

**AGENDA**  
**NEWPORT BAY WATERSHED EXECUTIVE COMMITTEE**

November 21, 2012  
1:30 – 3:30 p.m.

Irvine Ranch Water District  
15600 Sand Canyon Avenue  
Irvine, CA 92618

**John M. W. Moorlach, Chair**  
County of Orange

**Peer Swan, Vice Chair**  
Irvine Ranch Water District

**Jeff Lalloway**  
City of Irvine

**Claudia Alvarez**  
City of Santa Ana

**Kathryn McCullough**  
City of Lake Forest

**Fred Ameri**  
Santa Ana Regional Water Quality Control  
Board

**Al Murray**  
City of Tustin

**Nancy Gardner**  
City of Newport Beach

**Ed Pert**  
California Department of Fish and Game

**Wendy Leece**  
City of Costa Mesa

**Sat Tamaribuchi**  
The Irvine Company

Meeting information available at  
[www.ocwatersheds.com/NewportBay\\_ExecComm.aspx](http://www.ocwatersheds.com/NewportBay_ExecComm.aspx)

The Newport Bay Watershed Executive Committee welcomes you to this meeting and encourages your participation. This agenda contains a brief general description of each item to be considered. Except as otherwise provided by law, no action shall be taken on any items not appearing in the following agenda. However, items may be taken up in a different sequence. Any member of the public may ask the Executive Committee to be heard on the following items, as those items are called. Those persons addressing the Executive Committee are requested to give their names for the record.

## Discussion Calendar 1-4

**ITEM # 1. MINUTES OF THE SEPTEMBER 19, 2012 MEETING**

Recommended Action: Approve the minutes of the May 16, 2012 meeting.

**ITEM # 2. INTEGRATED REGIONAL WATER MANAGEMENT PLAN UPDATE**

Staff will present the revisions made to the draft Central Orange County Watershed Management Area Integrated Regional Water Management Plan.

Recommended Action: Approve the Integrated Regional Water Management Plan for Central Orange County Watershed Management Area.

**ITEM # 3. FECAL COLIFORM TOTAL MAXIMUM DAILY LOAD UPDATE**

Staff will provide an update on the status of the Indicator Bacteria TMDL in the Newport Bay Watershed.

Recommended Action: Receive and file

**ITEM # 4. SCHEDULE OF MEETING DATES FOR 2013**

Recommended Action: Approve the dates for the 2013 calendar year: February 20, May 15, August 21, and November 20.

## Consent Calendar, Items 5-6

The Staff Report contains written updates on projects. All matters are approved by one motion unless pulled by a Board Member for discussion for separate action. At this time, any member of the public may ask the Board to be heard on any item on the Consent Calendar.

**ITEM # 5. SEDIMENT BASIN CAPACITY REPORT**

Per the requirements of the Sediment TMDL for the Newport Bay Watershed every year an annual report is prepared that verifies that the watershed sediment basins have at least 50% capacity.

**ITEM # 6. NEWPORT BAY WATERSHED STUDY ON PAST MONITORING EFFORTS**

The Santa Ana Regional Water Quality Control Board has a contract with SCCWRP to do a comprehensive review of the past and current monitoring programs in the Newport Bay Watershed.

**ITEM # 7. EXECUTIVE COMMITTEE MEMBER COMMENTS**

**ITEM # 8. PUBLIC COMMENTS**

**ITEM # 9. ADJOURNMENT**

Next meeting date: February 20, 2013

**AGENDA STAFF REPORTS**  
**NEWPORT BAY WATERSHED EXECUTIVE COMMITTEE**  
**NOVEMBER 21, 2012**

**DISCUSSION CALENDAR, ITEMS # 1 - 4**

**ITEM # 1. MINUTES OF THE SEPTEMBER 19, 2012, MEETING**

**Recommended Action:** Approve the minutes of the September 19, 2012 meeting as follows.

**Date and Location:** September 19, 2012, 1:36 p.m.-2:54 p.m.  
Irvine Ranch Water District  
15600 Sand Canyon Avenue, Irvine CA 92618

**Participants:** John M. W. Moorlach, Board of Supervisors and Committee Chair  
Paul Cook, Irvine Ranch Water District, Vice Chair  
Nancy Gardner, City of Newport Beach  
Kathryn McCullough, City of Lake Forest  
Al Murray, City of Tustin  
Fred Ameri, Santa Ana Regional Water Quality Control Board  
Amanda Carr, City of Irvine  
Sat Tamaribuchi, Irvine Company  
Wendy Leece, City of Costa Mesa

**Agenda Item 1 – Minutes of the May 16, 2012 Meeting**

The minutes of the May 16, 2012 meeting were presented to the Executive Committee.

*Motion: Approve minutes for May 16, 2012*  
*First/Second: Ms. Gardner/McCullough*  
*Outcome: Approved*

**Agenda Item 2 – Integrated Regional Water Management Plan Update**

Ms. Skorpanich presented an update on the Integrated Regional Water Management Plan (IRWMP) for the Central Orange County Watershed Management Area. Ms. Gardner requested that projects from the prior version of the Plan be added to the new project list, although not prioritized. She requested that the IRWMP be brought back to the next meeting with an addendum.

Ms. Leece was pleased with the plan and inquired about the next steps. Ms. Skorpanich replied that many state grants are requiring that projects be included in an IRWMP to be considered for funding. In addition, the water quality funding from Measure M requires that project be part of a Watershed Management Area plan. Project proponents will pursue funding and implementation of their projects.

Mr. Murray commented that the plan was an excellent example of collaborative work among the participating organizations.

*Motion: Continue Item #2 to next meeting*  
*First/Second: Ms. Gardner/Mr. Ameri*  
*Outcome: Approved*

### **Agenda Item 3 – Update on One Water One Watershed Plan**

Ms. Cantu provided information about the update of the One Water One Watershed Plan, OWOW 2.0, for the Santa Ana Region consisting of four distinct functional work efforts. First, the data in the Plan is being reviewed and updated. Conclusions based on previous data sets are being reviewed and updated by the Pillar Groups. In addition, the Pillar Groups are identifying any gaps in the previous Plan that need to be addressed. For example, coastal resources were not adequately described in the previous plan and updated material is being developed. The OWOW 2.0 update will include a reporting mechanism to track the region's progress toward its goals. This "report card" will provide a useful tracking tool for decision makers and provide assistance in allocating funds to future watershed projects to keep them in line with the region's priorities.

Funding for the Proposition 84 Grant Program will begin in Fiscal Year 2012-13 with up to \$16 million available for Round 2. Beyond Fiscal Year 2014-15, funding will be based on bond funding as it becomes available. To further augment the amount of total funding available to all interested eligible jurisdictions, a 50 percent matching fund will be required of the total project costs.

### **Agenda Item 4 - Serrano Creek Tour**

A slideshow presentation of the Serrano Creek tour was given. Ms. Gardner stated that Serrano Creek was not a local issue and did impact Newport Bay since it was identified as a contributor of sediment. Ms. McCullough expressed dissatisfaction with the letter distributed by the County of Orange.

Mr. Anthony Taylor, a representative of the Autumnwood Homeowner's Association, expressed his concern for the serious situation of homeowners along Serrano Creek. He stated that it is an important matter for homeowners and should be a top priority. He requested that

the Newport Bay Watershed Executive Committee provide assistance to set up a meeting with the affected agencies to work toward developing a project that is suitable for grant funding.

Mr. Tom Wheeler, Director of Public Works for Lake Forest, expressed disappointment in how the County was treating the Serrano Creek issue especially given that the creek is actively threatening private property and homes.

**Agenda Item 5 - Total Maximum Daily Load Update**

Ms. Gardner requested additional information regarding the Sediment Total Maximum Daily Load (TMDL) regulation. She asked about the basin capacity report as well as how the information is gathered for this report. Ms. Skorpanich responded that every year, per the Sediment TMDL requirements, a survey is taken to assess how much capacity remains in each of the basins. If there is less than 50% capacity then material must be removed.

*Motion: Continue Item #5 to next meeting*  
*First/Second: Ms. Gardner/ Ms. McCullough*  
*Outcome: Approved*

**Agenda Item 6 – Groundwater/Surface Water Balance Study**

Consent Calendar

**Agenda Item 7 – Santa Ana Delhi Study**

Ms. Leece requested clarification on this project since it highlights collaboration, innovation, and cost savings between the County of Orange and the cities of Costa Mesa, Santa Ana and Newport Beach. This is one of several studies of the feasibility of projects to reduce selenium and other pollutants from the various parts of the watershed. Similar efforts are ongoing for Big Canyon Wash and Peters Canyon Wash.

Ms. Gardner asked whether the OC Flood Control District will be participating in this project since it is their channel. Ms. Skorpanich responded saying that the District is a participant in the funding of this study as one of the funding partners for the Sediment TMDL compliance program. Likewise, the partners are sharing the costs for feasibility studies for projects in Big Canyon Wash and Peters Canyon Wash.

**Agenda Item 8 – Executive Member comments**

Ms. McCullough stressed that Serrano Creek is a regional project and that the City of Lake Forest, having contributed to other regional projects, should now have a turn for others to contribute to a solution for Serrano Creek.

**Agenda Item 9 – Public Comments**

Mr. Woodings requested that more information be posted on the County's website including the full agenda packages and the Serrano Creek Collaborative Use Plan.

**Agenda Item 10 - Adjournment**

**Attendees:** Alex Waite, City of Tustin  
Anthony Taylor, Autumnwood HOA Attorney  
Carlos Castellanos, City of Santa Ana  
Dean Kirk, Irvine Company  
Devin Slaven, City of Lake Forest  
Doug Anderson, City of Tustin  
Gene Estrada, City of Orange  
Greg Heiertz, Irvine Ranch Water District  
Kurt Berchtold, Santa Ana Regional Water Quality Control Board  
Mark Tettermer, Irvine Ranch Water District  
Marsha Westropp, Orange County Water District  
Patrick Bauer, City of Costa Mesa  
Phil Jones, County of Orange/OCFCD  
Robert Stein, City of Newport Beach  
Robert Woodings, Citizen  
Pamela Newcomb, County of Orange  
Scott Williams, Autumnwood HOA  
Terri Reeder, Santa Ana Regional Water Quality Control Board  
Tom Wheeler, City of Lake Forest  
Tyrone Checanek, City of Santa Ana  
Wanda Cross, Santa Ana Regional Water Quality Control Board

**Committee Staff, County of Orange:**

Mary Anne Skorpanich, County of Orange  
Chris Crompton, County of Orange  
Beatrice Musacchia, County of Orange

## ITEM # 2. INTEGRATED REGIONAL WATER MANAGEMENT PLAN UPDATE

The purpose of the Central Watershed Management Area's Integrated Regional Water Management Plan (IRWMP) is to provide a bridge between existing and developing watershed planning efforts, allowing more effective collaboration and more opportunities to leverage agency resources across jurisdictions. Extensive development and implementation of water resource programs has occurred in this region over the past three decades, with agency partnerships, agreements, and the formation of a formal structure for stakeholder involvement. The water quality issues in this region are daunting, with eight water body segments listed on the State Water Resources Control Board's 2010 list of water quality impairments and Total Maximum Daily Load regulations (TMDLs) for nutrients, fecal coliform bacteria, sediment, toxic pollutants, and organophosphate pesticides, with more pending. While agencies in the region have collaborated extensively on water importation, groundwater management, and flood protection, water quality has been the overarching issue that has brought the water resource and land use agencies, environmental groups, and other stakeholders within the region together in the spirit of integration.

This Phase III IRWM Plan is a compilation and revision of the first two IRWM Plans; the information contained in the Phase I and Phase II plans was used as a foundation for the Phase III plan. The Phase III Plan was developed to meet the Proposition 84 guidelines. The errata sheet with the identified corrections is an attachment to this staff report.

**Recommended Action:** Approve the Integrated Regional Water Management Plan for Central OC Watershed Management Area.



### ITEM # 3. FECAL COLIFORM TOTAL MAXIMUM DAILY LOAD UPDATE

Indicator bacteria are broad classes of bacteria that are intended to indicate the possible presence of pathogens harmful to human health. Indicator bacteria can come from a wide array of sources. Controllable sources include septic systems and pet waste. However, much of the observed bacteria may come from natural, largely uncontrollable sources, including wildlife and stream or riparian vegetation, as well as regrowth of bacteria in waterbodies. Water contact recreation was listed as impaired in Newport Bay due to fecal coliform bacteria. Exceedances of this recreational standard resulted in the adoption of Total Maximum Daily Load (TMDL) regulations for fecal coliform bacteria in April 1999.

Recognizing the complexity of the bacterial water quality problem, lack of relevant data on bacterial sources, and expected difficulties in identifying and implementing appropriate bacteria control measures, the TMDL included a prioritized, phased approach to achieving load allocations. This phased TMDL approach called for further data collection and analyses concerning the sources and impacts of fecal coliform inputs to the Bay.

Costa Mesa, Irvine, Lake Forest, Newport Beach, Orange, Santa Ana, Tustin, Irvine Company, Lennar Homes of California, and IRWD and the County have conducted a series of studies and investigations to address the phased TMDL requirements. This work has included monitoring of the Bay, assessments of water contact recreation and shellfish harvesting uses of the Bay, source identification and characterization studies, evaluation of the vessel waste program, and development of a source monitoring program. During this same time period, the City of Newport Beach has implemented numerous best management practices such as the dry weather diversions to the sanitary sewer, video investigation of sewage and storm sewer lines, increased commercial inspections, and an improved and expanded vessel waste program to name a few.

An evaluation of long-term monitoring data shows a substantial decrease over time in fecal coliform concentrations on a Bay-wide scale. Current data from 2003-2010 indicates substantial compliance with water quality objectives in many areas of the Bay. In particular, all but three monitoring locations in Lower Bay meet the requirements for removal from the EPA list of impaired waters.

In December 2009, the compliance partners prepared the Newport Bay Fecal Coliform Source Management Plan. The Plan evaluated and prioritized the sources of fecal indicator bacteria (including fecal coliform), assessed the existing best management practices implemented in the watershed, and recommended practices for site-specific and Bay-wide sources of bacteria. Dry and wet weather priority areas were identified along with best management practices for these areas. Natural sources of bacteria were identified as a major cause of water quality exceedances, particularly in Upper Bay.

An update on the fecal coliform TMDL compliance program was presented to the Executive Committee last year. It described the preparation of a report to the Regional Board recommending revisions to the Newport Bay Fecal Coliform TMDL. Recommendations in the 2011 report cover four major categories:

- Basin Plan amendments to address natural sources of bacteria;
- TMDL revisions to reflect the current state of knowledge and data;
- Revisions to the list of impaired waterbodies to reflect water quality improvements and areas in compliance; and
- Monitoring program revisions.

Assuming that the recommendations are accepted, the following would be the next step in conjunction with the Regional Board:

- Step 1 – Basin Plan Amendment #1 – Natural sources of bacteria provisions
- Step 2 – Development of Revised TMDL Technical Report and Staff Report
- Step 3 – Basin Plan Amendment #2 - Revised Newport Bay TMDL

Specific recommendations from the report include changing from a fecal coliform standard to an *Enterococcus* standard, which is a different class of indicator bacteria believed to more closely link to human illness, and additional studies to evaluate uncontrollable natural sources which can be used to help determine new water quality objectives. Timely adoption of these revisions is necessary since the current TMDL requires compliance with recreational water quality standards by January 1, 2014. Without the recommended Basin Plan Amendments to address natural sources of bacteria, areas of the Bay may be out of compliance after that time.

The fecal coliform TMDL required collection and analysis of data to inform possible TMDL revisions. A report recommending revisions to the TMDL is being finalized and will be submitted to the Regional Board by the end of 2012.

**Recommended Action:** Receive and file.

#### ITEM # 4. SCHEDULE OF MEETING DATES FOR 2013

Approve the following dates for Executive Committee meetings in 2013 as follows:

February 20

May 15

August 21

November 20

**Recommended Action:** Approve dates for the 2013 calendar year.

## CONSENT CALENDAR, ITEM # 5-6

The Staff Report contains written updates on projects. All matters are approved by one motion unless pulled by a Committee Member for discussion for separate action. At this time, any member of the public may ask the Committee to be heard on any item on the Consent Calendar.

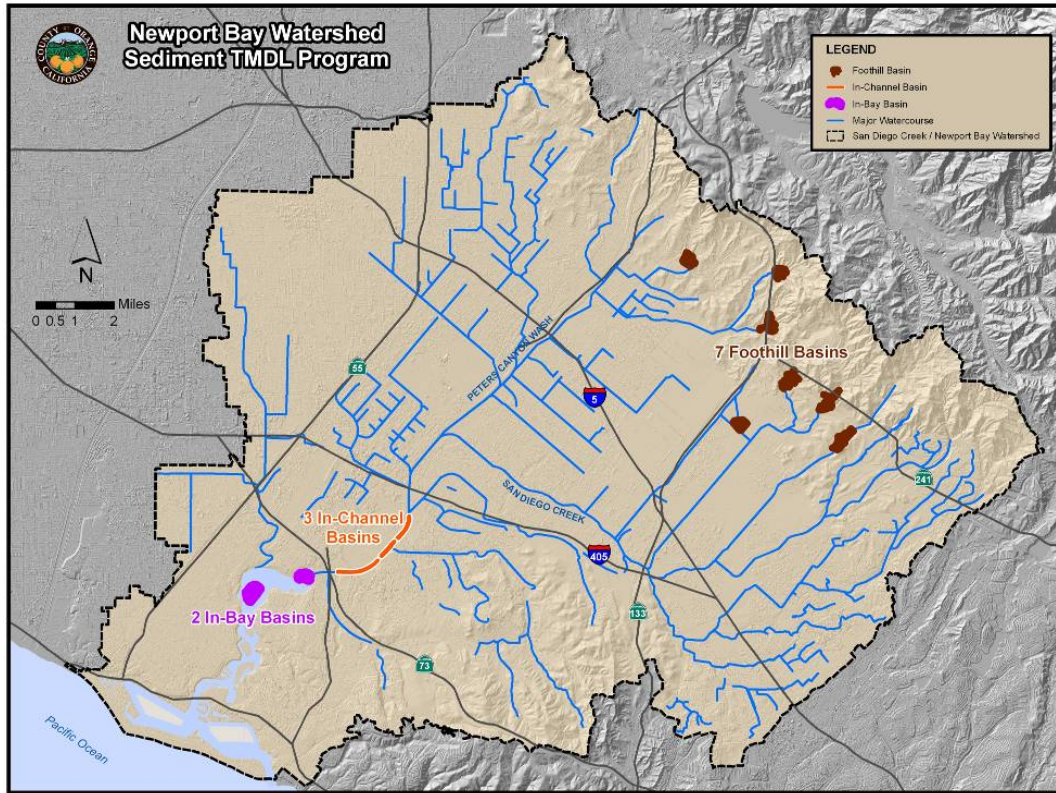
### ITEM # 5. SEDIMENT BASINS CAPACITY REPORT

The Newport Bay Watershed-San Diego Creek Comprehensive Stormwater Sedimentation Control Plan was completed in 1983 through a planning effort by the Cities of Irvine and Newport Beach and the Southern California Association of Governments. Two sediment trapping basins in San Diego Creek Channel and another in Upper Newport Bay below Jamboree Road were constructed as early action items. By the mid 1990s, two basins in Upper Newport Bay (In-Bay Basins), a third basin in San Diego Creek Channel (In-Channel Basins), and a number of basins in the foothills had been constructed, and programs to manage agricultural, construction and channel erosion sources and to monitor sediment were underway.

The Santa Ana Regional Water Quality Control Board approved Total Maximum Daily Load (TMDL) regulations for sediment in the San Diego Creek-Newport Bay Watershed in April 1999. Sections 1.a.8 and 1.b.5 of the TMDL and Section C.2 of Monitoring and Reporting Program No. 99-74 require that a survey report be submitted each year by November 15 to verify that the sediment basins in the watershed have at least 50 percent available capacity. Sediment basins operate by retarding the water flow, creating conditions where gravity acts to allow sediment particles to settle within the basins instead of being transported to the Bay.

The map in Figure 1 shows the locations of sediment basins in the watershed. Surveys conducted in fall 2012 on behalf of the Sediment TMDL compliance partners showed sufficient capacity in all the basins to meet compliance.

Figure 1. Sediment Basins in San Diego Creek-Newport Bay Watershed



## **ITEM # 6. NEWPORT BAY WATERSHED STUDY ON PAST MONITORING EFFORTS**

The Santa Ana Regional Water Quality Control Board has a contract with SCCWRP to do a comprehensive review of the past and current monitoring programs in the Newport Bay Watershed. The Newport Bay Watershed has various monitoring programs that help determine water quality conditions. Data review and analysis have generally been conducted on a site or project specific basis. This report will collect the water quality data and information produced by several generators throughout the Newport Bay Watershed. Watershed level analysis is necessary to assess existing water quality for multiple benefits to be decided by the stakeholders which includes the Santa Ana Regional Water Quality Control Board. The goal of the contract is to provide a report evaluating the past and current water quality monitoring efforts in the Newport Bay Watershed by

- Accurately evaluating trends in water quality,
- Assessing monitoring and surveillance programs ,
- Establish current achievement of water quality in Newport Bay
- Ability to respond more effectively to CWA 303(d) surface water quality assessments
- Identify where water quality data gaps are occurring in surface and groundwater bodies not governed by permits, special studies

County of Orange staff will follow up with the Newport Bay Watershed Executive Committee after the scheduled completion date of December 2013.

**Recommended Action:** Receive and file Items # 5 and 6

## **ITEM # 7. EXECUTIVE COMMITTEE MEMBER COMMENTS**

## **ITEM # 8. PUBLIC COMMENTS**

## **ITEM # 9. ADJOURNMENT**

Next meeting date: February 20, 2013



ERRATA SHEET

Page No.	
3-3	Figure is 3.1
3-5	Figure is 3.2
3-53	Figure is 3.9
3-54	Figure is 3.10
3-57	Figure is 3.11
3-74	Figure is 3.14
Appendix A	Table will increase font size to make more readable
Add Appendix B	Add City of Newport Beach projects from Phase 2 Central IRWMP
Add EPA nine elements	Various sections of plan





**CENTRAL OC WMA IRWMP  
RANKED PROJECT LIST  
UPDATED NOVEMBER 2012**

# CENTRAL ORANGE COUNTY PRIORITIZATION LIST 2010



UPDATED NOVEMBER 2012

ID #	PROJECT TITLE	LEAD AGENCY (if not submitting)	COLLABORATING STAKEHOLDERS	COST	DESCRIPTION	REGULATORY COMPLIANCE Total	STATE OBJECTIVES Total	REGIONAL / LOCAL OBJECTIVES Total	PROJECT FACTORS Total	OVERALL TOTAL	RANK
62	ID_62 Buck Gully Restoration	Newport Beach, City of	City of Newport Beach	\$1,500,000	Reduce sediment loads, Erosion Control and Bank Stabilization, Riparian Corridor Restoration Construction of Natural Treatment System at Poppy Lane and Buck Gully to reduce nutrient sediment and bacterial loads entering SWQPA # 32	0.2324	0.0342	0.2681	0.2100	<b>0.7447</b>	<b>1</b>
13	ID_13 Serrano Creek Reaches 2,3, and 4	TBD	Lake Forest,County	\$24,000,000	Construct measures to alleviate bank erosion and flooding and excessive sediment transport to Newport Bay and protect property and lives.	0.2800	0.0486	0.2452	0.1633	<b>0.7371</b>	<b>2</b>
0	Big Canyon Creek Over-Irrigation Reduction Program	Newport Beach, City of		\$250,000	High selenium concentrations found in the water column, sediment and plant & animal tissue may be due to over-irrigation practices that are mobilizing selenium that naturally occur in the Monterey formation. This public outreach and incentives program would target the Big Canyon Creek tributary watershed to encourage property owners to fix leaking irrigation systems, use multipoint irrigation heads and convert to Smartimer controllers. Potential benefits include reduced concentration of selenium delivered to Big Canyon Creek via	0.2240	0.0828	0.2083	0.2100	<b>0.7251</b>	<b>4</b>
0	UNB Delhi Channel Water Quality Improvement Project	NBNF	Orange County, Cities of Costa Mesa, Newport Beach, and Santa Ana, NBNF and others	\$5,000,000	This is a project to define in detail all of the water quality issues, flood control and other issues, suggest a holistic program and project solutions that are feasible from a technical, regulatory, political and financial standpoint, develop an overall Conceptual Design for a multi-phase course of action, and to complete a project that addresses issues in the Santa Ana Delhi Channel upstream, instead of at its point of entry into Newport Bay.	0.2632	0.0702	0.2240	0.1050	<b>0.6624</b>	<b>5</b>
0	Natural Treatment System Site 67	IRWD	County of Orange, City of Irvine	\$19,800,000		0.2324	0.0261	0.1711	0.1983	<b>0.6279</b>	<b>6</b>
0	Tustin Legacy Detention Basin	Tustin, City of	City of Tustin	\$2,000,000	Design and construction of an 85 acre ft detention basin to collect storm run off near the intersection of Barranca Parkway/Red Hill Avenue from on site and off site catch basins and streets upstream within the watershed.	0.1064	0.0846	0.2244	0.2100	<b>0.6254</b>	<b>7</b>
188	ID_188 Irvine Boulevard Improvements	Tustin, City of	City of Tustin	\$400,000	Irvine Boulevard is subject to flooding and the City will be adding several storm drains to eliminate this nuisance. The City proposes to install 4 CDS units to capture the trash and debris that enters the storm drain system.	0.2324	0.0441	0.1023	0.1983	<b>0.5771</b>	<b>9</b>
0	UNB Galaxy Habitat Restoration	NBNF	OC Parks, Calif. Dept. of Fish and Game, City of Newport Beach, NBNF and others	\$500,000	This project in the northern half of the area between Dover Shores and the West Bay will focus on restoring/creating coastal sage scrub and grass habitat (particularly cactus wren habitat) to help ameliorate the loss of this habitat in the wildfires in the foothills of the Newport Bay Watershed in the fall of 2007. Project objectives will include slope stabilization, sediment, pesticide and nutrient reduction, invasive species	0.0812	0.0486	0.3155	0.1050	<b>0.5503</b>	<b>10</b>
0	UNB Shellmaker Island Restoration/Education Projects	NBNF	OC Parks, Calif. Dept. of Fish and Game, City of Newport Beach, NBNF and others	\$250,000	Shellmaker Island is part of the DFG Ecological Reserve and home to the Back Bay Science Center. The projects provide multiple benefits including endangered species protection, habitat restoration, ADA trail installation and interpretive station construction, as well as dock and pile wall replacement.	0.0812	0.0657	0.1739	0.2100	<b>0.5308</b>	<b>11</b>
0	Borrego Canyon Wash Stabilization and Restoration (Irvine Blvd)	TBD	Lake Forest,County	\$16,000,000	Borrego Canyon Wash north of Irvine Blvd has experienced substantial stream incision and bank erosion and has been identified as the source of approximately one-half of the sediment discharged to Newport Bay during very wet years. This project will provide stabilization and restoration of the natural alluvial channel system to eliminate future erosion of the streambed and streambank to assist in reducing Borrego Wash as a	0.1260	0.0495	0.2171	0.1167	<b>0.5093</b>	<b>12</b>
0	City of Tustin Well Rehabilitation Program	Tustin, City of	City of Tustin	\$1,600,000	Rehabilitate various City wells (Vandenberg, Columbus-Tustin, 17th Street #4, Main Street #3, Main Street #4, Newport, Prospect and Beneta) to improve production, efficiency, and reliability.						

ID #	PROJECT TITLE	LEAD AGENCY (if not submitting)	COLLABORATING STAKEHOLDERS	COST	DESCRIPTION	REGULATORY COMPLIANCE Total	STATE OBJECTIVES Total	REGIONAL / LOCAL OBJECTIVES Total	PROJECT FACTORS Total	OVERALL TOTAL	RANK
						0.0840	0.1422	0.1372	0.1400	0.5034	13
0	Citywide installation of catch basin inserts and purchase of vactor truck	Tustin, City of	City of Tustin	\$2,410,000	Installation of citywide catchbasin inserts and debris screens at remaining locations without those facilities and the purchase of a vactor truck for removal of debris from catch basins and storm drain facilities.	0.1064	0.0432	0.1426	0.2100	0.5022	14
82	ID_82 City of Tustin Main Street RO/IX Facility Improvements	Tustin, City of	City of Tustin	\$150,000	Feasibility study to determine cost effective options for upgrading groundwater treatment process at the City's Main Street Plant which removes nitrates from the ground water.	0.0840	0.0891	0.2183	0.1050	0.4964	16
0	UNB Big Canyon Habitat Restoration	NBNF	OC Parks, Calif. Dept. of Fish and Game, City of Newport Beach, NBNF and others	\$6,500,000	NBNF is currently working with the City and DFG to see if the project permit conditions can be met. If it is agreed that it is impractical to proceed with the project as designed or with minor modifications NBNF will take the lead in exploring less costly options that will address the main flood, water quality, habitat and wildlife issues without relocating the existing freshwater pond or Back Bay Drive. Cost is for Tidal Wetlands.	0.0812	0.0630	0.1739	0.1750	0.4931	17
0	Capacity Enhancements of the Santa Ana-Santa Fe Channel (F10)	Tustin, City of	County of Orange	\$8,000,000	Capacity enhancement and realignment of the Santa Ana-Santa Fe Channel between 500 feet west of and 1,200 feet east of the centerline of FUTURE Newport Avenue.	0.0420	0.0945	0.1928	0.1517	0.4810	18
0	Pomona Street Water Quality and Storm Drain Improvement Project	Costa Mesa, City of	City of Newport Beach, County of Orange	\$3,000,000	Installation of upgraded stormdrain to include treatment and upgrade of bioswale from Pomona Ave to Newport Blvd in the cities of Costa Mesa and Newport Beach.	0.1512	0.0441	0.1534	0.1167	0.4653	20
0	Gowdy Avenue	Lake Forest	0	\$62,740	BMP retrofit improvement project for the street median and parkways including removal of high-water use turf grass, replacement with drought tolerant plant palette, replace irrigation controllers with ET controllers and retrofit irrigation distribution system to provide setbacks and low water emitting/high efficiency heads.	0.1820	0.0513	0.0965	0.1283	0.4581	21
0	Centralized Expansion of Irrigation Control System Civic Center & Parks	Santa Ana, City of	Santa Ana, City of - MWD	\$750,000	Expansion of the City's Smart controller system and tying the irrigation network within the Civic Center and park system to one centrally controlled location	0.1820	0.0234	0.0388	0.2100	0.4542	22
0	Ridge Route Drive	Lake Forest	0	\$845,600	BMP retrofit improvement project for the street median and parkways including removal of high-water use turf grass, replacement with drought tolerant plant palette, replace irrigation controllers with ET controllers and retrofit irrigation distribution system to provide setbacks and low water emitting/high efficiency heads.	0.1820	0.0558	0.0680	0.1283	0.4342	23
0	UNB Comprehensive Risk Management Program Implementation	NBNF	OC Parks, CDFG, CoNB, NBNF, etc.	\$500,000	The CRMP will define specific objectives for the long-term protection of native habitat and wildlife and compatible public use, and specify how best to achieve the objectives, how to monitor progress in achieving those objectives, and how to adapt the objectives or methods to take account of changing conditions and circumstances. This IRWMP Project seeks funding for five years of ongoing CRMP coordination and habitat/wildlife inventory updates at an average annual cost of \$100,000. The ongoing monitoring will be	0.0420	0.0522	0.1519	0.1750	0.4211	24
0	UNB Bayview Habitat Restoration	NBNF	OC Parks, Calif. Dept. of Fish and Game, City of Newport Beach, NBNF and others	\$500,000	A master project to address erosion, sediment, habitat degradation, nesting disturbance, pathogen runoff and other problems resulting from local storm drains, illegal trails and other inappropriate public uses will be initiated through the Comprehensive Resource Management Program for the entire Bay. This project will establish an ecologically-sound system of public access for compatible recreational use. This project will be to complete the master project for the Bayview Project Area, which stretches from the Delhi Channel to Jamboree and includes nearly 30 acres of upper saltmarsh, fresh water marsh, riparian, coastal sage scrub and grassland habitat within the Upper Newport Bay Ecological Reserve and Nature Preserve.	0.0812	0.0540	0.1739	0.1050	0.4141	25
0	UNB Watershed Data Catalog	NBNF	OC Parks, Calif. Dept. of Fish and Game, City of Newport Beach, NBNF and others	\$250,000	A single Comprehensive Resource Management Program (CRMP) is being developed to achieve the holistic adaptive management of Upper Newport Bay and surroundings. Over 1000 studies, reports, etc. containing relevant scientific and other data have been cataloged, and gaps identified that will be filled as part of the development of the CRMP. The Watershed Data Catalog will provide a vital tool for the cities and other entities in the Newport Bay Watershed to use to help accomplish a more cost-effective approach to all natural resource and water quality projects in watershed.	0.0420	0.0522	0.1403	0.1750	0.4095	26

ID #	PROJECT TITLE	LEAD AGENCY (if not submitting)	COLLABORATING STAKEHOLDERS	COST	DESCRIPTION	REGULATORY COMPLIANCE Total	STATE OBJECTIVES Total	REGIONAL / LOCAL OBJECTIVES Total	PROJECT FACTORS Total	OVERALL TOTAL	RANK
0	UNB San Joaquin Hills Road Habitat Restoration	NBNF	OC Parks, Calif. Dept. of Fish and Game, City of Newport Beach, NBNF and others	\$750,000	A master project to address erosion, sediment, habitat degradation, nesting disturbance, pathogen runoff and other problems resulting from local storm drains, illegal trails and other inappropriate public uses will be initiated through the Comprehensive Resource Management Program for the entire Bay. This project will establish an ecologically-sound system of public access for compatible recreational use. This project will be to complete the master project for the San Joaquin Hills Road Project Area, which stretches from Big Canyon to the Hyatt and includes over 50 acres of upper saltmarsh, fresh water marsh, riparian, coastal sage scrub and grassland habitat within the Upper Newport Bay Ecological Reserve and Nature Preserve and adjacent city and private land.	0.0812	0.0486	0.1739	0.1050	0.4087	27
67	ID_67 County-Wide Pharmaceutical No Drugs Down Drain	Orange County Sanitation District	Orange County Sanitation District	\$100,000	Implementation of collection sites for unused pharmaceuticals/Education Program to Reduce of Pharmaceuticals disposed by general public into the sewer system	0.0000	0.0522	0.1928	0.1633	0.4083	28
0	UNB Eastbluff Habitat Restoration	NBNF	OC Parks, Calif. Dept. of Fish and Game, City of Newport Beach, NBNF and others	\$750,000	A master project to address erosion, sediment, habitat degradation, nesting disturbance, pathogen runoff and other problems resulting from local storm drains, illegal trails and other inappropriate public uses will be initiated through the Comprehensive Resource Management Program for the entire Bay. This project will establish an ecologically-sound system of public access for compatible recreational use. This project will be to complete the master project for the Eastbluff Project Area, which stretches from Larkspur to Big Canyon.	0.0840	0.0405	0.1739	0.1050	0.4034	29
30	ID_30 Irvine Wildlife Corridor	Great Park	Great Park	\$46,000,000	Provide a dedicated open space for wildlife migration between natural habitats located within and adjacent to the City of Irvine	0.1092	0.0513	0.1001	0.1400	0.4006	30

ID #	PROJECT TITLE	LEAD AGENCY (if not submitting)	COLLABORATING STAKEHOLDERS	COST	DESCRIPTION	REGULATORY COMPLIANCE Total	STATE OBJECTIVES Total	REGIONAL / LOCAL OBJECTIVES Total	PROJECT FACTORS Total	OVERALL TOTAL	RANK
0	UNB Newport Aquatic Center Habitat	NBNF	OC Parks, Calif. Dept. of Fish and Game, City of Newport Beach, NBNF and others	\$500,000	The Newport Aquatic Center is part of the UNB Dover Shores Project Area which is located at the southwest corner of the Upper Newport Bay Ecological Reserve. This project will restore about 5 acres of land and provides multiple benefits including endangered species protection, mudflat creation, oyster bed installation,	0.0812	0.0252	0.1739	0.1167	0.3970	31
60	ID_60 Study of Nutrient Load in Bay and Algae Blooms	Newport Beach, City of	City of Newport Beach	\$450,000	Assess cause of algae blooms and correlation to high nutrients load into the Bay Conduct Cross Contamination Model to evaluate migration of nutrient to SWQPA Jetty modification study Fertilizer management program	0.1932	0.0405	0.1117	0.0467	0.3920	32
0	UNB West Bay Habitat Restoration	NBNF	OC Parks, Calif. Dept. of Fish and Game, City of Newport Beach, NBNF and others	\$5,000,000	A master project to address erosion, sediment, habitat degradation, nesting disturbance, pathogen runoff and other problems resulting from local storm drains, illegal trails and other inappropriate public uses will be initiated through the Comprehensive Resource Management Program for the entire Bay. This project will establish an ecologically-sound system of public access for compatible recreational use. This project will be	0.0812	0.0252	0.1739	0.1050	0.3853	33
0	F06 Peters Canyon Channel - San Diego Creek Channel (F05) Confluence to Barranca Pkwy	OCFCD	0	\$9,800,000	To design and construct the existing deficient channel to convey the 100-year storm event.	0.0812	0.0180	0.1410	0.1400	0.3802	34
0	F06 Peters Canyon Channel - Barranca Pkwy to Warner Ave Phase 1	OCFCD	0	\$8,400,000	To design and construct the existing deficient channel to convey the 100-year storm event.	0.0812	0.0180	0.1269	0.1400	0.3661	35
61	ID_61 Copper Elimination	Newport Beach, City of	City of Newport Beach	\$150,000	Implement boat paint management program to reduce presence of toxic paints in CCA #69, SWQPA #33 and SWQPA #32.	0.1484	0.0405	0.1117	0.0467	0.3472	36
0	F06 Peters Canyon Channel - from Barranca Pkwy to Warner Ave	OCFCD	0	\$8,400,000	To design and construct the existing deficient channel to convey the 100-year storm event.	0.0420	0.0180	0.1410	0.1400	0.3410	37
0	Destruction of Livingston and Pankey Wells	Tustin, City of	City of Tustin	\$75,000	Demolish two abandoned City wells and eliminate potential for contaminating local groundwater basin.	0.0000	0.0189	0.0836	0.2100	0.3125	38
0	Wells 21 and 22	IRWD	0	\$39,768,000		0.0168	0.0162	0.0612	0.2100	0.3042	39
0	South Basin Groundwater Protection Project Interim	OCWD	0	\$2,800,000	Construct interim remediation system, including wells and treatment facilities, to remove contaminated groundwater and contain migration of contaminated groundwater; contaminants in groundwater include	0.0000	0.0225	0.0709	0.2100	0.3034	40
0	Strand Ranch Recovery	IRWD	0	\$7,353,000		0.0000	0.0189	0.0612	0.2100	0.2901	41
0	Colored Water Treatment Facility Technology and Expansion	MCWD	0	\$24,000,000	Replace existing ozone, biologically active filtration process with nanofiltration process and increase capacity from 4,000 gpm to 6,000 gpm to treat colored groundwater	0.0168	0.0432	0.0181	0.2100	0.2881	42
0	F10 Santa Ana-Santa Fe Channel - from Redhill to Confluence with F06	OCFCD	0	\$21,000,000	This channel is currently in a FEMA Special Flood Hazard Area Zone A, AE, and AH. Design and construct channel to convey the 100-year storm event and reduce/contain the 100-year storm event within the channel.	0.0812	0.0090	0.0522	0.1400	0.2824	43
0	F01 Santa Ana-Delhi Channel - from d/s Mesa	OCFCD	0	\$12,350,000	This channel is currently in a FEMA Special Flood Hazard Area Zone A. Design and construct channel to convey the 100-year storm event and reduce/contain the 100-year storm event within the channel.	0.0420	0.0261	0.0730	0.1400	0.2811	44

ID #	PROJECT TITLE	LEAD AGENCY (if not submitting)	COLLABORATING STAKEHOLDERS	COST	DESCRIPTION	REGULATORY COMPLIANCE Total	STATE OBJECTIVES Total	REGIONAL / LOCAL OBJECTIVES Total	PROJECT FACTORS Total	OVERALL TOTAL	RANK
0	Dr to Back Bay Syphon Reservoir Integration Project	IRWD	0	\$6,900,000		0.0476	0.0099	0.0939	0.1283	0.2797	45
0	F08 Lane Channel - from Confluence with F05 to downstream Redhill Ave	OCFCD	0	\$15,500,000	This channel is currently in a FEMA Special Flood Hazard Area, Zone A Contained in Channel, and has eroded beyond general maintenance. Repairs of channel improvement magnitude are necessary to bring this channel back to properly conveying the 100-year flood event.	0.0812	0.0090	0.0649	0.1167	0.2718	46
84	ID_84 San Joaquin NTS	IRWD	IRWD	\$2,300,000	Construct a new 10-acre wetland for urban runoff treatment serving the entire San Diego Creek watershed in Central Orange County	0.1512	0.0432	0.0765	0.0000	0.2709	47
0	F02 Santa Ana Gardens Channel - from Alton	OCFCD	0	\$11,200,000	To design and construct this existing deficient channel to convey the 100-year storm event.	0.0812	0.0090	0.0522	0.1167	0.2591	48
282	ID_282 Tustin Avenue Well	Tustin, City of	Tustin	\$4,000,000	Demolition and development of new well. Planned to help city reduce dependence on imported water, increase capacity, and improve reliability	0.0000	0.0351	0.0723	0.1400	0.2474	49
0	D03S03 Gisler Storm Channel - Fairview Street	OCFCD	0	\$7,000,000	To design and construct this existing segment of a deficient channel to convey the 100-year storm event. The upstream and downstream segment have been constructed to convey the ultimate conditions.	0.0000	0.0090	0.0841	0.1400	0.2331	50
0	Syphon Reservoir Expansion Project	IRWD	0	\$70,000,000		0.0476	0.0099	0.0939	0.0467	0.1980	51
29	ID_29 Cienega Filtration Project	IRWD	IRWD	\$25,000,000	Construct a biofilter designed to remove selenium from surface water in the Peters Canyon Channel tributary of San Diego Creek	0.0840	0.0225	0.0545	0.0000	0.1610	52
0	Joint Anaheim/IRWD Well Field	IRWD	City of Anaheim	\$40,000		0.0168	0.0162	0.0612	0.0583	0.1525	53
78	ID_78 District-Wide Recycled Water Expansion Project	IRWD	IRWD	\$6,820,000	Design And Construction Of Expanded Recycled Water Distribution System	0.0000	0.0234	0.0356	0.0000	0.0590	54
81	ID_81 Lake Forest Recycled Water Expansion Project	IRWD	IRWD	\$6,820,000	Expansion of IRWD Recycled Water System into Lake Forest	0.0000	0.0234	0.0356	0.0000	0.0590	55
43	ID_43 Michelson Water Reclamation Plant Flood Wall	IRWD	IRWD	\$7,623,000	Construct flood wall to prevent inundation of MWRP from 200-year flooding from San Diego Creek	0.0000	0.0090	0.0160	0.0000	0.0250	56
48	ID_48 San Diego Creek Levee System FEMA	IRWD	IRWD	\$145,000	Geotechnical Investigation, identification of design, Construction, and maintenance of levees, and certification of levee system. The levees are vital for the protection of the Michelson Water Reclamation Plant	0.0000	0.0090	0.0160	0.0000	0.0250	57
76	ID_76 Baker Pipeline Regional Water Treatment Plant	IRWD	IRWD	\$48,700,000	Construction Of A 25 MGD Microfiltration Plant To Treat Raw Water From Santiago Lateral And/Or Irvine Lake	0.0000	0.0099	0.0000	0.0000	0.0099	58
190	ID_190 County Trash Reduction	Coastkeeper	Santa Ana, Tustin, County	\$355,408	Reduce huge amounts of trash deposited in Delhi Channel, Peters Canyon Wash and tributary channels washed downstream into Newport Bay. Trash problems include degrading water quality, habitat, and recreation opportunities in channels and Newport Bay. Trash collection/disposal imposes significant costs to	0.0000	0.0000	0.0000	0.0000	0.0000	
192	ID_192 Rhine Channel Remediation Project	Coastkeeper	City of Newport Beach, County of Orange		Currently the Rhine Channel is listed on the state impaired waterbodies list for metals and pesticides and has been designated a toxic hot spot by the Santa Ana Regional Water Board. Habitat in the channel is degraded due to sediment contamination and the channel is a source of contaminants found in fish and birds						

ID #	PROJECT TITLE	LEAD AGENCY (if not submitting)	COLLABORATING STAKEHOLDERS	COST	DESCRIPTION	REGULATORY COMPLIANCE Total	STATE OBJECTIVES Total	REGIONAL / LOCAL OBJECTIVES Total	PROJECT FACTORS Total	OVERALL TOTAL	RANK
	(Phase 1)			\$4,000,000	throughout the harbor. A TMDL for the Rhine Channel is currently in the development stage. The project will be the first step in solving the problem of highly contaminated sediment in the Rhine Channel by developing the required dredge plans, environmental documents and obtaining the necessary permits for dredging. We will identify the areas of the channel with the highest concentrations of contaminants using the extensive recent data that has been generated by the Rhine Channel Remediation Alternatives Study and by conducting additional sediment monitoring as necessary. This project will provide direct water and sediment quality improvements to the Rhine Channel and help restore the marine habitat beneficial use in the channel and throughout the bay due to healthier fish stocks and reduced transfer of contaminants out of the	0.0000	0.0000	0.0000	0.0000	0.0000	
193	ID_193 Newport Bay Watershed Foothills Infiltration BMP Project	Coastkeeper	Coastkeeper	\$420,481	Newport Bay Watershed has undergone a rapid transformation over the last 20 years from largely agricultural uses to a developed urban area. With development, open land for water to infiltrate has decreased and amount of polluted runoff from homes and industry has increased. Now Borrego Wash, Serrano Creek, San Diego Creek and Newport Bay are in poor condition. Problems include severe downstream channel erosion, riparian habitat degradation, property damage, sediment discharge into Newport Bay, and groundwater recharge. Actions to reduce runoff and pollutants are needed to restore beneficial uses to the creeks and bay. The project goals are to restore the creeks and bay by reducing runoff and pollution, providing benefits to water quality, habitat and dependent species. W/o implementation of project or similar measures, water quality will degrade resulting in the loss of habitat, biota and property. Project will address problems from increased stormwater runoff from urban development in the foothill areas.	0.0000	0.0000	0.0000	0.0000	0.0000	





**CENTRAL OC WMA IRWMP  
2012 UNRANKED PROJECT LIST**

2012 Central OC WMA IRWMP  
PROJECTS

PROJECT TITLE	SUBMITTING ENTITY	COST	DESCRIPTION	LEAD AGENCY (if not submitting)	COLLABORATING STAKEHOLDERS
Williams Street Storm Drain	City of Tustin	\$ 450,000.00	Installation of a new storm drain and catch basins on Williams Street and the installation of a modular wetland Filterra system		N/A
San Juan Street Storm Drain	City of Tustin	\$ 75,000.00	Develop plans including hydrology and hydraulics analysis to address drainage concerns		N/A
Tustin Village Way Drainage Improvements	City of Tustin	\$ 75,000.00	Develop plans to alleviate drainage concerns including hydrology and hydraulics analysis.		N/A
Yorba Street Storm Drain	City of Tustin	\$ 75,000.00	Installation of storm drain pipe, catch basin, and junction structures and the installation of a modular wetland or Filterra system		N/A
Newport Avenue Extension	City of Tustin	\$ 50,600,000.00	Extension of Newport Avenue and the realignment of the flood control channel. Construction of Newport Avenue from Edinger Avenue to Sycamore Avenue to include 3 lanes each direction using EPA green street manual.		N/A
Santa Ana Delhi Channel Diversion	City of Santa Ana	\$ 4,288,125.00	The proposed project is intended to capture and divert Urban Discharge Low-Flow into the sanitary sewer system.		N/A

**CITY OF NEWPORT BEACH PHASE 2  
PROJECT LIST**

CITY OF NEWPORT BEACH  
PHASE 2 IRWMP  
PROJECT LIST

ID #	Rank	Project Title	Draft Score	PIF?	Lead Agency	Project Category	Cost	Project Type				Description
								Hydrology	Water Quality	Water Supply	Habitat	
277	1	ID_277 Newport Bay Upland Restoration Program (17 Projects)	322	NO	County of Orange and Newport Beach City of Newport Beach	3			X	X	X	combination of projects
62	3	ID_62 Buck Gully Restoration	238	Yes	City of Newport Beach	3	\$ 2,600,000		x		x	Reduce sediment loads, Erosion Control and Bank Stabilization, Riparian Corridor Restoration Construction of
57	8	ID_57 Santa Ana Delhi Channel Repair	207	NO	County, Newport Beach	3	\$ 3,000,000	x	x		x	Stabilize channel banks, introduce native habitat, and create brackish water wetlands
68	13	ID_68 Newport Coast Runoff Reduction Project	186	NO	City of Newport Beach	3	\$ 875,000		x	x	x	Implementation of a Pilot BMP for Dry weather and low wet weather flows that will consist of a treatment train approach. BMP will first remove gross solids and then separate the coarse and fine
55	14	ID_55 Santa Ana Delhi Estuarine Wetland Restoration	185	NO	County, Newport Beach, CDFG	3	\$ -		x		x	Phase I (47) is sequenced after Phase II (23)
192	19	ID_192 Rhine Channel Remediation Project (Phase 1)	163	Yes	City of Newport Beach	3	\$ 2,000,000		x			Habitat restoration
258	22	ID_258 Dover Shore Source Control	162	NO	City of Newport beach	3			x			0
191	27	ID_191 Newport Bay Copper Reduction Project	153	Yes	City of Newport Beach	2	\$ 560,000		x		x	Streambed down cutting and canyon bank erosion in Serrano Creek threatens to undermine houses and damage sewer and electrical facilities. The County and other stakeholders are spearheading
238	33	ID_238 San Diego Creek-Michelson Fresh Water Marsh	152	NO	City of Newport Beach	3			x		x	The flood management system is a function of the hydrology of the region. When stormwater is directed off of the land into nearby streams, stream flood risk increases, thus increasing the need to reinforce the banks and replace riparian habitat with drain
94	51	ID_94 Big Canyon Creek	137	NO	City of Newport Beach and DFG	3	\$ 4,000,000		x		x	Natural treatment system
58	74	ID_58 Restoration of SWQPA #32 and Ecosystem Impact Metric	111	NO	City of Newport Beach	3	\$ 400,000		x			Removal of Invasive Brown Algae in Rocky Inter-tidal to enhance re-establishment of native algae, Eelgrass restoration, Assessment of Success of ongoing restoration activities and invasive removal program SWQPA Impact Metric Assessment of Potential Impact
73	75	ID_73 Economic value for ecosystem restoration for Big	111	NO	City of Newport Beach	3					x	Conduct a study to Identify Economic value for ecosystem restoration. (Talk to UCI contact for more information)
237	77	ID_237 San Joaquin Hills Habitat Restoration Area	111	Yes	City of Newport Beach	3	\$ 2,000,000		x			Widening of Irvine Avenue where crosses Santa Ana Delhi Channel.
179	80	ID_179 Vista Point Project	110	Yes	City of Newport Beach	3	\$ 70,000				x	0
60	82	ID_60 Study of Nutrient Load in Bay and Algae Blooms	105	Yes	City of Newport Beach	3	\$ 450,000		x		x	Assess cause of algae blooms and correlation to high nutrients load into the Bay Conduct Cross Contamination Model to evaluate migration of nutrient to SWQPA Jetty modification study Fertilizer management program
53	89	ID_53 Bonita Canyon Habitat Linkage	100	NO	Newport Beach, County	3	\$ 1,000,000				x	ET Controllers Programs
249	90	ID_249 Beach Replenishment Project	100	NO	City of Newport Beach	3		x			x	ET Controllers Programs

CITY OF NEWPORT BEACH  
PHASE 2 IRWMP  
PROJECT LIST

ID #	Rank	Project Title	Draft Score	PIF?	Lead Agency	Project Category	Cost	Project Type				Description
								Hydrology	Water Quality	Water Supply	Habitat	
170	91	ID_170 Santa Isabella Wetland	93	Yes	County of Orange, City of Newport Beach and DFG	3						Planning and education
162	92	ID_162 Aquatic Center Renovation	75	NO	County of Orange and City of Newport Beach	3						
278	96	ID_278 Buck Gully Resource Management Plan	70	NO	City of Newport Beach	1	\$ 200,000	X	X	X	X	
61	97	ID_61 Copper Elimination	65	Yes	City of Newport Beach	3	\$ 1,140,000		X			Implement boat paint management program to reduce presence of toxic paints in CCA #69, SWQPA #33 and SWQPA #32.
66	116	ID_66 Newport Coast Runoff Reduction Project for SWQPA #33	60	NO	IRWD/ City of Newport Beach	3	\$ 2,070,000					Landscape certification
185	126	ID_185 Cherry Lake Section Upgrade Project	51	Yes	City of Newport Beach, Costa Mesa and County of Orange	2						
184	131	ID_184 Santiago Bio Swale Project	42	NO	County of Orange, City of Newport Beach and DFG	3						Habitat restoration low-impact design elements such as bioswales.
281	132	ID_281 Rocky Intertidal Protection Program	41	NO	City of Newport Beach	3	\$ 125,000				X	Habitat rehabilitation by reducing public impacts to the rocky intertidal areas
247	137	ID_247 AP Environmental Sciences Class	22	NO	City of Newport Beach	1		X	X	X	X	
51	138	ID_51 San Diego Creek Watershed-Scale Pesticide Runoff Mitigation	21	NO	City of Newport Beach	1	\$ 400,000					This project will reduce stormwater toxicity in Newport Bay by surveying pesticide use at all large land parcels (parks, shopping centers, golf courses, municipal facilities, educational facilities, etc) and designing & implementing VOLUNTARY BMPs to redu
173	144	ID_173 Horse Arena Project	12	Yes	County of Orange and City of Newport Beach City of Newport Beach	1	\$ 150,000					Water quality



**LINKING EPA'S NINE ELEMENTS TO  
CENTRAL WMA IRWMP**

Linking the Central OC Watershed Management Area IRWMP to EPA's nine elements

EPA ELEMENT	Central OC WMA IRWMP Sections
1. Identification of causes of impairment and pollutant sources or groups of similar sources that need to be controlled to achieve needed load reductions, and any other goals identified in the watershed plan. Sources that need to be controlled should be identified at the significant subcategory level along with estimates of the extent to which they are present in the watershed.	Section 3 pages 3-48 through 3-64 in addition to information below
2. An estimate of the load reductions expected from management measures	Section 3 in addition to information below
3. A description of the nonpoint source management measures that will need to be implemented to achieve load reductions in paragraph 2, and a description of the critical areas in which those measures will be needed to implement this plan.	Section 5 Resource Management Strategies
4. Estimate of the amounts of technical and financial assistance needed associated costs, and/or the sources and authorities that will be relied upon to implement this plan.	See information below in addition to Section 8 Finance and Section 9 Technical Analysis
5. An information and education component used to enhance public understanding of the project and encourage their early and continued participation in selecting, designing, and implementing the nonpoint source management measures that will be implemented.	Section 11 Stakeholder involvement in addition to information below.
6. Schedule for implementing the nonpoint source management measures identified in this plan that is reasonably expeditious.	See information below
7. A description of interim measurable milestones for determining whether nonpoint source management measures or other control actions are being implemented.	
8. A set of criteria that can be used to determine whether loading reductions are being achieved over time and substantial progress is being made toward attaining water quality standards.	
9. A monitoring component to evaluate the effectiveness of the implementation efforts over time, measured against the criteria established under item h immediately above.	See information below.



EPA's NINE ELEMENTS for Central IRWMP

*A Identification of causes of impairment and pollutant sources or groups of similar sources that need to be controlled to achieve needed load reductions, and any other goals identified in the watershed plan. Sources that need to be controlled should be identified at the significant subcategory level along with estimates of the extent to which they are present in the watershed.*

*B an estimate of the load reductions expected from management measures*

**THE INFORMATION BELOW COVERS ELEMENTS A AND B**

Several water bodies in the COCWMA are listed on the Clean Water Act 303(d) list of impaired waters for violations of water quality standards. Listed water bodies, causes of impairment, and source categories or subcategories are shown in Table X-1. Because of the size of the watershed, patchy spatial distribution of impairments, and attending complexity of water quality issues, impairments, potential sources, and load reductions will be discussed broadly by pollutant type. See Section 3.6 for additional information on regional surface water quality, beneficial uses, and impairments. A broader discussion of watershed goals is in Chapter 5.

Table X-1: Central Orange County 303(d) listed water bodies, with impairments and potential sources.

<b>303 (d) Listed Water Body</b>	<b>2010 Impairments</b>	<b>Sources</b>
Balboa Beach	DDT	Historical crop production
	Diieldrin	Historical crop production
	PCBs (Polychlorinated biphenyls)	Urban runoff, hazardous wastes
Borrego Creek (Irvine Blvd to San Diego Creek Reach 2)	Ammonia (unionized)	Historical and current crop production
	Indicator Bacteria	Natural sources (wildlife & vegetation), urban runoff
Buck Gully	Fecal Coliform	Natural sources (wildlife & vegetation), urban runoff
	Total Coliform	Natural sources (wildlife & vegetation), urban runoff
Los Trancos Creek (Crystal Cove Creek)	Fecal Coliform	Natural sources (wildlife & vegetation), urban runoff
	Total Coliform	Natural sources (wildlife & vegetation), urban runoff
Morning Canyon Creek	Indicator Bacteria	Natural sources (wildlife & vegetation), urban runoff
Newport Bay, Lower	Chlordane	Historical crop production
	Copper	Atmospheric deposition, architecture, brake pad dust, marinas
	DDT	Historical crop production
	Nutrients	Historical and current crop production, drainage of wetlands, groundwater
	Indicator Bacteria	Natural sources (wildlife & vegetation), urban runoff
	PCBs (Polychlorinated biphenyls)	Urban runoff, hazardous wastes
	Pesticides	Historical crop production

<b>303 (d) Listed Water Body</b>	<b>2010 Impairments</b>	<b>Sources</b>
	Sediment Toxicity	Unknown
Newport Bay, Upper (Ecological Reserve)	Chlordane	Historical crop production
	Copper	Atmospheric deposition, architecture, brake pad dust, marinas
	DDT	Historical crop production
	Metals	Atmospheric deposition, architecture, brake pad dust, marinas
	Nutrients	Historical and current crop production, drainage of wetlands, groundwater
	Indicator Bacteria	Natural sources (wildlife & vegetation), urban runoff
	PCBs (Polychlorinated biphenyls)	Urban runoff, hazardous wastes
	Pesticides	Historical crop production
	Sediment Toxicity	Unknown
	Sedimentation/Siltation	Crop production, channelization, streambank modification, development
Peters Canyon Channel	DDT	Historical crop production
	Toxaphene	Historical crop production
	Indicator Bacteria	Natural sources (wildlife & vegetation), urban runoff
	pH	Natural geology, historical and current crop production
Rhine Channel	Copper	Atmospheric deposition, architecture, brake pad dust, marinas
	Lead	Urban runoff, hazardous wastes, natural geology
	Mercury	Urban runoff, hazardous wastes, natural geology
	PCBs (Polychlorinated biphenyls)	Urban runoff, hazardous wastes, natural geology
	Sediment Toxicity	Unknown
	Zinc	Atmospheric deposition, urban runoff
San Diego Creek Reach 1	Fecal Coliform	Natural sources (wildlife & vegetation), urban runoff
	Nutrients	Historical and current crop production, drainage of wetlands, groundwater
	Pesticides	Historical crop production
	Sedimentation/Siltation	Crop production, channelization, streambank modification, development
	Selenium	Historical crop production, groundwater, natural geology
	Toxaphene	Historical crop production
San Diego Creek Reach 2	Nutrients	Historical and current crop production, drainage of wetlands, groundwater
	Sedimentation/Siltation	Crop production, channelization, streambank modification, development

<b>303 (d) Listed Water Body</b>	<b>2010 Impairments</b>	<b>Sources</b>
	Unknown Toxicity	Unknown
	Indicator Bacteria	Natural sources (wildlife & vegetation), urban runoff
Seal Beach	Enterococcus	Natural sources (wildlife & vegetation), urban runoff
	PCBs (Polychlorinated biphenyls)	Urban runoff
Serrano Creek	Ammonia (unionized)	Historical and current crop production
	Indicator Bacteria	Natural sources (wildlife & vegetation), urban runoff
	pH	Natural geology, historical and current crop production
Silverado Creek	Pathogens	Natural sources (wildlife & vegetation), urban runoff
	Salinity/TDS/Chlorides	Natural sources, including groundwater

*Indicator Bacteria (Including Total and Fecal Coliforms, Pathogens, and Enterococcus)*

Indicator bacteria are broad classes of bacteria that are intended to indicate the possible presence of bacteria that are pathogenic to humans. Indicator bacteria can come from a wide array of sources. Controllable sources include septic systems and pet waste. However, much of the observed bacteria may come from natural, largely uncontrollable sources, including wildlife and stream or riparian vegetation, as well as regrowth of bacteria in water bodies.

Newport Bay was 303(d) listed for exceedances of REC-1 water quality objectives, resulting in adoption of the Newport Bay Fecal Coliform Total Maximum Daily Load (FC TMDL) in April 1999. Most sampling sites in Newport Bay attained water quality objectives in at least 75% of samples for the last decade of data collection, particularly in Lower Newport Bay (County of Orange 2012a). In 2011-2012, the highest annual geometric mean concentration of fecal coliforms at any site in Upper Newport Bay was only 44 CFU/100 mL, though the highest single concentration was 6,800 CFU/100 mL, as compared to the fecal coliform single sample maximum of 400 CFU/100 mL. Additional information on bacterial water quality in the watershed can be found on page 3-49 and in the series of FC TMDL annual reports (e.g. County of Orange 2012a).

The FC TMDL required analysis of collected data to inform possible TMDL revisions. A report recommending TMDL revisions is being finalized and should be submitted to the Regional Board by the end of 2012. Among the recommendations are a change from a fecal coliform standard to an *Enterococcus* standard, which is believed to track more closely with human illness, and additional studies to evaluate uncontrollable natural sources which can be used to help determine new water quality objectives.

San Diego Creek Reach 1 was listed for exceedances of REC-1 water quality objectives, although REC-1 full body contact recreation is prohibited in San Diego Creek by the County of Orange. The 2011-2012 annual geometric mean concentration of fecal coliforms in San Diego Creek Reach 1 was 141 CFU/100 mL. However, about half of samples from San Diego Creek exceeded the single sample maximum of 400 CFU/100 mL, with the highest concentration being 54,000 CFU/100 mL. An effort is underway to revise basin plan recreational water quality objectives through the Stormwater Standards Task Force, comprised of local public agencies, the Regional Board, and EPA. One of the expected

recommendations will be to base standards on *Escherichia coli* instead of fecal coliform, which will require development of new water quality objectives.

REC-1 and REC-2 uses apply intermittently to upstream tributaries (SARWQCB 2008). Thus, fecal coliform objectives also currently apply to these tributaries. Streams listed for indicator bacteria or pathogens are tributaries Borrego Creek, Peters Canyon Wash, San Diego Creek Reach 2, Santa Ana-Delhi Channel, and Serrano Creek, as well as three small coastal streams, Buck Gully Creek, Los Trancos Creek, and Morning Canyon Creek. Current bacterial data are limited for these streams, but all of these listings will also likely be affected by efforts of the Stormwater Standards Task Force mentioned above.

### *Sediment*

Excess sedimentation and siltation was one of the earliest water quality impairments recognized in the Newport Bay watershed. Upper Newport Bay and San Diego Creek Reaches 1 and 2 are listed for sediment exceedances. These listings resulted in adoption of the Newport Bay Sediment TMDL (SARWQCB 1999). Sediment sources included agriculture, construction zones, and in-channel scour during storm events. The TMDL required annual average sediment loads to be reduced from 250,000 tons to 125,000 tons, as well as certain minimum capacity requirements in in-channel and in-bay sediment basins. Although the annual sediment load during the 2010-2011 monitoring year was 138,966 tons, the average annual load from 2001-2011 was only 51,056 tons, far below the TMDL target. TMDL monitoring is on-going, but additional control measures are not expected to be implemented at present. Additional information regarding sediment impairment in the Newport Bay watershed can be found on page 3-51 and in the series of Sediment TMDL annual reports (e.g. County of Orange 2012b).

### *Nutrients*

In the context of water quality, nutrients primarily refer to nitrogen and phosphorus and their various chemical forms. While both are essential for healthy ecological functions, excess nutrients can result in eutrophication, a condition in which excessive plant growth impairs ecological health. In Newport Bay, this was observed as excessive algal growth, which in turn resulted in periodically low dissolved oxygen. Watershed nutrient sources included crop production including nurseries, urban runoff from residential and commercial landscaping, and several natural, largely uncontrollable sources such as surfacing groundwater and waste from wildlife and riparian vegetation.

Nutrient water quality objective exceedances resulted in adoption of the Nutrient TMDL (SARWQCB 1998). The TMDL required annual nutrient loads to be reduced by 50% relative to a 1990-1997 baseline period, resulting in annual targets of 298,225 lbs of nitrogen and 62,080 lbs of phosphorus. In the most recent year with finalized data, the nitrogen load was 113,939 lbs, while the average annual load for the previous 5 years was 136,798 lbs, both below the target for nitrogen. The phosphorus load was 65,971 lbs, which was slightly above the target, while the average annual load in the previous 5 years was 40,106 lbs. In the last five years, the nitrogen target has never been exceeded and the phosphorus target was exceeded once.

While the watershed is generally in compliance with TMDL requirements, TMDL monitoring and efforts to improve water quality are on-going. County staff continues public outreach efforts, including working with local schools to deliver lessons on water quality protection and to provide field experiences, and working with agricultural interests to implement appropriate BMPs. Development in the watershed continues, which will reduce agricultural runoff. There are no longer any nurseries in the watershed. At present, agriculture represents less than 1% of the watershed.

Additional information on nutrient related water quality can be found on page 3-55 and in the series of Nutrient TMDL data reports (e.g. County of Orange 2012c).

### *Selenium*

As a water quality issue in the watershed, selenium is linked to nitrogen. Only San Diego Creek Reach 1 is listed for selenium. The area around San Diego Creek historically was a swamp that collected regional stream flows over millennia, and the nitrogen and selenium they contained. This was exacerbated by drainage of the swamp and conversion to agriculture. Channelization of San Diego Creek and establishment of a permanent stream gave rise to both excessive nitrogen and selenium in the creek, leaching both from the soils in which they had been sequestered. While nitrogen loads have been largely controlled in the last decade, selenium has not.

Dry weather selenium concentrations in San Diego Creek Reach 1 average 17 ppb, ranging from 15-22 ppb. The chronic criterion in the California Toxics Rule (CTR) is 5 ppb (EPA 2000). Therefore, concentrations would need to be reduced by nearly 70% to meet current standards.

A comprehensive effort has been underway since 2005 to study the selenium issue. The Nitrogen and Selenium Management Program (NSMP) has been, among other things, evaluating selenium toxicity, identifying watershed sources, studying its dynamic movement through the watershed, and studying and identifying potential BMPs for implementation. NSMP has also evaluated the CTR objective and has proposed development of a site-specific selenium objective for San Diego Creek. This effort requires additional sampling of bird and fish tissues in the watershed to help determine selenium toxicity, from which an objective can be calculated. Depending upon the outcome of these efforts, required load reductions could change.

For additional information on selenium issues in the watershed, see page 3-60 and <http://www.ocnsmp.com>.

### *Pesticides (including DDT, toxaphene, chlordane, and dieldrin) & PCBs*

Though some pesticide listings in the COCWMA are unspecified, identified listings are primarily for organochlorines. These include DDTs, chlordane, and PCBs in Newport Bay, toxaphene in San Diego Creek Reach 1, DDTs and toxaphene in Peters Canyon Wash, PCBs in Rhine Channel and Balboa Beach, and dieldrin on Balboa Beach. These were primarily the result of historical data showing elevated concentrations of these compounds in routine water quality monitoring, resulting in development of the San Diego Creek/Newport Bay Organochlorine Compounds TMDLs, which were recently adopted by the State Water Resources Control Board (SARWQCB 2007).

None of these compounds is in current use. Historically, organochlorine pesticides were favored in crop production due to their resistance to degradation. However, because of their persistence and the harm they caused over long periods to the environment, uses were cancelled for DDT in 1972, toxaphene in 1982, dieldrin in 1987, and chlordane in 1988. The manufacture of PCBs was banned in 1977. Although aquatic concentrations of these chemicals have declined over time, small amounts are still detectable at times (e.g. Goong 2008). The decline of agricultural land uses in the watershed has also helped reduce the prevalence of organochlorines in water samples.

During the course of TMDL development, numerous technical issues were raised regarding the scientific basis for the TMDLs, including evidence for toxicity of these chemicals and the age of scientific reports used to derive some targets. In addition, TMDL targets were set very low. For example, annual targets for DDT and toxaphene in San Diego Creek are 396 g and 6 g, respectively. From 2006-2008, three

relatively large storms were monitored for organochlorines. The average DDT load per storm was 287 g, while the average chlordane load was 24 g. The largest single storm load for DDT was 476 g, while the largest single storm load of chlordane was 31 g. From these data, even a single storm in any given year could be sufficient to exceed TMDL targets. Finally, the State's new Sediment Quality Objectives, evaluating both direct effects to the benthic community and indirect effects transmitted through the food web, will affect the manner in which sediments and sediment-bound pollutants, such as organochlorines, will be evaluated.

For these and other reasons, TMDL implementation will include a work plan to guide additional studies to examine organochlorine toxicity and determine if TMDL targets require revision. Therefore, it is not possible at present to determine required load reductions. However, these compounds continue to degrade in the environment, albeit slowly, and as noted above, continued watershed development will decrease the already small presence of agricultural land uses and, therefore, organochlorine sources. The natural attenuation of these compounds could render them undetectable in future monitoring efforts.

For additional information on toxic pollutants in the watershed, see page 3-57.

#### *Copper & Other Metals*

A copper listing is in effect for Upper and Lower Newport Bay, with a separate metals listing for Upper Bay only, and copper, lead, mercury, and zinc listings specifically for Rhine Channel, a closed-ended reach of Lower Newport Bay. Rhine Channel listings will be discussed separately below.

In the 2010-2011 monitoring year, 4 of 20 water samples from Lower Bay and 11 of 40 from Upper Bay exceeded the CTR saltwater acute criterion for dissolved copper of 4.8 µg/L (County of Orange 2011). Exceedances had a mean concentration of 6.4 µg/L, while the mean of all samples was 4.1 µg/L.

While sources of copper and metals in Newport Bay have not been comprehensively studied, potential sources include architectural copper, atmospheric deposition, anti-fouling agents in marine paints, and pesticide/herbicide use (EPA 2002). Marine paints in particular may be a primary copper source and efforts are underway to examine this link (e.g. Schiff et al. 2006; OCC 2007).

Rhine Channel was historically home to a number of heavy industries which may have contributed to observed loads, including canneries, metal plating, and boatyards (Anchor 2005). These industries are thought to have contributed significant loads of metals which contaminated sediments, which in turn continue to be a source of dissolved metals to the water column. Dredging of the Rhine Channel was completed in 2011, and ongoing monitoring will track post-dredging water quality.

#### **THE INFORMATION BELOW COVERS ELEMENT C**

*Estimate the amounts of technical and financial assistance needed associated costs, and/or the sources and authorities that will be relied upon to implement this plan.*

Newport Bay TMDL Funding Partners, which include all watershed cities and Irvine Ranch Water District, Irvine Company, and Lennar, collaboratively develop annual TMDL budgets and 5-yr forecasts for Newport Bay TMDL Programs (excluding Sediment TMDL) and Newport Bay Sediment TMDL Program, as shown below:

Fiscal Year	2012-13	2013-14	2014-15	2015-16	2016-17	Grand Total
All TMDLs (excluding Sediment TMDL)	\$1,423,726	\$1,949,426	\$1,869,426	\$1,215,621	\$1,215,621	\$7,673,820
Sediment TMDL	\$648,000	\$618,100	\$1,111,344	\$1,191,304	\$1,111,191	\$4,679,939
Subtotal	\$2,071,726	\$2,567,526	\$2,980,770	\$2,406,925	\$2,326,812	<b>\$12,353,759</b>

At the end of each fish year, the budgets for the TMDL programs are approved to fund the implementation activities. For each funding partner, its shared cost will be the total annual budget multiplied by its percentage of funding share as stipulated in the cooperative agreement (approved separately; currently the agreement in effect is D11-066). At the same time, new 5-year budget forecast is shared on a rolling basis each year. The budget forecast is nonbinding and aims to facilitate each funding partner to plan future implementation activities and estimate future expenditures.

In addition to the above budgeting and near-term and forecasting effort, County is developing a strategy to ensure a long-term, sustainable source of funding for water quality improvement and regulatory compliance for the County and cities, including Central IRWMP area. The proposed tasks include the following:

1. Develop an estimate of funding needs over the next 20 years to ensure regulatory compliance and achieve water quality improvements. The estimate will be to a “concept” level of accuracy which is more accurate than “order-of-magnitude” but not as precise as a preliminary engineering estimate.
2. Identification of viable long-term funding options
  - a. Review the Long Term Financing Study for the Orange County Stormwater Program and subsequent updates;
  - b. Review other data sources including new applicable legislation, other recent successful or viable stormwater funding programs implemented by other agencies, and other financing options for areas similar to Orange County.
  - c. Recommend two or three viable financing options appropriate for the County
3. Funding Options Implementation Planning
  - a. Develop a detailed list of implementation tasks and activities including policy / legal analysis and public outreach, along with key milestones and associated costs for each approved option
  - b. Provide a quantitative analysis for what type of fee would be required to implement each option
  - c. Provide recommendations for how collected fees/taxes would be allocated to local agencies.

**THE INFORMATION BELOW COVERS ELEMENT D**

*An information and education component used to enhance public understanding of the project and encourage their early and continued participation in selecting, designing, and implementing the nonpoint source management measures that will be implemented.*

Section 11 of the Central IRWMP and Section 5 describe in detail the stakeholder process involved in developing the goals and strategies as well as the public outreach work done. Engaging the public and stakeholders is key to a successful watershed management plan. In the Central WMA a formal organizational structure for stakeholder involvement has been in place for over a decade with active participation on regional watershed programs. This comprehensive effort involves local and regional public agencies, environmental organizations, academic institutions, members of the public, and state and federal agencies. Strong collaborative stakeholder relationships enhance the level of involvement and public understanding.

**THE INFORMATION BELOW COVERS ELEMENT I**

*A monitoring component to evaluate the effectiveness of the implementation efforts over time, measured against the criteria established under item h immediately above.*

A variety of monitoring components are used in the Central OC WMA to evaluate the effectiveness of implementation efforts in these watersheds. The table below describes the monitoring component:

Mass emissions monitoring:	Using measurements of a range of urban contaminants, loads, as well as exceedances of relevant water quality criteria, evaluate trends over time.
Estuary / wetlands monitoring:	Using measurements of key pollutants, loads, and biological community parameters, describe impacts on estuarine and wetlands ecosystems and the relationship of any impacts to runoff, based on theoretical and empirical expectations about the structure and function of healthy communities.
Bacteriological / pathogen monitoring:	Using measurements of a suite of bacterial indicators, identify spatial and temporal patterns of elevated level in order to prioritize problem areas.
Bioassessment:	Using multiple lines of evidence (bioassessment, physical habitat, chemistry, toxicity), describe impacts on stream communities and the relationship of any impacts to runoff, based on comparisons with reference locations and a regional Index of Biotic Integrity (IBI) on a year-to-year timeframe.
Dry Weather Reconnaissance:	Using measurements of key pollutants identify potential illegal discharges and illicit connections, based on comparison with historical data and available estimates of background levels.
Land use correlations:	Using an experimental, “before-after,” design, identify changes in runoff associated with the urbanization of previously agricultural land.
TMDL/303(d) listed water body monitoring – nutrient TMDL	Using measurements of nutrients, track progress of nutrient control measures over time, based on comparison with TMDL targets.
TMDL/303(d) listed water body monitoring - toxics TMDL	Using measurements of key pollutants identify potential sources and pathways of toxic compounds and track progress of control measures over time, based on comparison with TMDL targets.



**ELEMENT E** *Schedule for implementing the nonpoint source management measures identified in this plan that is reasonably expeditious.*

A schedule will be developed for each project as it is implemented.