

Section 8

Residential Component



8.1 Introduction

The residential program described in this section was developed pursuant to Sections D.3.c of the Permit and contains the information required, as specified in Section J.1.a.(3)(g) of the Permit. This program was developed with the intent to reduce residential discharges of pollutants from the MS4 to the maximum extent practical and prevent residential discharges to the MS4 from causing or contributing to an exceedance of water quality standards. The program specifies best management practices (BMPs) and pollution prevention methods for residential areas and activities that occur within the City. Residents are required to implement these BMP and pollution prevention methods pursuant to the City's stormwater Ordinance, DMMC 11.30. The City will inform the citizens of Del Mar of the required minimum BMPs for residential areas and activities and enforce the implementation of these practices.

8.2 Source Characterization

This section provides a list of residential areas and activities that were identified as having a high threat to water quality. The list of residential areas and activities includes, as applicable, each of the sites and sources listed in Permit Section D.3.c. (1) (a) through (f) and J.1.a. (3)(g)i.

The City of Del Mar evaluated all residential areas and activities within its jurisdiction and identified those areas and activities that pose a high threat to water quality. The residential areas and activities designated as a threat to water quality are discussed in this section. For evaluation purposes residential areas and residential activities were considered separately as follows:

8.2.1 Residential Areas

The City evaluated all residential areas within its jurisdiction for potential threats to water quality. As required by the Permit section D.3.c. (1), the evaluation considered that, at a minimum, high priority residential areas shall include:

- Any residential areas tributary to a Clean Water Act (CWA) section 303(d) impaired water body, where the residence generates pollutants for which the water body is impaired.
- Any residential areas within or directly adjacent to or discharging directly to a coastal lagoon or other receiving waters within an environmentally sensitive area.

The City of Del Mar is unique in that it is a small city (approximately 1.8 square miles) and is surrounded on three sides by water—San Dieguito Lagoon to the north, Los Peñasquitos Lagoon to the south and the Pacific Ocean to the west. As of 2006, the 303(d) listed water bodies within the City of Del Mar include the Los Peñasquitos Lagoon and the Pacific Ocean at the mouth of the San Dieguito Lagoon. Los Peñasquitos Lagoon is listed for impairments due to sedimentation and siltation and the mouth of the San Dieguito Lagoon is listed for bacteria impairment. In addition, all three water bodies have been designated as having a RARE beneficial use by the RWQCB.

City has defined Water Quality Sensitive Areas based on the definition of Environmentally Sensitive Areas in the Permit (see Section C.10 of the Permit). The Water Quality Sensitive Areas (WQSAs) delineated within the City of Del Mar include 303(d) listed water bodies, water

bodies designated as having a RARE beneficial use and City designated sensitive areas. The WQSAs are represented in Figure 1.1-2.

Since the City of Del Mar is a small jurisdiction surrounded by the WQSAs, all residential areas within the City of Del Mar have the potential high threat to water quality. Therefore, all residential areas within the City of Del Mar are considered *high priority* residential areas for the purposes of jurisdictional urban runoff management.

8.2.2 Residential Activities

The City staff evaluated all residential activities that have the potential to occur within the City of Del Mar. As required by section D.3.c.(1) of the Permit, the evaluation considered that, at minimum, high priority residential activities shall include:

- Automobile repair, maintenance, washing, and parking
- Home and garden care activities and product use (pesticides, herbicides, fertilizers)
- Disposal of trash, pet waste, green waste, and household hazardous waste (e.g., paints, cleaning products)
- Any other residential source that the City determines may contribute a significant pollutant load to the MS4

Evaluation of potential *high threat to water quality* activities included an assessment of those residential activities identified by the City's Regional Outreach Workgroup (source: Project Clean Water (PCW) website) and a review of the high priority residential activities identified in the City of Del Mar's 2002 JURMP. The residential activities in the 2002 JURMP are similar to those identified by the Copermitees. In order to comply with the Permit and reduce discharges of pollutants from the MS4 to the maximum extent practicable, City staff identified the following residential activities which have the potential to pose a high threat to water quality within Del Mar:

- Automotive and Equipment Maintenance
- Vehicle Washing
- Irrigation Practices/Management
- Irrigation System Testing
- Landscape Maintenance
- Fertilizer Application
- Pesticide Application
- Pet Waste Disposal
- Power Washing
- Septic System Maintenance
- Sewer System Maintenance
- Minor Home Maintenance, Repair and Upgrades

8.3 Best Management Practice Requirements

This section provides a list of minimum BMPs that will be required to be implemented when high priority residential activities are conducted within the City of Del Mar (Permit sections D.3.c.(2) and J.1.a.(3)(g)ii). This section also includes a description of which pollution prevention methods will be encouraged to be used by Del Mar residents (Permit sections D.3.c.(2)(b) and J.1.a.(3)(g)iii).

8.3.1 Updated BMP Requirements

The City has identified landscape irrigation, irrigation water, lawn watering, and minor home maintenance activities as significant sources of pollutants. This section describes the enhanced BMP requirements in order to control stormwater pollutant discharges from the identified sources. Excessive flows that originate from the irrigation practices and landscaping activities result in flow increases in the storm drain system which allows for mobilization of pollutants through the storm drain system and into the receiving waters. In the absence of these excessive flows, any pollutants in the storm drain system would remain stationary and subject to removal by regular storm drain system maintenance and cleaning. Therefore, these irrigation and landscape over-watering activities, if they cause excessive discharges to the storm drain system, have been determined to have the possibility of discharging pollutants and are subject to BMPs. Minor home maintenance activities such as repairs and upgrades, involves activities such as minor demolition, storage of raw materials, usage of household chemicals such as paints, solvents, cleaners, and disposal of hazardous materials. These activities contribute as a significant source of pollutants such as oil, grease and fuels, toxic chemicals, sediments, and heavy metals in the stormwater runoff that eventually discharges into the receiving water bodies and hence are subjected to BMPs.

8.3.1.1 Residential Activity Specific Minimum BMPs

The City has designated a minimum set of BMPs for residential activities which pose a high threat to water quality. These minimum BMPs will be required to be implemented in *all* residential areas within the City when high priority residential activities are conducted.

This list of BMPs was developed after thorough evaluation of several BMP resources including, BMPs identified in the 2002 JURMP, the *Project Clean Water BMPs for the San Diego Region* website¹ and City of Del Mar Jurisdictional Urban Runoff Management Program 2007 Annual Report. In addition, Clean Water staff used best professional judgment and their awareness of residential activities known to take place in Del Mar to establish the minimum BMPs. The activity-specific, minimum BMPs for high threat to water quality residential areas and activities can be found in Appendix 8-A. This set of BMPs will be updated as new technology or ideas become available. Descriptions of these BMPs, including BMP objectives and implementation strategies, can be found on the Project Clean Water website.¹

8.3.1.2 Pollution Prevention Methods

Pollution prevention methods have been incorporated into the City's minimum set of BMPs. City staff considers pollution prevention the first line of defense in the effort to minimize residential activity impacts to water quality. The pollution prevention practices and processes aim to reduce or eliminate the generation of pollutants. For example, alternative products which are less toxic to aquatic organisms can be used in place of conventional cleaning and household products. Common products which have safer alternatives include: soaps, detergents, oil based cleaners, fertilizers, pesticides, paints, and solvents.

The City will encourage the use of pollution prevention methods by residents through the implementation of educational outreach programs and enforcement of the minimum residential BMPs. Section 8.4 describes this implementation process.

¹ Project Clean Water BMPs for the San Diego Region: <http://www.projectcleanwater.org/bmp/>

8.3.1.3 Additional Controls for Residential Areas and Activities Discharging or Tributary to ESAs

As required by section D.3.b.(2)(f) of the Permit, the City of Del Mar will require the implementation of additional controls for residential areas and activities that are tributary to CWA section 303(d) impaired water body segments, as necessary.

The two 303(d) listed water bodies within the City of Del Mar include the mouth of the San Dieguito Lagoon, listed for bacteria, and the Los Peñasquitos Lagoon, listed for sediment. In Section 8.2 all residential activities were identified as high priority activities. Additional controls or BMP's are required by Permit section D.3.b.(2)(f) to be implemented for all residential areas and activities which are discharging bacteria and sediments into receiving the water bodies. Minimum BMPs were established for these activities. If discharges occur, even with minimum BMPs in place, additional controls will be required to be implemented in order to avoid impacts into impaired receiving waters. It is anticipated that there will be few incidences where additional controls will be necessary, therefore City staff will address the implementation of additional controls on a case by case basis.

8.4 Program Implementation

This section describes the strategy and tools used by the City of Del Mar Stormwater Program staff to require and encourage residents to implement the designated minimum BMPs. As discussed in Section 8.2 of the City's JURMP, all residential areas in the City of Del Mar have been classified as having a high threat to water quality. Therefore, minimum BMPs will be required to be implemented in all residential areas within the City of Del Mar. Implementation of minimum BMPs will be facilitated through a combination of residential education, complaint investigation, and code enforcement. Residential education will include the local educational outreach program prepared by the City and the Regional Residential Education Program. A description of the Regional Residential Education Program developed by the Copermitees is provided in Appendix 8-B.

8.4.1 Jurisdictional Outreach and Education (Section D.3.c.(2)(d)-(f))

The City of Del Mar will utilize several different education outreach tactics aimed at educating residents about local stormwater regulations and promoting the implementation of the minimum BMPs for residential areas and activities. The following section will briefly describe the tools that will be used by the Clean Water Program staff to educate residents. For more detail regarding the City of Del Mar stormwater outreach program refer to the education component (Section 10) of the JURMP developed by the City of Del Mar. The strategy discussed in the education component for educating residential community involves a multi-media approach such as internet, television, and radio campaigns which enabled conveyance of priorities and objectives to the residential community. Local community outreach events such as cleanup events around the creek and beaches, events focused on a wide range of environmental issues related to stormwater pollution and prevention, and campaigns focused on litter prevention, used oil recycling, and household hazardous waste are conducted to encourage awareness and public involvement in stormwater quality protection. Detailed description of the various outreach and educational activities is provided in the Education Component (Section 10) of the City's JURMP.

8.4.2 Regional Residential Education Program (Section D.c.(5))

The City of Del Mar participated with the other Copermittees to develop the Regional Residential Education Program. As required by section F.1 of the Permit, the program includes pollution-specific education which focuses outreach efforts on residential sources of bacteria, nutrients, sediment, pesticides and trash. The targeted sources of these pollutants include pet waste, maintenance and cleaning of outdoor areas, irrigation runoff, lawn and garden care, and trash and litter. The goals of the regional program are to make the public aware of the specific residential activities that can lead to impaired water quality and to prompt behavior changes relating to these activities. Education of residents will target two types of audiences—the general public and the underserved (low-socio economic communities). The methods used to educate residents will include: a website, broadcast and outdoor mass media, public relations, material distribution, partnerships (business, non-profit, etc.), and participation in local or regional community outreach events. At this time, no low-socio economic communities have been identified in the City of Del Mar. The City will periodically assess the program's effectiveness and modify the program as necessary based on the results of the assessment.

The City of Del Mar will participate in the implementation of the Regional Residential Education Program. Participation may include, but will not be limited to, periodic attendance to regional coordination meetings, financial contribution, and/or contribution of staff time to comment on and for the production of educational materials or participation in regional outreach events.

8.4.3 Household Hazardous Waste Disposal (Section D.3.c.(2)(c))

The City's waste management contractor provides curbside Household Hazardous Waste (HHW) pickup to all City of Del Mar residents for a nominal fee of ten dollars per 125-pound pickup. In addition, Del Mar residents may take their hazardous waste to the permanent HHW collection facilities in Vista or Poway. The Vista and Poway HHW collection facilities are currently open Saturdays from 9am to 3pm for HHW collection. Information about the HHW collection facilities and curbside pick-up is available on the City's website and will also be promoted by the City through several community publications. These include: City newsletters, the Del Mar Times newspaper, and in water billing inserts. There is also literature available to the public at the City offices. Additionally, the City staff provides information to the public when hosting public outreach events.

8.4.4 Incident Reporting and Complaint Investigation

The Clean Water Program staff relies on the public and other staff members to assist with the detection of potential stormwater violations. Phone hotlines have been established to screen incoming reports from the public. In addition, City staff, especially those working in the field, know to contact Clean Water Program or Code Enforcement personnel if any resident is found to be conducting a residential activity that is a high threat to water quality without implementing the proper BMPs. Clean Water Program staff will follow-up on all reports relating to residential activities and minimum BMPs. Follow-up will likely involve a site investigation of the reported incident. The hotline system and complaint investigation procedure is described below.

- **Hotlines.** The City of Del Mar relies on the County's regional stormwater hotline, City departmental phone numbers, and the City's main number to receive stormwater complaints from the public. Any calls to the County hotline for incidences in the City of Del Mar are forwarded to Del Mar Clean Water Program staff. Locally, Del Mar

residents are encouraged to contact the City's main line to file complaints including stormwater or illicit discharges. The regional public hotline and local City department phone numbers are publicized in various publications, on various web sites (including City of Del Mar and County of San Diego websites), and at local community events and meetings where educational literature is distributed. Most urban runoff related handouts and educational materials also include the hotline number. Public education stresses the importance of reporting and describes the critical role that the public plays in the identification and elimination of urban runoff pollution related problems.

- **Complaint Investigation.** Complaints received through the stormwater hotline are reviewed by Clean Water Program staff. Based on the details of the report, Clean Water Program staff will determine whether a site investigation is necessary. Site investigations may involve, but would not be limited to, visual inspection of the residential property, meeting with the resident, and collecting water samples if a discharge is occurring at the time of inspection. If the report contains enough information—for example, a detailed description and photos of the incident—Clean Water Program staff may opt to implement an enforcement action without conducting a site investigation. Enforcement may include issuance of a formal warning, notice of violation, and/or citation, depending on the egregiousness of the incident.

8.5 Enforcement (D.c.(3))

Enforcement of the required minimum BMPs for residential activities will be implemented by the City's Clean Water and Code Enforcement staff. An enforcement action will typically occur as a result of a hotline report or a complaint investigation. The City employs several levels of enforcement mechanisms and penalties to ensure the compliance with its ordinances. The levels of enforcement and associated penalties are typically issued at the discretion of the Code Enforcement officer or Clean Water Program staff with consideration of relevant circumstances regarding the violation. The levels of enforcement include:

1. Verbal warnings
2. Written warnings
3. Notices of Violation
4. Administrative citations
5. Administrative abatement procedures
6. Suspension, Revocation, or Denial of Permits
7. Civil and/or Criminal Court Actions

Educating residents about the minimum BMPs for residential activities will play a significant role in enforcement. Any resident found performing an activity that has the potential to impact water quality without implementing the required minimum BMPs will first receive a verbal or written warning. This warning will include educational materials provided to the resident and/or a discussion between the City staff member and the resident about the stormwater ordinance and BMPs.

Clean Water Program staff will keep a record of residential incidents and related enforcement actions. If a resident is found conducting repeat violations of the same activity, enforcement will be escalated. In addition, if a resident is not only conducting an activity which has the potential to impact water quality without implementing minimum BMPs, but in doing so is, also generating a discharge from his or her property, Clean Water staff may opt to issue a notice of violation and or citation rather than a verbal or written warning.

8.6 Annual Reporting (Section J.3.a.(3).(e))

Each JURMP Annual Report must contain a comprehensive description of all residential activities conducted by the City of Del Mar to meet all requirements of section D.3.c of the permit. The reporting period for these annual reports shall be the previous fiscal year. For example, the report submitted September 30, 2008 shall cover the reporting period July 1, 2007 to June 30, 2008.

Following is the list of items to be covered in the Annual Report:

- Identification of the high threat to water quality residential areas and activities that was focused on.
- Confirmation that the designated BMPs were implemented, or required to be implemented, for residential areas and activities.
- A description of efforts implemented to facilitate proper management and disposal of used oil and other household hazardous materials.
- Types and amounts of household hazardous wastes collected, if applicable.
- A description of any evaluation of methods used for oversight of residential areas and activities, as well as any findings of the evaluation.
- The number of violations and enforcement actions (including types) taken for residential areas and activities, including information on any necessary follow-up actions taken. The discussion should exhibit that compliance has been achieved, or describe actions that are being taken to achieve compliance.
- A description of collaboration efforts taken to develop and implement the Regional Residential Education Program.
- A description of notable activities conducted to manage urban runoff from residential areas and activities.

8.7 Residential Component Effectiveness Assessment D.c.(4)

The City of Del Mar will assess the effectiveness of the Residential Component consisting of the educational and outreach efforts and BMP implementation in the residential sectors of the community. The effectiveness assessment will be based on the established regional effectiveness assessment guidelines. The assessment of all components of the City's JURMP, including the Residential component, is discussed in Chapter 13 of the City's JURMP.

8.8 Program Review and Modification (Permit Section K)

After each annual assessment of the Residential Component's effectiveness, any proposed or required modifications to the program will be placed in this section and referred to in Chapter 14 of the City's JURMP, per Permit Section K.

**Appendix 8-A
Minimum BMPs for Residential Activities**

**Appendix 8-B
Regional Residential Educational Program Manual**

Regional URMP Attachment A-3

REGIONAL RESIDENTIAL EDUCATION PLAN

FINAL REVIEW DRAFT -- March 17, 2008

Submitted by the San Diego Stormwater Copermittees in partial fulfillment of the requirements of San Diego Regional Water Quality Control Board Order No. R9-2007-0001 (the San Diego Municipal Stormwater Permit)

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1.0 INTRODUCTION

The Regional Residential Education Program (Program) is a joint effort by the Copermittees of the Municipal Stormwater Permit (Order No. R9-2007-0001, NPDES No. CAS0108758). The Regional Residential Education Plan (Plan) contains recommended strategies for the successful development and implementation of the Program. Per section F.1 of the Permit, as amended by Addendum No. 1 on December 12, 2007, this Program must be collaboratively developed and implemented by March 24, 2008.

In the past, Copermittees have been limited in their ability to pursue strategies which may have a much greater potential to influence knowledge and behavioral change in residential populations. There are several benefits to implementing an enhanced regional Program to target residential sources of stormwater pollution. First, it will encourage the development of consistent messages throughout the region. Second, a regional approach will enable Copermittees to better leverage resources and utilize economies of scale. Finally, stormwater and urban runoff pollution frequently cross jurisdictional boundaries, making collaborative approaches a necessity. While the regional Program will be coordinated extensively among the Copermittees, it is not meant to replace or supplant the jurisdictional and watershed programs.

The overall goals of the Program are to increase awareness and knowledge, improve attitudes toward stormwater pollution and provide a foundation for changing behaviors that contribute to stormwater pollution. Based on extensive input from the Copermittee Regional Stormwater Management Committee (RMC) and the Education & Residential Sources Workgroup, as well as an independent analysis of existing educational efforts, the following objectives were developed to support these goals:

1. Maintain a consistent image, message, and brand
2. Use positive messages to increase knowledge and awareness, and ultimately change behavior
3. Develop community partnerships to leverage resources

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32 4. Develop assessment strategies for program effectiveness

33

34 The Regional Education & Residential Sources Workgroup advises the RMC on regional
35 shared outreach activities as necessary to support the requirements of the Permit. The
36 Education & Residential Sources Workgroup plans, develops, and implements the
37 various aspects of the stormwater education program. Education & Residential Sources
38 Workgroup participants have traditionally combined efforts to reach business, industrial,
39 and residential communities across the San Diego region. However, in accordance with
40 the most recent NPDES Permit, this Plan represents a distinct effort to target residential
41 sources of stormwater pollution.

42

43 Messages developed by the Education & Residential Sources Workgroup are designed to
44 increase knowledge and awareness of regional stormwater issues and encourage positive
45 changes in behavior. Assessment methods and measures have also been developed to
46 evaluate the effectiveness of these messages and the strategies used to deliver them.
47 Program evaluation methods and strategies will evolve as various program elements are
48 implemented. Regional assessment methods will measure knowledge, awareness, and
49 attitudes of residents. Regional Program elements that are determined to be ineffective or
50 least effective will be replaced by more effective elements or improved upon as needed.
51 The regional Program will also facilitate the measurement of changes in pollutant
52 generating behaviors by the jurisdictional and watershed programs.

53

54 As a basis for developing this Regional Residential Education Plan, the Copermittees
55 contracted with TRG & Associates to develop *Recommended Options for the San Diego*
56 *Regional Stormwater Educational Program*. This document contains a number of
57 recommended strategies for the successful development and implementation of a regional
58 residential education program. It includes an extensive literature review, an analysis of
59 existing educational programs in San Diego, and a comprehensive list of public
60 awareness surveys. The literature review outlines other programs in the State that have

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61 successfully implemented regional residential stormwater education programs. The
62 document also summarizes the strengths and weaknesses of existing residential education
63 efforts, provides suggestions for how they can be improved, provides a brief analysis of
64 baseline public awareness surveys that have been implemented locally within the last five
65 years, and offers recommendations for improving assessment methods and survey
66 instruments.

67

68 **2.0 SOURCE CHARACTERIZATION**

69 The San Diego region occupies 4,261 square miles with a population of approximately 3
70 million people. Estimates for the year 2007 indicate that the San Diego regional
71 population is 29% Hispanic and 71% non-Hispanic. Non-Hispanic persons include
72 African Americans, American Indians, Native Hawaiians, Asians, and persons of a
73 multitude of races, ethnicities, and cultures. SANDAG currently estimates that the
74 median household income in the San Diego region is \$68,388. According to the US
75 Census Bureau in 2004 only 10.9% of San Diego's population was living below the
76 poverty level, compared to 13.2% Statewide. Other estimates indicate that as much as
77 25% of California's population is living below the poverty level. Much of the region's
78 quality of life revolves around the water resources.

79

80 Residential areas have been shown to be a prevalent source of urban runoff in the San
81 Diego region, although less than ten percent of the region is developed as residential land.
82 Most of the urban activity is clustered in the western third of the county, near coastal
83 areas. However; residential land-based activities throughout the entire region contribute
84 to polluted stormwater runoff.

85 The Regional Residential Education Program will focus efforts on high priority
86 residential pollution sources that are common throughout the San Diego region. Water
87 quality monitoring data and source characterization studies have provided the
88 Copermittees with useful information in determining regional residential sources of
89 stormwater pollution and constituents of concern. Regional threats to water quality were
90 initially outlined in the Report of Waste Discharged and finalized in the Permit. Section

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91 F.1.a of the Permit describes the process for determining which pollutants will be
92 addressed by the Program.

93 **2.1. Regional Constituents of Concern**

94 The following constituents of concern were determined to be the primary pollutants from
95 residential sources for the San Diego region:

- 96 • Bacteria
- 97 • Nutrients
- 98 • Sediment
- 99 • Pesticides
- 100 • Trash

101

102 Some jurisdictions may have additional high priority pollutants. Each jurisdiction will be
103 individually responsible for addressing additional pollutants and their sources. The
104 pollutants listed above will remain the focus of the Regional Residential Education
105 Program.

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106

107 **2.2. Pollutant-generating Activities and Constituents of Concern**

108 Table 1 outlines residential pollutant generating activities and associated constituents of
109 concern generated by residential areas in the San Diego region.

110 **Table 1) Pollutant Generating Activities**

Pollutant Generating Activities	Priority Constituents				
	Bacteria	Nutrients	Pesticides	Sediments	Trash
<ul style="list-style-type: none"> • Leaving pet waste in yard, street or sidewalk • Improper disposal of pet waste 	X	X			
<ul style="list-style-type: none"> • Over-irrigation • Improper irrigation and system maintenance 	X	X	X	X	
<ul style="list-style-type: none"> • Fertilizer use • Pesticide use • Landscaping activities 	X	X	X	X	
<ul style="list-style-type: none"> • Cleaning outdoor impervious surfaces (i.e., driveways and patios) 	X	X		X	X
<ul style="list-style-type: none"> • Improper waste disposal 	X	X	X	X	X

111

112 **2.3. Target Audiences**

113 As described above, this Program is intended to address the entire residential community
114 of the San Diego region. This residential audience will be further described in terms of
115 two specific target audiences in order to design more effective education and outreach
116 strategies. The target audiences for the Regional Residential Education Program have
117 been identified based on information gathered by the consultant (TRG and Associates),
118 who utilized data from market research conducted by the County and City of San Diego
119 and surveys gathered from other case studies. Although there may be other smaller
120 groups of target audiences, regional outreach must realistically target the highest priority
121 demographics in order to effectively utilize program funds. The following describes the
122 target audiences for the campaign:

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- 123 1. Primary Target Audience- English speaking residents and homeowners
124 2. Underserved Target Audience- Spanish speaking communities and Low
125 Socio-Economic Status (SES)

126

127 One of the challenges of program implementation will be to develop messages that
128 appeal to these communities. While creating content and developing materials for the
129 primary target audience may be relatively straightforward, methods and approaches will
130 need to be modified in order to engage the Underserved Target Audience. For example;
131 some messages will be more conducive to translation into the Spanish language than
132 others. Once translated, Spanish language media will be used to disseminate these
133 messages.

134

135 According to the US Census Bureau, 33% of San Diego County residents speak a
136 language other than English at home (2000). The same data indicates that 26.7 % of the
137 regional population is Hispanic or Latino. Although this number varied within
138 jurisdictions from 49.5% in Chula Vista to 11.7% in Carlsbad, it is clear that every
139 jurisdiction in the region has significant populations of Hispanic or Latino residents.
140 Therefore, although there are many languages spoken in San Diego, Spanish speaking
141 communities are likely the most common throughout the region.

142

143 Research indicates that the motivating factors in Spanish speaking communities are 1)
144 health and commitment to family, 2) children, and 3) finances. Similar priorities are
145 found within the low SES communities. Hence, some messages will resonate more
146 strongly with the communities among the Underserved Target Audience. Other messages
147 may need to be modified in order to create a more appealing campaign. Low SES in
148 California is defined as household annual income less than \$25,000. Low SES residents
149 tend to obtain information and resources from different sources than the residents within
150 the Primary Target Audience. Again, message delivery becomes a key issue. In order to
151 address all of these issues, specific outreach strategies will need to be developed in order
152 to effectively reach the Underserved Target Audience.

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154 **3.0 TARGETED CHANGES TO KNOWLEDGE, AWARENESS AND**
155 **BEHAVIOR**

156 The overall goals of the Regional Residential Education Program are to raise the levels of
157 knowledge and awareness with regards to stormwater pollution among residents, while
158 encouraging changes to behaviors that are harmful to San Diego’s waterways. The
159 program will generally educate residents on 1) The difference between stormwater
160 conveyance systems and sanitary sewer systems 2) the connection of storm drains to local
161 waterways and 3) common residential sources of urban run-off. These are the general
162 knowledge and awareness concepts upon which more specific messages will be built.

163

164 Recent research indicates that many residents do not understand that storm drains and
165 sanitary sewer systems are completely separate. While sewage is treated, everything that
166 goes down a storm drain goes directly to a creek, bay, or the ocean. The City of San
167 Diego conducted a public opinion survey in 2007 in which 91% of respondents said they
168 had heard the term “storm drain” before. However, only 46% knew that the water
169 entering storm drains is not treated. This is a fundamental stormwater pollution
170 prevention issue and general awareness concept. Awareness of the stormwater
171 conveyance system is the first step towards understanding pollution prevention.
172 Increasing knowledge and awareness that the system leads directly to local waterways
173 will help residents to understand that urban sources of pollution have a direct effect on
174 water quality. The awareness and knowledge of these issues are precursors to
175 adjustments in attitudes (i.e.: increased concern for preventing this type of pollution).

176

177 Ultimately, it is anticipated that the programs targeting increased awareness and
178 knowledge of these concepts will lead to positive changes in attitude. Furthermore,
179 improved attitudes toward the importance of stormwater issues can provide motivation
180 for changing pollutant generating behaviors.

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182 In keeping with the program goals, the Copermittees have agreed on a number of positive
183 behavior outcomes for each stormwater issue presented to the target audience. Pollutant
184 generating activities are listed in Table 2, along with the knowledge required to
185 understand the significance of the stormwater impacts. Also listed are numerous
186 examples of desired behavior outcomes. Since it may not be feasible to craft messages
187 that address each of the desired behavior outcomes listed in Table 2, some behaviors may
188 be considered primary and targeted before others. Secondary behaviors will be targeted
189 only if the initial efforts are determined to be unsuccessful. It is important to recognize
190 that the Copermittees agreed on these issues and the associated behaviors, and some may
191 wish to further utilize the concepts listed in Table 2 in their jurisdictional and/or
192 watershed programs.

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194 **Table 2) Pollutant Generating Activities and Examples of Positive Behavior**

Pollutant Generating Activities	Knowledge/Awareness	Examples of Desired Behavior Outcomes
<ul style="list-style-type: none"> • Leaving pet waste in yard, street or sidewalk • Improper disposal of pet waste 	Pet waste left in the yard and streets may introduce solids, bacteria, and nutrients to the storm drain and/or receiving water bodies.	<ul style="list-style-type: none"> • Pick up pet waste during walks • Pick up pet waste around home • Properly dispose of pet waste in trash can or bin
<ul style="list-style-type: none"> • Over-irrigation • Improper irrigation and system maintenance 	Over-irrigation causes water and pollutants in its path to run into the storm drain and/or receiving water bodies.	<ul style="list-style-type: none"> • Reduce over-irrigation • Use irrigation controller technology to reduce the amount of over-watering • Inspect and maintain irrigation system regularly • Adjust irrigation schedule according to seasonal changes
<ul style="list-style-type: none"> • Fertilizer use • Pesticide use • Landscaping activities 	Fertilizers and pesticides become pollutants that can be harmful to natural ecosystems when entering receiving water bodies. Soil, sediment, and yard waste can clog storm drains and/or receiving water bodies.	<ul style="list-style-type: none"> • Use plants that reduce the need for fertilizers (i.e.: native plants) • Apply chemical fertilizers and pesticides only as needed and at the appropriate time • Use organic or slow-release fertilizers • Use Integrated Pest Management • Store chemicals inside in a shed or storage cabinet where they are protected from rainfall • Collect grass clippings and yard waste • Dispose of grass clippings and yard waste in the proper containers • Protect exposed soil from rain with a tarp, vegetation, and/or mulch
<ul style="list-style-type: none"> • Cleaning outdoor impervious surfaces (i.e.: driveways and patios) 	When it rains, trash, dirt, and chemicals that have built up on these surface can run into the street, the storm drain, and eventually local waterways.	<ul style="list-style-type: none"> • Clean driveways, walkways, and patios by sweeping instead of hosing • Direct wash water to soak in to lawn or garden
<ul style="list-style-type: none"> • Improper waste disposal 	Litter and debris dropped on the ground will be washed into storm drains and local water bodies.	<ul style="list-style-type: none"> • Put litter and cigarette butts in trash cans or bins • Keep lids closed on trash cans or bins

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196 Although many positive behaviors have been identified that may be encouraged by the
197 messages developed in this Program , the following have been selected as the primary
198 desired behaviors to result from the changes to knowledge, awareness, and attitudes:

- 199 • Pick up pet waste and properly dispose of in trash can or bin
- 200 • Reduce over-irrigation by regularly inspecting and maintaining irrigation systems
- 201 • Reduce fertilizer use by applying chemical fertilizer only as needed and using organic
202 or slow-release fertilizers
- 203 • Reduce chemical pesticide use through Integrated Pest Management
- 204 • Collect grass clippings and yard waste and place them in the appropriate disposal
205 container in order to prevent them from entering the storm drain systems
- 206 • Sweep up outside areas such as driveways, walkways, and patios instead of hosing
207 them down
- 208 • Put litter and cigarette butts in trash cans or bins

209
210 Specific messages will be designed to increase knowledge and awareness, and therefore
211 encourage the behaviors listed above. Regional messages will be initially developed to
212 address only the primary targeted behaviors. Once a baseline is established and program
213 implementation is underway, Copermittees will have the opportunity to evaluate the
214 knowledge, awareness, and willingness of the residential target audiences to adopt these
215 behaviors. Other positive behaviors from Table 2 may also be substituted, if necessary.

216 It can reasonably be expected that the regional program will be able to measure success
217 in terms of increasing knowledge and awareness, and improving attitudes, of residents.

218
219 Knowledge describes the accuracy of one’s beliefs and awareness indicates recognition
220 of the severity of the issues whereas attitude can be described as an individual’s
221 evaluation of it (favorable or unfavorable).

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223 As a result of the regional efforts, Copermittees expect to see an increase in the general
224 awareness of storm drain systems and their connection to local waterways, as well the
225 sources of urban run-off. Specifically, residents should understand the difference between
226 the stormwater conveyance system and sanitary sewer systems. They should become
227 aware that water entering storm drains flows untreated to local waterways. Residents
228 should also be able to accurately identify sources of stormwater pollution (i.e.: pet waste).
229 Attitudes toward stormwater pollution should also improve. Ideally, there will be an
230 increase in the numbers of households or individuals engaging in the desired behavior
231 outcomes as a result of their increased knowledge and awareness. These targets will be
232 measured using the assessment methods described in Section 6.0.

233

234 The primary assessment tool will be the public opinion surveys. A baseline regional
235 residential telephone survey will be conducted in 2008 and, ideally, at one other point
236 during the first permit cycle. The numeric objectives for survey results are set so that they
237 exceed the statistical margin of error of 2.5 percent (assuming a sample size of 1000) so
238 that if they are achieved, they will be statistically significant. In addition, the objectives
239 are intentionally set high, with the understanding that they are intended as a point of
240 reference rather than a pass/fail measure. With that in mind, Copermittees have set a
241 target of a 10% change in knowledge that storm drains are separate from sanitary sewer
242 systems, a 10% increase in the awareness that all storm drains are connected to local
243 waterways, and a 15% increase in the number of participants who can identify residential
244 sources of stormwater pollution.

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245

246 **4.0 EDUCATIONAL METHODS AND APPROACHES**

247

248 A variety of methods and approaches will be utilized to implement the program
249 objectives. As described above, the Regional Residential Education Program objectives
250 are 1) to maintain a consistent image and brand 2) use positive messages to change
251 behavior 3) develop community partnerships and 4) develop strategies to assess program
252 effectiveness. The following regional program elements are designed to meet these
253 objectives:

- 254 • Standardized Regional Brand (Think Blue)
- 255 • Regional Think Blue Website
- 256 • Mass Media (Broadcast and Outdoor)
- 257 • Regional Outreach Materials (Development and Distribution)
- 258 • Regional Outreach Event
- 259 • Partnerships
- 260 • Regional Stormwater Hotline
- 261 • Public Relations

262

263 Some of the elements are designed for program management whereas others are outreach
264 methods. Program management elements include standardizing the Think Blue brand,
265 message and material development, and partnership development. The Program will
266 have a multi-faceted outreach approach utilizing a regional website, mass media
267 (broadcast and outdoor), public relations, printed materials and promotional items, and
268 regional outreach such as a community event. Implementation of all the
269 recommendations is dependent on funding for each year. Therefore, some activities may
270 be feasible only if sufficient or additional funds are available in a given year.

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271

272 **4.1 Standardized Regional Brand (Think Blue)**

273 The Think Blue campaign has created a locally recognizable brand that has demonstrated
274 effectiveness in stormwater outreach. Expanding the brand to the regional program has
275 obvious benefits for all of the Copermittees. With a consistent look and brand, the
276 Copermittees can continue to conduct their own outreach; however they can use the
277 Think Blue brand in conjunction with their materials for consistency. There will be a
278 Think Blue Graphic Standards Guide that provides the correct fonts, colors and standards
279 to be used for all outreach materials. This will help reinforce the Think Blue brand and
280 provide standards for its use in messages and materials. Messages and materials may
281 need to be continuously revised in order to keep current and effectively reach target
282 audiences.

283

284 **4.2 Regional Think Blue Website**

285 A regional Think Blue website will help build upon and reinforce the branding strategy.
286 The Internet is a powerful means of communication. Web sites can reach large audiences
287 with relatively minimal effort. The regional website will be developed and maintained by
288 a contractor. It could contain easy to download, user friendly information sheets, links to
289 Copermittees websites, and short surveys or quizzes. The regional web site, along with
290 the new logo and slogan, will increase program visibility.

291

292 **4.3 Mass Media**

293 Although the website is an important component of the outreach efforts, many residents
294 still get the great bulk of their environmental messages from more traditional venues such
295 as the television and radio (broadcast media). Public Service Announcements (PSA) and
296 advertisements are the most common forms of broadcast media. Some PSAs have
297 already been developed under the Think Blue campaign and through the combined efforts
298 of the Copermittees. The Copermittees can utilize funds to expand or complement the
299 existing Think Blue campaign. The public relations component will involve news
300 coverage such as news stories, interviews, and event coverage. Public relations provide

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301 valuable outreach opportunities that will be sought whenever possible. Outdoor media
302 such as bus placards and billboards can also be utilized for outreach. The location of
303 outdoor media advertisements will need to be carefully placed in order to reach the
304 regional target audience.

305

306 **4.4 Regional Outreach Materials and Community Events**

307 Print materials and promotional items are critical items for successful outreach.
308 Materials include items like fact sheets, brochures, flyers, booklets, coupon booklets,
309 posters, and doorknob hangers. These materials are easily created and the target audience
310 can refer to them repeatedly. Promotional materials are good for promoting the regional
311 brand, increasing knowledge and awareness, and encouraging simple actions to prevent
312 stormwater pollution. They will be designed to also serve as visual prompts that remind
313 people to choose behaviors that protect and improve water quality.

314

315 A regional outreach event can be an energizing and successful venue for distributing
316 outreach messages. Careful attention should be given to participating in a community
317 event so that the effort reaches residents from the entire region. Extensive planning,
318 material or display development, coordination, and marketing will be necessary in order
319 to prepare for one successful regional outreach event. This is an endeavor that will
320 involve identifying events that reach the entire region as well as coordinating, funding,
321 and staffing the selected event. The Copermittees expect to participate in up to two
322 regional events over the duration of this permit cycle. Some examples of regional events
323 that may be considered are the San Diego County Fair, the Miramar Air Show, or a local
324 sports venue.

325

326 **4.5 Partnerships**

327 Partnerships are both a management and outreach element of the program. A partnership
328 is a voluntary collaboration of agencies, organizations, or other groups or individuals that
329 have joined to work toward a common goal. The Copermittees can maximize resources
330 through the use of partnerships. The potential for partnerships is immense for the

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331 Copermittees. Potential partnerships include local water districts (combine conservation
332 and pollution prevention messages), hardware stores and nurseries, pet stores, and
333 Homeowner’s Associations and Property Management Companies. Initial development
334 of partnerships with businesses and business organizations, nonprofits, other government
335 agencies, will be necessary before the full benefits can be realized. Copermittees may
336 then encourage partners to distribute materials or spread messages through signage,
337 advertising and websites. Partnerships will require time to develop and may not be fully
338 recognized until later in the permit cycle.

339

340 **4.6 Regional Stormwater Hotline**

341 Although a regional stormwater hotline is already in place, successful outreach may lead
342 to an increase in hotline calls. The regional hotline can also help the public gain access to
343 information quickly and easily. The hotline will be promoted through the website, media
344 advertising and other promotional venues. The number of calls to the hotline can be
345 tabulated to help gauge whether some advertising is effective (if the call to action is a
346 hotline call). Since the hotline will also be an important measure of program success,
347 careful consideration will be given to managing the hotline as the program
348 implementation moves forward.

349

350 **4.7 Behavior Specific Outreach Methods**

351 Table 3 lists the primary target behaviors for the Program during this permit cycle. The
352 table indicates which of the outreach methods described above may be utilized to deliver
353 messages designed for each behavior. These were selected as the primary targets because
354 they have current appeal. Primary target behaviors may be updated as program
355 evaluation progresses. If necessary, resources may be reallocated to address the other
356 (secondary) target behaviors previously listed in Table 2.

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357

358 **Table 3) Applicability of Outreach Methods to Primary Target Behaviors**

Primary Target Behaviors	Potential Methods of Outreach						
	Website	Mass Media Broadcast	Mass Media Outdoor	Public Relations	Material Distribution	Partnerships	Regional Community Events
Pick up pet waste and dispose of in trash bin	X	X	X	X	X	X	
Reduce over-irrigation by regularly inspecting and maintaining irrigation systems	X			X	X	X	X
Apply chemicals to lawn and garden only as needed	X	X		X	X	X	X
Use organic or slow-release fertilizers	X	X		X	X	X	X
Collect grass clippings and dispose of them in the proper container	X				X		
Employ Integrated Pest Management	X	X	X		X	X	X
Sweep outside areas instead of hosing them down	X		X		X		
Put litter and cigarette butts in trash cans or bins	X			X	X	X	X

359

Specific messages will be developed to increase knowledge and awareness that will lead to each desired behavior outcome

360

361

362 **4.8 Program Implementation**

363

While the overall goals of the program are to educate the general public in order promote

364

knowledge and awareness and decrease pollutant generating behaviors, a successful

365

program will also require coordination among the Copermittees. Program planning and

366

message development are key components of the program that will precede full

367

implementation. Message delivery will be ongoing. Subsequently, as results from

368

assessments are reviewed, messages and delivery methods will need to be revised.

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369 Therefore, there are essentially three steps in the program implementation process 1)
370 development, 2) implementation, and 3) assessment. For the purposes of this report, the
371 development phase includes planning projects as well as developing materials and
372 messages. Implementation includes initiating a program element (such as media
373 outreach) as well as maintaining the ongoing nature of the element once it is in place.
374 Assessment includes all levels of determining the effectiveness of program elements, as
375 well as making revisions that reflect the knowledge gained through assessment.

376

377 Table 4 charts the schedule of program implementation over the 5-year permit cycle.
378 Strategies to achieve these objectives will be implemented over the 5-year permit cycle.
379 Because some upfront planning and development is necessary, the first year will focus on
380 standardizing a regional brand, developing messages, and determining the most
381 appropriate methods for disseminating messages on a regional scale (i.e.: a regional
382 website). Copermittees may also begin fostering partnerships in the initial years of the
383 program. Subsequent years will build on this foundation. Copermittees may decide to
384 refine messages and could begin leveraging resources through partnerships.

385

386 **Table 4) Projected General Implementation Schedule**

Program Elements	Year 1: 2007-08	Year 2: 2008-09	Year 3: 2009-10	Year 4: 2010-11	Year 5: 2011-12
Branding	D	D, I, A	I, A	I, A	I,
Regional Website	D	D, I, A	I, A	I, A	I,
Regional Hotline	D	D, I	I, A	I, A	I,
Mass Media	D	D, I	I, A	D, A	I,
Regional Outreach (Marketing and Community Events)	D	D, I	I, A	D, A	I,
Materials Development & Distribution	D	D, I, A	D, I, A	D, A	D, I
Public Relations	D	D, I	I, A	D, A	I,
Market Research & Assessment Tools	D, I, A	D, I, A	D, I, A	D, I, A	D, I,
Partnerships	D, I	D, I,	I, A	I, A	I

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387 Development (D), Implementation (I), Assessment (A)

388 **4.9 Social Marketing Approaches**

389 In all of the aforementioned efforts, a variety of social marketing approaches will be
390 utilized whenever possible. There are so many techniques described as social marketing
391 that it is not possible to utilize them all, especially with limited staff and budgets. Social
392 marketing uses many of the principles of social psychology and marketing techniques to
393 bring about behavior change. Rather than being product oriented, social marketing
394 focuses on people and their behaviors. All social marketing approaches use audience
395 research to learn how to motivate an audience to change one or more recurring actions.

396

397 Social marketing consists of several basic components that result in delivering messages
398 that will increase knowledge and awareness, thereby prompting people to change certain
399 behaviors. The challenge is to present the new behavior in a positive way and emphasize
400 the benefits to adopting a new behavior. Forming strategic partnerships with community
401 resources can help to achieve the end goal of behavior change. Social marketing
402 campaigns deliver messages that are strategically created and positioned to give people a
403 compelling reason to adopt a new behavior. In order to overcome the barriers to action it
404 is necessary to understand what the barriers are and why they exist. Researching and
405 understanding the audience is a critical step in developing a social marketing campaign.
406 Messages are conveyed through advertising, websites, materials and other
407 communications. Messages should be simple, memorable and easy to follow. There
408 should be one simple message for each of the targeted areas of knowledge and awareness.
409 Each message needs to be used consistently in communications.

410

411 Community Based Social Marketing (CBSM) is a type of social marketing. It has gained
412 popular appeal among the environmental community as an effective alternative to
413 traditional information-based marketing approaches. CBSM packages basic principles of
414 behavior change and social science research in a way that provides a usable framework
415 for practitioners working to promote positive behavior change.

416

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417 A key element of the CBSM approach is to pilot test the program with a small
418 representative segment of the community, and compare the results to a control group.
419 For example, a small jurisdiction may implement a project that essentially serves as a
420 pilot for the regional Program. If the pilot is not successful, the strategy should be
421 refined and then pilot tested again. If the pilot is successful at changing behavior, the
422 strategy can be implemented more broadly throughout the community or on a regional
423 level. Once the successful pilot program has been widely implemented CBSM requires
424 that the program be carefully evaluated at several points to measure continued success.

425

426 The Copermittees have agreed that CBSM offers a solid foundation for developing an
427 effective program. However, it may not always be feasible to utilize the CBSM approach
428 on a regional scale, hence the need for a combined approach that uses traditional social
429 marketing techniques as well as CBSM. Some methods will lend themselves more
430 readily to developing CBSM based approaches. When implementing each of the
431 methods, a CBSM approach will be pursued whenever feasible.

432

433 **5.0 RELATIONSHIP OF REGIONAL, WATERSHED, AND**
434 **JURISDICTIONAL OUTREACH**

435

436 The Regional Residential Education Program is designed to meet the Permit requirements
437 for residential education based on regional needs and issues. The first step in meeting
438 these requirements is to establish a regional brand and consistent image. The City of San
439 Diego's regionally recognized Think Blue logo will be utilized as the Regional
440 Residential Education Program's brand. During the implementation phase of the permit
441 cycle the Copermittees will work collaboratively with the City of San Diego to update
442 and standardize the Think Blue brand. A Graphics Standards Manual will be developed
443 by the City of San Diego and adopted by the Copermittees in order to facilitate ease of
444 material development and ensure a consistent regional image. Existing jurisdictional
445 programs may also choose to use the Think Blue brand, maintain individuality, or

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446 combine both programs for maximum impact. In a similar manner, watershed activities
447 may be coordinated under the Think Blue brand, so long as the standards are adhered to.

448

449 Copermittees will hire a contractor to build and maintain a regional Think Blue website.
450 The website may include links to jurisdictional program, watershed program websites,
451 and other regional websites such as Project Clean Water. The regional Think Blue
452 website will provide user friendly information for the public in a single location, thereby
453 promoting consistency and coordination among the regional, jurisdictional, and
454 watershed programs.

455

456 In addition, the Education & Residential Sources Workgroup provides a platform for
457 integration of regional, jurisdictional, and watershed messages. The Education &
458 Residential Sources Workgroup also coordinates activities between non-profit
459 organizations, private institutions, and governmental agencies providing environmental
460 and water quality education. Regular meetings will continue to provide a forum for
461 educators, trainers, and public information officers to collaborate, share methods and
462 materials, and seek policy level support and direction.

463

464 Watershed and jurisdictional programs should look to the Regional Residential Education
465 Program when designing residential educational activities. The Regional Program can
466 thereby serve as a basis for developing these other programs. Some specific watershed or
467 jurisdictional issues may not be covered by the Regional Residential Education Program,
468 and must still be met by the individual or Watershed Copermittees as required by the
469 Permit. These issues will be addressed in the watershed or jurisdictional programs. In
470 this manner, the watershed and jurisdictional programs can supplement the Regional
471 Residential Education Program in order to ensure that all requirements are met. As a
472 result, each jurisdictional program may be unique in some respects and elements of the
473 watershed programs may go beyond those in the Regional Program.

474

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475 While the regional program may play a role in encouraging behavior changes, it is more
476 feasible for jurisdictional programs to be able to measure actual behavioral changes
477 resulting from increased knowledge and awareness because of their ability to implement
478 pilots on a small scale. The broad based regional program will be implementing methods
479 and utilizing assessment tools that most accurately gauge attitudes, knowledge, and
480 awareness. Positive changes in attitudes and awareness are generally accepted as
481 precursors to behavior change. Therefore, due to the difficulty of assessing behavior
482 change on a regional level, demonstrating behavior change will therefore reside with the
483 jurisdictional and watershed programs. In order to facilitate the assessment of
484 jurisdictional and watershed programs, the Plan outlines assessment tools for measuring
485 changes in knowledge and awareness through the regional Program. These measures can
486 also be tailored to meet the needs of the jurisdictional and watershed programs that
487 implement CBSM pilots or focused outreach efforts, which provide excellent
488 opportunities to assess behavior change. Section 6.0 describes assessment tools in further
489 detail.

490

491 **6.0 ASSESSMENT OF REGIONAL EDUCATION ACTIVITIES**

492 In order to evaluate whether the various components of the Program are resulting in the
493 targeted knowledge and awareness outcomes, a number of assessment methods may be
494 utilized. A random digit dial telephone survey will be the primary tool for measuring
495 changes resulting from implementation of the regional Program. Different types of
496 assessment methods will be employed in order to gauge the outcomes of each activity and
497 thereby determine effectiveness. Copermittees will review and assess existing survey
498 data while developing the new regional baseline survey. Public opinion surveys will be
499 alternated with other assessment methods to adequately assess the overall effectiveness of
500 the Regional Residential Education Program. Copermittees have agreed to work
501 cooperatively on funding and conducting market research and surveys. Measurement
502 tools outlined in the Plan may be modified somewhat to correspond with different
503 program elements. The Plan basically provides a model for program effectiveness

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504 assessment. Specific assessment methods will depend on the type of outreach or
505 education activity conducted and other constraints.

506

507 Copermittees will work with the City of San Diego to conduct a county-wide random
508 digit dial telephone survey in order to obtain baseline information on knowledge,
509 awareness, attitudes, and behaviors pertaining to stormwater. Results of the survey will
510 guide further adaptation of the program objectives. Ideally, another public opinion
511 survey will be conducted later in the permit cycle to assess any changes resulting from
512 program implementation. Once the baseline is established, future permit cycles may
513 involve one or more public opinion surveys. Additional evaluation methods may be
514 utilized once specific media, promotions, and outreach activities are implemented.
515 Results will enable Copermittees to determine the most effective outreach methods and
516 make modifications to the programs as needed.

517

518 Outcome levels used in this program are based on the Hierarchy of Targeted Outcomes
519 Pyramid referred to in the NPDES Permit, which includes outcome levels 1-6. Outcome
520 levels 1-3 will be most applicable to educational and outreach activities. Table 5
521 illustrates potential assessment methods that may be utilized for each of the activities
522 being considered. Level 1 outcomes indicate compliance with permit based activities.
523 This is the most basic means of assessing program effectiveness. Measuring Level 2
524 outcomes will indicate changes in attitudes, knowledge and awareness. Surveys and
525 quizzes provide the most common means for measuring Level 2 outcomes. Level 3
526 outcomes provide an opportunity to measure behavioral changes and implementation of
527 Best Management Practices (BMPs). This can be accomplished through observations and
528 program specific counts. For example, tracking sales of less toxic pesticides in a store
529 where IPM information is available may indicate changes in the behavior of consumers.
530 Level 4 outcomes indicate actual load reduction, and are more practical for activities such
531 as clean up events or Household Hazardous Waste collection activities, which are
532 sometimes associated with outreach activities.

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533 **Table 5) Potential Program Element Assessment Measures**

534

Activity/ Level	Type of Assessment Measure
Branding	
1	Updating materials to reflect new regional brand.
2	Count number of survey respondents who are aware of brand/program.
3	N/A
4	N/A
Website	
1	Count number of hits to website, interactive use/quizzes taken, etc.
2	Administer survey/quiz to assess attitude/knowledge of web users.
3	Administer survey/quiz to assess behavior change and compare to pilot, historical, or control data. Downloads of informational brochures.
4	N/A
Mass Media/Public Service Announcement (PSA)/Public Relations	
1	Count number of household/individuals reached.
2	Administer survey/quiz to assess attitude/knowledge of PSA recipients.
3	Comments and feedback received regarding PSA via the hotline or website.
4	N/A
Outreach Materials (i.e.: fact sheets and brochures)	
1	Count number of fact sheet/brochures handed out.
2	Administer survey/quiz to assess attitude/knowledge of fact sheet/brochure recipients
3	Administer survey/quiz to assess behavior change and compare to pilot, historical, or control data.
4	N/A
Regional Outreach Event	
1	Count number of visitors to booths, brochures handed out, surveys/quizzes completed, etc.
2	Count number of mail-in cards, number of volunteers to organization, number of persons who attended community event. Administer survey/quiz to assess attitude/knowledge of visitors
3	Administer survey/quiz to assess behavior change and compare to pilot, historical, or control data.
4	N/A

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535

Partnerships

1	Count number of incentives distributed, participants in the program.
2	Survey or quiz to assess attitude/knowledge of volunteers pre- and post- participation
3	Administer survey to assess behavior change in program participants or count observable behavior of program participants and compare to pilot data, historical data, and/or control group. Count number of mail-in cards, number of volunteers to organization, or number of persons who signed a petition directed from incentive program.
4	Count amount of load reduction in targeted residential area or count amount of load removed from targeted area

Hotline

1	Count number of calls to hotline.
2	Administer survey/quiz to assess attitude/knowledge of hotline users.
3	Administer survey to assess behavior change of participants in program and compare to pilot, historical, or control data, count observable behavior of participants in program and compare to pilot data and/or control group.
4	N/A

536

537 **7.0 CONCLUSIONS AND RECOMMENDATIONS**

538

539 The San Diego region has widely diverse socio-economic, ethnic, biological, and
540 physical characteristics. These characteristics create the region's appeal and present
541 many challenges to the entities charged with developing and implementing an effective
542 Regional Urban Runoff Management Program (RURMP).

543

544 The Regional Residential Education Program is a component of the San Diego RURMP.
545 The Program is designed to increase knowledge and awareness of stormwater issues and
546 potentially change pollutant generating behaviors. Research indicates that these are
547 attainable goals under a well-funded, long term, multi-faceted and strategic public
548 outreach campaign.

549

550 In order to implement Program goals, the Copermittees have agreed on general
551 objectives: 1) maintain a consistent image, message and brand 2) use positive messages
552 to increase knowledge and awareness, thereby increasing the likelihood of behavior
553 change 3) develop community partnerships and 4) develop strategies to assess program
554 effectiveness. In order to efficiently accomplish these objectives, Copermittees have
555 agreed to adopt Think Blue as the regional flagship brand. In addition, strong and

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556 focused outreach messages will be selected to increase knowledge and awareness and
557 ultimately target the primary pollutant generating behaviors from residential activities.

558

559 The basic Program elements include an array of methods and approaches that will be
560 utilized for program management, message delivery, and effectiveness assessment. Over
561 time, the Regional Residential Education Program will be adapted to utilize the most
562 effective outreach and education strategies practicable while maintaining a clear focus for
563 the entire region. Annual reports will summarize progress and provide an opportunity to
564 reflect on the year's successes and shortcomings. At the end of the 5-year permit cycle,
565 Copermittees will be able to assess of the Program's progress and develop more effective
566 regional outreach strategies.