

## **10. SUMMARY AND CONCLUSION**

### **10.a. Summary**

The goal of the Carlsbad Watershed URMP is to improve the water quality of the receiving waters in the Carlsbad Watershed (Hydrologic Unit). This goal responds to the Municipal Permit requirement that specifies the elimination or reduction of pollutants from urban runoff to the storm water conveyance systems, waterways, and receiving waters located in the regulatory area. Recognizing that polluted runoff is often conveyed across jurisdictional boundaries, the mandate requires the development of both jurisdictional and watershed urban runoff management plans. The Watershed URMP describes the Copermittees' approach to meeting the watershed-related obligations specified under Sections J, K, and L of the Permit. In addition to the required material, the Carlsbad Watershed URMP includes plans or strategies that extend beyond the limits of the Permit's mandates.

Through a collaborative process the Carlsbad Watershed Copermittees have developed one goal and four objectives as follows:

**GOAL:** POSITIVELY IMPACT THE WATER QUALITY IN THE RECEIVING WATERS OF THE CARLSBAD WATERSHED

Objective #1: Develop and expand methods to assess and improve water quality in the Carlsbad Watershed (Hydrologic Unit).

Objective #2: Integrate watershed principles into land use planning among jurisdictions within the watershed.

Objective #3: Increase and enhance public understanding of watershed issues and pollution prevention through a watershed-based education program.

Objective #4: Increase opportunities for public and stakeholder involvement within the watershed.

The water quality assessment, which is based on limited existing data, has focused the Copermittees efforts on a short list of potential high priority constituents of concern (COCs). For the Carlsbad Watershed these COCs are bacteria indicators (total/fecal/enterococcus), and sedimentation and siltation. Other constituents that will be "watched" by the Copermittees include, TDS, eutrophication/nutrients, and Diazinon. These water quality issues will initially be verified and validated using additional sources of existing data. The list will continually be reexamined and reprioritized supporting data is reviewed. The priority list of COCs will help focus the Copermittees efforts within each objective on pertinent activities.

Although this document may not include all water quality programs planned or implemented by the Watershed Copermittees, it does exemplify the commitment to improved water quality, in particular, and environmental policies, in general. Moreover this dedication to environmental concerns is demonstrated by many of the policies and programs that have already been implemented by the Copermittees in their respective jurisdictions, including habitat or species protection, resource conservation, and regional

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planning efforts. Collectively, these existing policies and programs provide a solid foundation on which to build the complementary objectives and supporting activities listed below in Tables 10-1 through 10-4 to begin addressing the water quality issues in the Carlsbad Watershed.

**Table 10-1. Carlsbad Watershed Activities Plan-Objective #1**

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**OBJECTIVE #1: DEVELOP AND EXPAND METHODS TO IMPROVE WATER QUALITY IN THE CARLSBAD WATERSHED (HYDROLOGIC UNIT)**

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**Activity 1.1:** Compile, review and assess water quality data from a variety of sources throughout the watershed (wet weather, dry weather, coastal monitoring, lagoon monitoring, and other special studies), including preparation of maps, to further verify and identify high priority water quality problems. This data will also be used to investigate the sources of bacteria to identify persistent sources of bacteria. (Section 5.c, Activity No. 1)

**Responsible**

**Party:** All jurisdictions  
**Lead:** Watershed Lead (currently City of Encinitas)/County of San Diego  
**Schedule:** Annually for life of permit (2006)

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**Activity 1.2:** Require BMPs for construction, new development, and redevelopments projects in an effort to reduce sedimentation/turbidity/TSS as required by individual Copermittee JURMPs. (Section 5.d, Activity No. 2)

**Responsible**

**Party:** All jurisdictions  
**Lead:** All jurisdictions  
**Schedule:** Annually, ongoing

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**Activity 1.3:** Support the upcoming Ambient Bay and Lagoon Monitoring (ABLM) Program which will include sampling and testing in Buena Vista, Agua Hedionda, Batiquitos and San Elijo Lagoons as well as eight other lagoon or coastal estuaries. (Section 5.d, Activity No. 3)

**Responsible**

**Party:** All jurisdictions  
**Lead:** County of San Diego  
**Schedule:** Annually, ongoing

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**Activity 1.4:** Review and evaluate water quality data from a variety of sources to identify data trends that may indicate the effectiveness of the Watershed URMP. (Section 3.d.1)

**Responsible**

**Party:** All jurisdictions  
**Lead:** County of San Diego  
**Schedule:** Annually, ongoing

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**Table 10-2. Carlsbad Watershed Activities Plan-Objective #2**

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**OBJECTIVE #2: INTEGRATE WATERSHED PRINCIPLES INTO LAND USE PLANNING  
 AMONG JURISDICTIONS WITHIN THE WATERSHED**

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**Activity 2.1:** Consider and pursue, if appropriate, a formal agreement between the Carlsbad Copermittees as another mechanism to facilitate watershed land use planning. (Section 6.c.1)

**Responsible**

**Party:** All jurisdictions  
**Lead:** Watershed Lead (currently City of Encinitas)  
**Schedule:** January 2005

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**Activity 2.2:** Develop or compile specific data, information, and/or recommendations, as appropriate, from the water quality assessment process, and distribute it to each jurisdictions' respective planning departments for consideration by land use planners and other decision makers to ensure adequate consideration of watershed-level problems and solutions. (Section 6.c.2)

**Responsible**

**Party:** All jurisdictions  
**Lead:** Watershed Lead (currently City of Encinitas)/County of San Diego  
**Schedule:** Ongoing

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**Activity 2.3:** Establish new/attend existing forums, as appropriate, to ensure effective communication with planning staff both jurisdictionally and on a watershed basis. (Section 6.c.3)

**Responsible**

**Party:** Each jurisdiction  
**Lead:** Each jurisdiction  
**Schedule:** Ongoing

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**Activity 2.4:** Develop a complete watershed MS4 Map. (Section 2.d)

**Responsible**

**Party:** Cities of Carlsbad, Oceanside, San Marcos, Solana Beach, and Vista  
**Lead:** Cities of Carlsbad, Oceanside, San Marcos, Solana Beach, and Vista  
**Schedule:** As specified in Chapter 2 of Watershed URMP.

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**Activity 2.6:** County of San Diego shall update their General Plan to address watershed planning activities; specifically, goals/policies addressing collaboration with other Copermittees. (Section 6.a.8)

**Responsible**

**Party:** County of San Diego  
**Lead:** County of San Diego  
**Schedule:** March 2004

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**Activity 2.7:** City of Vista shall update their General Plan to address watershed planning activities; specifically, goals/policies addressing collaboration with other Copermittees. (Section 6.a.7)

**Responsible**

**Party:** City of Vista  
**Lead:** City of Vista  
**Schedule:** January 2006

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**Table 10-3. Carlsbad Watershed Activities Plan-Objective #3**

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**OBJECTIVE #3: INCREASE AND ENHANCE PUBLIC UNDERSTANDING OF WATERSHED ISSUES AND POLLUTION PREVENTION THROUGH A WATERSHED-BASED EDUCATION PROGRAM**

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**Activity 3.1:** Incorporate general watershed concepts and principles into jurisdictional education activities including public presentations and media opportunities. Where appropriate incorporate watershed specific components including identification of receiving waters. (Section 8.b.1)

**Responsible**

**Party:** All jurisdictions  
**Lead:** North County Storm Water Programs Lead (currently Oceanside)  
**Schedule:** July 2004 (distribution will be ongoing)

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**Activity 3.2:** Participate in regional or watershed public survey to obtain baseline and periodically measurement of the public's watershed knowledge. (Section 8.b, Education Objective 1)

**Responsible**

**Party:** All jurisdictions  
**Lead:** North County Storm Water Programs Lead (currently Oceanside)  
**Schedule:** July 2002-July 2003

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**Activity 3.3:** Assist in the development of regional Integrated Pest Management (IPM) Materials for distribution to residents and businesses. (Section 8.b, Education Objective 1)

**Responsible**

**Party:** All jurisdictions (Regional)  
**Lead:** County of San Diego  
**Schedule:** July 2004 – Dec. 2005

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**Activity 3.4:** Develop region-wide educational materials (brochure or poster), which identifies watersheds and receiving waters to be used in outreach events. (Section 8.b, Education Objective 1)

**Responsible**

**Party:** All jurisdictions (Regional)  
**Lead:** County of San Diego  
**Schedule:** January 2004 – January 2005 (distribution would be on ongoing task)

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**Activity 3.5:** Participate in development and implementation of school-based program using watershed concepts on a regional or watershed basis (Section 8.b, Education Objective 2).

**Responsible**

**Party:** All jurisdictions  
**Lead:** North County Storm Water Programs Lead (currently Oceanside)/County of San Diego  
**Schedule:** July 2002 – July 2005

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**Activity 3.6:** Identify grant opportunities for water quality and watershed awareness education programs (Section 8.b, Education Objective 3)

**Responsible**

**Party:** All jurisdictions  
**Lead:** North County Storm Water Programs Lead (currently Oceanside)  
**Schedule:** July 2002 - Ongoing

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**Table 10-3. Carlsbad Watershed Activities Plan-Objective #3 (continued)**

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<b>Activity 3.7:</b>	Identify and evaluate efforts by others in the region that support the goals of the storm water program (e.g., water conservation, citizen monitoring efforts, clean-up events) and pursue partnerships and grants for educational opportunities as appropriate, including the development of an interactive website about the region's watersheds. (Section 8.b, Education Objective 4)
<b>Responsible Party:</b>	All jurisdictions
<b>Lead:</b>	North County Storm Water Programs Lead (currently Oceanside)/County of San Diego
<b>Schedule:</b>	January 2003 - Ongoing
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<b>Activity 3.8:</b>	Continue the North County Storm Water Program as a forum for Carlsbad Watershed education. (Section 8.b, Education Objective 4)
<b>Responsible Party:</b>	All jurisdictions
<b>Lead:</b>	North County Storm Water Programs Lead (currently Oceanside)
<b>Schedule:</b>	2002 –Ongoing
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<b>Activity 3.9:</b>	Develop a final outreach strategy (to be annually assessed and revised) for watershed-specific education (Section 8.c).
<b>Responsible Party:</b>	All jurisdictions
<b>Lead:</b>	North County Storm Water Programs Lead (currently Oceanside)
<b>Schedule:</b>	2002 – Ongoing
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**Table 10-4. Carlsbad Watershed Activities Plan-Objective #4**

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**OBJECTIVE #4: INCREASE OPPORTUNITIES FOR PUBLIC AND STAKEHOLDER INVOLVEMENT WITHIN WATERSHED**

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**Activity 4.1:** Collaborate on watershed and regional public participation activities such as an annual beach/creek cleanup, annual Earth Day Fair or equivalent North County event, or other regional events. (Section 7.c)

**Responsible**

**Party:** All jurisdictions  
**Lead:** North County Storm Water Programs Lead (currently Oceanside)  
**Schedule:** Ongoing

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**Activity 4.2:** Encourage dialogue with watershed stakeholders (jurisdictions, CWN, Project Clean Water, etc.) in order to solicit feedback/input on the Watershed URMP (Section 7.c):

- Present Draft WURMP at November 12<sup>th</sup> Carlsbad Watershed Network (CWN) meeting.
- Attend CWN monthly meetings (at least one representative)
- Participate in Regional/Project Clean Water Watershed Workgroups
- Encourage participation in individual watersheds (hydrologic areas), such as the Loma Alta Creek Watershed Management Plan and Escondido Creek Watershed Management Program by appropriate jurisdictions/county.

**Responsible**

**Party:** All jurisdictions  
**Lead:** Watershed Lead (currently City of Encinitas)  
**Schedule:** On-Going

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**Activity 4.3:** Participate in additional established workgroups and forums to ensure integration of Carlsbad Watershed's activities, when feasible and appropriate. (Section 7.b)

**Responsible**

**Party:** All jurisdictions  
**Lead:** All jurisdictions  
**Schedule:** On-Going

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**Activity 4.4:** Utilize the Project Clean Water website for posting appropriate watershed data and watershed plans such as the Watershed URMP in an effort to solicit public input. (Section 7.e)

**Responsible**

**Party:** All jurisdictions  
**Lead:** Watershed Lead (currently City of Encinitas)  
**Schedule:** 2003 – Beyond

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## **10.b. Conclusion**

Given the scope of the Carlsbad Watershed URMP, the Copermittees recognize that they face several significant challenges with its implementation. Moreover, since the participating cities and the County consider this program to be in its infancy, it is anticipated that the plan will be refined and augmented during the next several years. It is expected that these modifications will occur as a better understanding is acquired regarding the complex watershed issues affecting the Carlsbad Watershed and as collaborative opportunities and processes are identified and developed to address them.

To build on this initial watershed program, it has been designed as a feedback loop or cyclical process of watershed assessment, priority setting, implementation, and monitoring. Adequately responding to changing conditions requires the establishment of mechanisms to evaluate priorities, improve coordination, assess program goals, and allocate finite resources within geographic areas. Therefore, at the conclusion of each annual cycle, the process begins anew, allowing participants to respond to evolving conditions or to adjust strategies that have not performed as anticipated. Ultimately, such a dynamic and flexible program will best address the issue of impaired water quality caused by non-point sources, which are often difficult to identify within regions and over time because of their variable nature.

Key to addressing the evolving and complex issues presented by the dynamics of watersheds is an adaptive management plan, which allows adjustments to be made as new information becomes available. Moreover, the combination of the natural variability in the hydrologic cycle and the uncertainty associated with complex systems requires that watershed managers modify implementation approaches based on assessed progress and current data. However, adaptive management does not mean that the watershed's water quality goal and objectives would be modified based on lack of progress; instead, the results would be used to modify management policies, strategies, practices, and operation and maintenance procedures to achieve performance benchmarks.

While adaptive management plans and mangers are fundamental to the development and implementation of effective watershed programs, they alone cannot achieve all of the identified goals and objectives. The challenge for watershed planning and watershed-based environmental protection is invigorating local support by addressing local problems in an inclusive and coordinated manner that enhances mutual benefits and realizes progress on regional problems.

The Copermittees in the Carlsbad Watershed are committed to this adaptive process. In the years to come Copermittees will continue to meet and work together to address the water quality issues within the watershed.