo Lagoon Conservancy</u></p>	<p>The San Elijo Lagoon Conservancy is a non-profit foundation that was established in 1987 to provide a community-based, volunteer support group for the San Elijo Ecological Reserve. The San Elijo Lagoon Conservancy offers docent-led nature walks for students K-12, scouting groups and members of the general public, and on-going public education programs designed to increase awareness of the reserve's unique resources.</p>

<u>Sweetwater Authority</u>	School outreach, K-12 and College levels. Watershed model, (Enviroscape) and conduct seminars. Tips on water conservation. Water supply and quality ratings. web site www.sweetwater.org/education/education.html provides resources for educators with lesson plans and maps to field trips. Free demonstrations to classrooms.
<u>San Diego Land Conservancy Coalition</u>	The San Diego Land Conservancy Coalition (SDLCC) is a land conservancy that coordinates public/private partnerships, promotes environmental education, and provides a networking and information center for San Diego County land conservancies.
<u>Fallbrook Land Conservancy</u>	The Fallbrook Land Conservancy is dedicated to preserving the pastoral quality of life in our community through permanent protection of open spaces, creeks, ponds, groves, farmland, parks and trails. The Fallbrook Land Conservancy seeks to provide on-going information to our community about our efforts to preserve the pastoral quality of life in our community through permanent protection of open spaces, creeks, ponds, groves, farmland, parks and trails.
<u>Escondido Creek Conservancy</u>	The mission of the Escondido Creek Conservancy is to protect, preserve and manage the lands, plants, wildlife and water resources of the Escondido Creek habitat. Escondido Creek Conservancy offers public education programs as part of its mission to protect, preserve and manage the lands, plants, wildlife and water resources of the Escondido Creek habitat.
<u>Adopt-a-Watershed</u>	Adopt-a-Watershed is a K-12 community-based learning program that promotes science education and encourages watershed stewardship throughout the state. Adopt-a-Watershed offers K-12 science education and watershed ecology curriculum which includes all materials necessary to teach the unit and a full day of professional development training for teachers, watershed monitoring and restoration, field studies for students and teachers and community action projects to preserve watersheds.
<u>Backyard Tourist, Inc.,</u>	A 501(c)(3) Environmental Educational Organization: Backyard Tourist, Inc. is a non-profit educational organization. Our purpose is to teach nature awareness in various environments and to educate the public in primitive Earth skills. Our educational and instructional programs for youth and adults create an understanding of the need for simpler living in order to reduce humanity's impact on the Earth. All classes are designed to enhance an understanding of the wilderness environment and create a sense of excitement and adventure in such a way that everyone taking the journey becomes a tourist in their own backyard. Using simple "hands-on" activities, participants acquire a heightened awareness of the world and an appreciation of the need to simplify their lives and walk more gently upon the Earth.
<u>Birch Aquarium at Scripps Institution of Oceanography</u>	This fall we are launching a new menu of science education programs that meet the new California Science Standards and some highlighting the American Association for the Advancement of Science Benchmarks for Science Literacy. Programs are designed for Elementary (Grades K-2), Upper Elementary (Grades 3-6) and Middle School to High School (Grades 7 to 12). Most of our programs are available either on-site or as outreach visits. Throughout the summer the Aquarium offers programs that feature hands-on activities, animal encounters, and creative arts and crafts to reinforce ocean program themes. Children learn about marine animals and ocean conservation while learning new skills. The Aquarium offers year-round classes and lectures, such as our Meet the Scientist lecture series -- a unique opportunity to learn about the most recent discoveries from Scripps scientists, and our Home Aquarium Techniques classes where you will go behind the scenes to see our jellies and seahorses, and learn techniques for maintaining a classroom aquarium.
<u>Blue Sky Ecological Reserve</u>	The mission of the Blue Sky Ecological Reserve is to preserve the sensitive plant and animal species within four very distinct native habitats. Set up by the California Department of Fish and Game in cooperation with the City of Poway, the 700 acre reserve provides docent guided hikes as well as school tours. Lectures on topics ranging from astronomy to edible plants are also available. web site users.abac.com/bluesky/index.htm gives a hiking schedule.
<u>Border Ecoweb</u>	The Border Ecoweb project will develop an arena where community members can find out what other people and groups are doing to understand and resolve border environmental problems. It will provide access to the agencies and people working on the solutions. It will also serve as a roadmap of how to find basic environmental data for the transborder region.
<u>California Native Plant Society</u>	The mission of the California Native Plant Society / San Diego Chapter is the preservation of the diverse fauna native to the southwestern part of the state. The California Native Plant Society / San Diego Chapter offers programs developed at the state level, teacher training and a material and curriculum referral service."

<p><u>California Project WET</u></p>	<p>The goal of Project WET is to facilitate and promote awareness, appreciation, knowledge and stewardship of water resources through the development and dissemination of classroom-ready teaching aids. The Project WET Activity Guide , for K-12 grades, is a collection of innovative, water-related activities that are hands-on, easy to use, and fun! Project WET activities incorporate a variety of formats, such as large and small group learning, whole-body activities, laboratory investigations, discussion of local and global topics and involvement in community service projects. Educators can obtain the Guide by participating in a 6-hour workshop.</p>
<p><u>California Wetlands Foundation</u></p>	<p>The California Wetlands Foundation is a statewide non-profit organization dedicated to preserving waterfowl and their natural habitat. The California Wetlands Association provides public education and information programs to promote the protection, preservation and enhancement of the state's waterfowl resources and their natural habitats.</p>
<p><u>Center for Marine Conservation</u></p>	<p>The Center for Marine Conservation is a national non-profit membership organization dedicated to protecting marine wildlife and their habitats, and to conserving coastal and ocean resources. Water Quality Monitoring and Citizen Outreach: A vital component of CMC's Campaign is to identify existing and new citizen water quality monitoring programs that improve the public's awareness of what is in the water they swim in and the fish they eat. It coordinates regional workshops to facilitate the exchange of information among existing citizen groups that are monitoring water quality throughout the country. The workshops and monitoring projects will be useful in assessing government and other programs that are working to address key water quality and habitat issues. The Center for Marine Conservation / Pacific Regional Office offers an educators packet, slide presentation and video presentation dealing with marine debris and conservation, and presentations on the Adopt-a-Beach coastal clean-up program.</p>
<p><u>Ecological Life Systems Institute</u></p>	<p>The mission of the Ecological Life Systems Institute is to show how the human family can live and make a living on our planet in ways that are economically and ecologically sustainable through the use of free-market forces and the democratic process. The Ecological Life Systems Institute offers education programs for the public and private sectors related to ecologically sustainable development.</p>
<p><u>Educational Communications, Ecology Center of Southern California</u></p>	<p>Educational Communications is a non-profit, tax-exempt organization specializing in environmental media productions and information projects on related social issues. The Ecology Center serves as a regional conservation clearinghouse and activist group. Educational Communications offers educational programs in the form of environmental media and information projects that promote a greater awareness of environmental issues.</p>
<p><u>Natural Resources Defense Council</u></p>	<p>The National Resources Defense Council is a nonprofit membership organization dedicated to protecting America's endangered natural resources, and to improving the quality of the human environment. The National Resources Defense Council offers and on-going public education program to support its work dedicated to protecting America's endangered natural resources, and to improving the quality of the human environment.</p>
<p><u>California Wilderness Coalition</u></p>	<p>The mission of the California Wilderness Coalition is to promote the preservation of wild lands as legally designated areas, and to educate the public in general about the value of wild lands in the state. The California Wilderness Coalition conducts educational and research programs to promote an understanding of the value of protecting and preserving wilderness areas.</p>
<p><u>Keep California Beautiful</u></p>	<p>Keep California Beautiful coordinates community clean-up activities. KCB provides community programs with free bags and promotional assistance for clean-up activities and events. Likewise, jurisdictions may consider participating in the greater Keep America Beautiful programs promoting citizen involvement. The process of the fight against litter includes education and awareness building, individual engagement and action, systematic community programming, and as a last resort, strict enforcement on littering laws and on other laws covering environmental crimes like illegal dumping and graffiti. These problems represent Quality of Life issues that are caused in large part by individual behaviors that can also be prevented by adjustments and education.</p>
<p><u>National Wildlife Federation</u></p>	<p>Across the country states are considering watershed-based trading as a new approach to cleaning up waterways. To become involved and to make sure the proposals do what they purport to do, citizens must understand what trading is, review trading proposals, identify problem areas that could weaken the Clean Water Act's effectiveness, and demand the necessary changes to make trades work. The " Making Watershed-Based Trading Work for You" guide can provide the information and understanding you need to tackle those important tasks.</p>

<u>Project Wildlife, San Diego</u>	<p>Project Wildlife, San Diego is a nonprofit organization dedicated to the rescue, rehabilitation and release of San Diego's native wild animals and birds. Project Wildlife offers presentations to student and civic groups on native wildlife including the topics of birds and raptors, wildlife rehabilitation, and wildlife rescue.</p>
<u>San Diego Zoo and Wild Animal Park</u>	<p>The San Diego Wild Animal Park and the Zoological Society of San Diego are dedicated to increasing understanding and appreciation of the inherent worth of all life forms by exhibiting animals and plants in natural settings and applying its efforts and influence to the conservation of the world's wildlife. The Wild Animal Park's education department provides services for over 10,000 students each year through special tours featuring botany, local conservation issues and efforts to save endangered wildlife, classroom kits for grades K-12.</p>
<u>Solana Recyclers</u>	<p>Beginning in Fall 2000, The S.E.A.L. project will work with and educate students from a local High School and Elementary School about what constitutes marine debris, the means by which marine debris ends up on the beach. The High School students will become the educators and teachers of elementary age students. Older students will learn about marine conservation, pollution prevention and develop leadership and public speaking skills as they are teaching these lessons to the younger children. The students will create a bilingual (English/Spanish) education display and brochures, giving a visual element to help students retain the information. The brochure will enable students to take home information and become the educators of siblings, parents, and friends about protecting our coastal environment. Free in class presentations are available to educate students of all ages about how to protect their environment, including the importance of recycling used motor oil, identifying what is a household hazardous material and how dumping or improper disposal harms the environment, and why these issues are so important for the future drivers and cons</p>
<u>Surfrider Foundation, San Diego County Chapter</u>	<p>The Surfrider Foundation is a nonprofit grass-roots organization dedicated to the preservation and conservation of coastlines and beaches. The Surfrider Foundation is an International organization, with chapters all over the United States and in other countries. The information above only applies to the San Diego County Chapter.</p>
<u>Girl scouts/San Diego-Imperial Council</u>	<p>The Girl Scouts / Greater San Diego Chapter is committed to providing girls with an appreciation of the natural world through programs that offer quality outdoor experiences and training. The Girl Scouts / Greater San Diego Chapter offers environmental education programs as part of its overall mission to foster nature awareness in its membership.</p>
<u>The Environmental Trust</u>	<p>The Environmental Trust seeks to protect and preserve land in San Diego County for the resources that have ecological, scientific, educational, recreational, scenic and open space value. The Environmental Trust is involved in efforts to educate the public about the importance of protecting and preserving land in San Diego County for current and future generations.</p>
<u>The Nature Conservancy</u>	<p>The Nature Conservancy is a national nonprofit membership organization dedicated to preserving natural diversity by finding and protecting the areas that contain the best examples of all components of the natural world. The Nature Conservancy provides community education services as an important part of its work dedicated to preserving natural diversity by finding and protecting the threatened habitats and open spaces in the greater San Diego region.</p>
<u>The Nature School</u>	<p>The Nature School is involved with coastal creek and fresh water habitat advocacy; stream ecology and fishery conservation education; in-class trout hatchery and field science; and water quality monitoring. Our ultimate goal is to restore an urban creek and reintroduce Pacific steelhead (a salmon species). The Nature School promotes environmental awareness and education by offering programs on topics including coastal creeks, fresh water habitats, stream ecology, fishery conservation, and water quality monitoring.</p>
<u>San Diego Wild Animal Park</u>	<p>The San Diego Wild Animal Park and the Zoological Society of San Diego are dedicated to increasing understanding and appreciation of the inherent worth of all life forms by exhibiting animals and plants in natural settings and applying its efforts and influence to the conservation of the world's wildlife. The Wild Animal Park's education department provides services for over 10,000 students each year through special tours featuring botany, local conservation issues and efforts to save endangered wildlife, classroom kits for grades K-12.</p>
<u>National Environmental Education and Training Foundation</u>	<p>NEETF's Education and Environment (K-12) programs strive to build a strong connection between environmental education and the formal K-12 education sectors. Recent research shows that schools using their built, natural and cultural environments as learning tools can significantly enhance academic achievement by giving a natural boost to learning. Schools also find the environment useful in after-school programs that reinforce academics and reduce violence and crime. River Network and The National Environmental Education & Training Foundation plan to employ local TV weather reports to educate the public about the environment and watersheds, the threats to them, and why it is in our best interest to protect their ecological integrity. This will start with a pilot on the Chesapeake Bay and could eventually bring an environmental imperative into nearly everyone's living room. To actively involve the community in watershed protection, a new section of the WeatherNet4 website will developed - Watershed Watchers and Interactive Environment. This site will provide the public with real-time and near-time data on condition of the environment, watershe</p>

<u>San Diego Baykeeper</u>	BayKeeper realizes that education is one of the most important tools to prevent pollution. BayKeeper staff offers presentations to colleges, civic groups, dive and surf clubs, boating groups, environmental coalitions and others interested in knowing more about BayKeeper's work and the current state of the Bay.
<u>San Diego Earth Times On-Line</u>	Each month, San Diego Earth Times On-Line presents articles covering a wide variety of local, national and international environmental topics. The SDET archive contains every article published since our first issue in Dec '93 -- more than 1,200 articles -- and an Archive Search Engine to help find what you're looking for.
<u>Tijuana River National Estuarine Research Reserve</u>	The Education and Outreach programs at Tijuana River NERR strive to go beyond providing information to resource users, as information alone does not protect the resources. The mission of the Education and Interpretation Program at Tijuana River NERR is to provide interactive, hands-on, thematic bilingual environmental education to local and regional students, the community, and coastal decision makers through partnerships with local schools, community groups, and government agencies to promote and support estuarine stewardship by an informed and active citizenry.
<u>Water Education Foundation</u>	The mission of the Water Education Foundation is to develop and implement education programs that lead to a broader understanding of water issues and to the resolution of water problems. The Water Education Foundation offers a variety of products and services to help adults and children learn about water resources. Our flagship is the magazine, ""Western Water,"" and our Layperson's Guide series is a wonderful resource for learning about specific western water issues. "River Report" is a newsletter designed to update readers on Colorado River issues. WEF also has maps and videos available. WEF's school education program topics include groundwater, water quality, water conservation, and watersheds. Format varies: packets, videos, computer games. WEF also conducts teacher training workshops, including Project WET (Water Education for Teachers), an international interdisciplinary curriculum for K-12 students.
<u>Wild by Nature</u>	Wild By Nature teaches environmental education to suburban school students and their teachers through field trips and outdoor projects that focus on vernal pools, temporary wetlands and other local natural ecosystems.
<u>Wildlife Center</u>	We are a volunteer, Public Service group dedicated to the rescue and rehab of wildlife, with emphasis on educating and helping the public to deal with their wildlife problems.

Professional and Industry Associations

<u>National Association of Environmental Professionals</u>	The NAEP is an association dedicated to the advancement of the environmental professions in the US and abroad. It is designed to be a network of professionals in industry, government, private and educational sectors. Part of its mission statement is to provide a forum for state of the art information on the environment through its publication 'Environmental Practice'.
<u>California Water Environment Association</u>	The purpose of this association is to enhance the education and effectiveness of California's wastewater professionals through training, certification, dissemination of technical information and promotion of sound policies to benefit society through protection and enhancement of the water environment. Some of their objectives include: Enhancing the education and effectiveness of wastewater professionals through training and certification; Developing and implementing effective delivery mechanisms to rapidly disseminate knowledge concerning the water environment; Stimulating public awareness of the importance of wastewater treatment to public health and the water environment.
<u>American Public Works Association</u>	APWA should be actively involved with the educational system to develop and implement programs which increase awareness of the role of public works and its importance to the community. Children should be introduced to the various services provided by public works and the careers available in both engineering and public works throughout their elementary and high school education. If the U.S. and Canada are to continue a leadership role throughout the world, more administrative, technical, and professional public works employees are needed with a strong background in math and science. By developing programs which emphasize environmental and infrastructure needs, students will create an increased awareness among their parents of the critical role played by public works. In addition to these programs, APWA should partner with schools to create an annual nationwide contest which will challenge student teams to compete in engineering/public works related tasks.

<u>Industrial Environmental Association</u>	The mission of the Industrial Environmental Association is to promote environmental responsibility through effective communication and interaction with our members, government, regulatory agencies, business and community. The Industrial Environmental Association offers educational and informational activities designed to advise member companies on environmental issues and responsibilities.
<u>F.L.I.T.E. Tours Inc.</u>	F.L.I.T.E. Tours, Inc. is a professional birding and nature tours operation. Our mission is to offer specialized expertise and knowledge about the habitats and bird life of the San Diego area. Our goal is to provide opportunities for enjoyable field trips as well as instructional programs about the variety and value of our natural resources.

Private Business

<u>Annette Dietz Communications</u>	The mission of AD Communications is to provide a variety of environmental education enhancement workshops for students and teachers grades K-12. AD Communications offers hands-on workshops for students and teachers, special programs for ""at-risk"" students, environmental fairs for students, curriculum development and Native American curriculum and in-service workshops.
<u>San Diego Gas & Electric</u>	Information and training package available June 2001 "How Sempra and SDG&E 's commercial, construction and industrial facilities can prevent their waste from ending up in the storm drain" BMP's for industrial facilities, based on Caltrans BMP's. The training package will be available for community outreach soon.
<u>Environmental Education Experiences</u>	Environmental Education Experiences is a San Diego based company that offers presentations, field trips and ecotours designed to foster a greater respect for wildlife and our natural environment. Environmental Education Experiences offers programs on plant basics, the world of worms, marine mollusks, diversity of arthropods, whales, manatees and endangered animals.
<u>Arts & Technologies for Youth, Inc.</u>	The mission of Arts & Technologies For Youth is to provide art and environmental education to homeless citizens, under-served youth and other children and their families. Arts & Technologies for Kids offers Planet 1 TV, Global Kids Newsmagazine Show and Meredith & the Recycle Kids TV programs and multi-disciplinary art education workshops
<u>C.M. Bigger Associates</u>	Cm Bigger Associates is a private environmental consulting firm which emphasizes environmental training in the U.S. and Latin America. It offers teacher training workshops on water and air quality curricula. The workshops train teachers how to conduct non-point source pollution education with their students. The workshops present teachers with different projects and interactive class demonstrations they can use to illustrate concepts on water quality, such as building model septic systems, or demonstrations of air pollution's effects on plants. These workshops are also offered binationally for teachers from Baja California. C.M. Bigger and Associates will develop curriculum materials and activities or provide training on a wide variety of subjects and will perform school visits as well.
<u>Grassroots Educators</u>	Grass Roots Educators provides a variety of services in ecology and natural history education. They develop curriculum materials, provide teacher training, and coordinate the San Diego Natural History's Del Museo al Barrio community outreach program which is carried out in collaboration with Sherman Heights Community Center and Sherman Elementary School. The Director, Judy Ramirez, is also U.S. Academic Director and one of four principal collaborators for PROBEA.
<u>Sea World</u>	Sea World of California, a 150-acre marine life entertainment park on San Diego's Mission Bay, offers a variety of educational programs for students, teachers and the general public. Ecosystem based education in school (K-12) auditoriums. Provides education for teachers. International migratory bird day.
<u>Science Adventures</u>	Established in 1979, Science Adventures is dedicated to providing "hands-on" educational enrichment for elementary age students. Science Adventures emphasizes the development and use of critical thinking skills, and interactive, dynamic learning situations in teaching science concepts. Science Adventures offers a wide variety of science enrichment programs designed for students in grades K-6. These include after school science clubs (4-6 week programs available to schools and communities), school science assemblies (large group presentations providing dynamic, interactive demonstrations in earth, life, and physical sciences), classroom visits, field trips, and summer science day camps. Science Adventures also offers teacher workshops and family math and science nights.
<u>Wildlife Education Ltd.</u>	Enriching the lives of children and families with innovative products that encourage learning and reading about nature and wildlife.

EDUCATIONAL INSTITUTIONS

<p><u>California Schools Implementation Network</u></p>	<p>The California Schools Implementation Network is a statewide professional network and multi-year program designed to help middle schools, teachers, administrators, parents and business and community people plan and implement quality science and mathematics programs for all students in their area schools. The California Schools Implementation Network offers the complete CSIN and SPAN professional development programs to assist teachers, administrators, parents and business and community individuals to implement quality science education projects in their communities.</p>
<p><u>Environmental Education Resource Center / CSUSB</u></p>	<p>The Environmental Education Resource Center at California State University / San Bernardino offers environmental education training, curriculum materials and research studies on a range of environmental topics. The Environmental Education Resource Center at California State University San Bernardino's School of Education offers environmental education programs and resources for students and teachers.</p>
<p><u>Global Change Research Group, San Diego State University</u></p>	<p>The Global Change Research Group (GCRG) within the Department of Biology at San Diego State University is an ecological research laboratory conducting research to elucidate the responses of plants and ecosystems to elevated CO2 in order to aid the understanding of potential changes, so that politicians can make informed policy decisions that affect the world's biological future. The Global Change Research Group within the Department of Biology at San Diego State University offers university study and research on topics including changes in the environment and their impact on threatened plant and animal life and their native habitats.</p>
<p><u>Panterra Educational and Cultural Programs</u></p>	<p>Panterra is a nonprofit organization committed to conservation through experiential education that incorporates hands-on, cross-curricular marine science and cultural programs. Panterra Educational and Cultural Programs are environmental science and cultural awareness programs for middle school and high school students from Canada and California. The programs consist of week or ten-day boat trips around Vancouver Island or the southern Gulf of California which focus on marine ecology and regional culture.</p>
<p><u>Secondary Science Olympiad</u></p>	<p>The Science Olympiad is devoted to improving the quality of science education, increasing student interest in science and engineering, and providing recognition for outstanding achievement in science education by both students and teachers. The Science Olympiad is a competition designed to test students' knowledge of science concepts, their capacity to follow science processes and use critical-thinking skills, and their science application skills and technological understanding. Teams of fifteen students study with their teacher-coach during the school year in preparation for the Regional Competitions held annually in February at San Diego State University. Regional winners go on to state competitions, and finalists participate in a national competition. Students are tested on a wide range of science topics and perform laboratory work or build devices to demonstrate their knowledge.</p>
<p><u>San Diego State University</u></p>	<p>The Geography Department at San Diego State University is actively involved in environmental research projects that measure and monitor habitat loss, water pollution, hazardous waste and air pollution along the U.S.-Mexico border. The Institute for Regional Studies of the Californias (IRSC) develops and sponsors policy, research projects and workshops on transboundary environmental issues, including water quality, air quality, hazardous waste and environmental pollution. Socio-economic and cultural themes are addressed within the context of sustainable development. The IRSC maintains the U.S. - Mexican Border Environmental Information Web (Border EcoWeb) website, an IRSC/SDSU - EPA collaborative project designed to facilitate public access to environmental information for the U.S.-Mexican border region. The Pacific Estuarine Research Laboratory at San Diego State University / Department of Biology performs environmental research projects dealing with coastal wetlands, wetlands ecology and estuarine restoration.</p>
<p><u>University of California at San Diego (UCSD)</u></p>	<p>The University of California at San Diego Extended Studies and Public Programs Program for Teacher Enhancement in the Liberal Arts offers the workshop "Teaching Environmental Literacy: An Interdisciplinary Approach to Environmental Education. The workshop seeks to provide an introduction to the field of environmental education by exploring the new "California Guide to Environmental Literacy" (K-12) and the curriculum "A Child's Place in the Environment" (1-6) produced by the California Department of Education. The UCSD Extended Studies Program workshop "Teaching Environmental Literacy: An Interdisciplinary Approach to Environmental Education" is a one-week intensive workshop offered for educators in the summer. The course examines the incorporation of environmental literacy into different core skills areas and includes presentations of successful curriculum units and a field trip to a local center of environmental interest. The program is designed for 4th-8th grade teachers, but content, materials, and techniques may be easily adapted to other levels.</p>
<p><u>Bioregional Environmental Education Project (PROBEA)</u></p>	<p>The Bioregional Environmental Education Project -Proyecto Bioregional de Educación Ambiental (PROBEA)- seeks to develop partnerships for teacher training that inspire teachers, students, and individuals to become environmentally responsible citizens in the Tijuana River watershed and in Ensenada. PROBEA provides teacher training workshops and develops educational materials for the use of teachers in the San Diego, Tijuana, Mexicali, Tecate, Baja California Sur and Ensenada region. Students in Mexico and the U.S. also test water quality in specific sites throughout the Tijuana River watershed and share their results with one another and appropriate regional agencies.</p>

Appendix C. Examples of Potential Program Costs

Sample Outreach Tool	Description of the Tool or Service	Cost approximation
Broadcast Media		
Cable Television Advertising	Promotional ads through cable television. Development of materials is available for fees.	May range from \$3,000-10,000 per week. Production cost can run \$1,200 and up per 30-second ad, depending on style and content.
Radio	Radio announcements may stand-alone or be part of sponsoring a traffic report or special program.	Cost dependent on negotiated contract.
Newspaper Advertising	Dependent on publisher.	Varies from \$35.00 to hundreds of dollars depending on which newspaper, ad size and distribution.
Media Press Release	Media press release announcement from agency to announce a press conference, media event, or success in your program.	Staff time to create and distribute to the media providers.
Non-traditional Advertising: Movie Trailer	Slides shown in movie theatres between or before a movie is shown. Slides appear 100-500 times per day per theatre.	Cost varies significantly by service provider. Cost dependent on location and theatre chain, ranges from \$150-\$1,400 per week.
Website	Internet website design, establish and implement operation.	Varies. Creation and production of a website can run thousands of dollars. Maintenance once the site is developed can run \$30-\$50 a month and up, depending on services.
Public Service Announcements (PSAs)	Many celebrities have recorded PSAs that are available to municipal agencies.	\$1,000-\$3,000 per minute for production.
Community Events	Various community events may have fees associated with participation and in securing booth space.	Event fees vary. Many are free. Some events charge fees of as little as \$35, while others charge \$400-\$1,000 for booth space.
Video	Video is a useful tool. Videos have been created by the County of LA, Riverside County, San Diego County and a variety of others.	Video productions can be expensive. There can also be high costs associated with editing. Expect to pay between \$1,000 and \$3,000 per minute for a completed video with editing. Many videos on water quality are available free from other agencies and other sources for reasonable costs ranging from \$25-100.
Printed Material		
Brochures	Brochures, pamphlets or fact sheets printed to provide insight to the issues and best management practices for solutions.	Vary depending on products. A 2-sided, tri-fold brochure may be copied with one color ink may cost from \$.11 and up. Color glossy can be extremely expensive. (Layout and Design costs additional.)
Municipal Vehicles	Placards or messages placed on municipal vehicles.	Free. Costs may vary if contracting from other agencies.
Public Lobbies/Municipal Facilities	Materials displayed or distributed via public lobbies and municipal facilities frequented by the public, on counters and/or display racks.	Free.
Libraries	Materials displayed or distributed in public libraries in display racks or on counters.	Free.
Promotional Items		
Pencils	Pencils printed with messages promoting messages or reporting mechanisms hotlines, etc.	Quantity discounts \$.119-\$.13 per piece with quantity discount.
Coloring Book	Materials provided for children to spark interest and participation.	From \$.51 and up. Development and artwork not included. Also cost may be higher for color cover or special processes.
Dustpan	Dustpan with printed message to encourage sweeping rather than hosing with water.	Range from \$1.18 and up per piece.
Disk Flyer for dogs	Printed with messages to pet owners.	Range varies \$.30 -.90 per piece. High quantities are typically discounted.

Training		
Training Education Sessions: Workshops/Seminars	Sessions on a variety of topics may cover automotive topics, gardening, recycling, laws and regulations.	Cost of workshop would vary on number of participants, equipment rental, accommodations availability (public hall or rented space.), materials distribution, speaker fees, etc. Refreshments if served. (Total costs may be as much as \$500 and up per session)