

## **Progress Report**

**Progress Report # 007**

**Reporting Period:** November 1, 2007  
– April 30, 2008

**Submittal Date:** **June 5, 2008**

**Agreement No:** 05-230-55-0

**Project Name:** ASBS Planning Program - Integrated Coastal Watershed Management (ICWM) Plan

**Contractor Name:** City of Newport Beach

**Program Director/Designated Representative:** Dave Kiff /Robert Stein

### **Summary of Work Completed During This Reporting Period**

<b><u>Task</u></b>	<b><u>Deliverable by Subtask #</u></b>	<b><u>Due Date</u></b>	<b><u>% of Work Complete</u></b>	<b><u>Date Submitted</u></b>
1.0 PAEP, Monitoring Plan, QAPP and CEQA	1.1 Project Assessment and Evaluation Plan	6/06	85%	
	1.2 Monitoring Plan	10/06		
	1.3 Quality Assurance Plan	10/06	100%	
	1.4 California Environmental Quality Act	2/07	100%	
2.0 WORK TO BE PERFORMED BY GRANTEE				
2.1 Plan Preparation Activities (Consultant: Weston Solutions) (100% complete)	2.1.1 Gather Information	5/06	100%	9/06
	2.1.2 ICWMP TAC meetings	6/06	100%	
	2.1.3 Agency meetings	6/06	100%	
	2.1.4 ICWMP timeline	6/06	100%	
	2.1.5 Identify subcontractors	6/06	100%	11/06
2.2 Public Use Impact Report (Consultant: Coastal Resources)	2.2.1 Review Background Data and Reports	6/06	100%	5/07
	2.2.2 Public Use Report	8/07	50%	
2.3 Urban Runoff Flow and Water Quality Assessment (Consultant: Weston Solutions)	2.3.1 Review baseline data (in progress)	03/08	100%	
	2.3.2 Review and collect water quality data (in progress)	03/08	100%	
	2.3.3 Drainage Area Water Quality Assessment Reports	7/06	100%	

2.4 Cross-Contamination Impacts (Consultant: Everest International Consultants)	2.4.1 Review previous Newport Coast and Laguna Beach watershed reports	8/06	100%	4/07
	2.4.2 Review existing coastal watershed program, marine habitat sites and monitoring programs	8/06	100%	4/07
	2.4.3 Establish range of loading rates for specific constituents	9/06	100%	
	2.4.4 Review water quality data for CCA #69	8/06	100%	
	2.4.5 Review sediment discharge data	8/06	100%	
	2.4.6 Review longshore current and pollutant transport data	8/06	100%	
	2.4.7 Pollutant Loading Report (* report includes results from Tasks 2.4.3 to 2.4.7.)	10/06	95%	12/07*
	2.4.8 Expand GIS database	2/07	100%	
	2.4.9 Prepare the hydrodynamic and water quality model	11/06	100%	
	2.4.10 Estimate typical currents using the model	12/06	100%	
	2.4.11 Prepare a Particle Tracking Analysis	1/07	90%	
	2.4.12 Draft Cross-Contamination Impact Report	2/07	90%	
	2.4.13 Final Cross-Contamination Impact Report	3/07		
2.5 ASBS Research and Data Collection and Pilot Renovation Program (Consultants: Weston Solutions, UCI and Cal-State Fullerton)	2.5.1 Review data from other marine protection areas.	7/06	100%	5/07
	2.5.2 Review flow and water quality report from the Cities of Newport Beach and Laguna Beach	7/06	100%	
	2.5.3 Define a toxicological study	3/08	100%	
	2.5.4 Conduct the toxicological study	3/08	100%	
	2.5.5 Define ASBS baseline information. Prepare a monitoring mitigation plan (MMP). Define a comparison study with a reference ASBS	3/08	100%	
	2.5.6 Implement MMP and Comparison Study	11/06	70%	
	2.5.7 Define a Pilot Renovation Experiment	5/07	100%	
	2.5.8 Implement a Pilot Renovation Experiment	03/08	50%	
	2.5.9 Add ASBS's to Mineral Management Services tracking program			

2.6 Coordinate Elements into ICWMP (Consultant: Weston Solutions)	2.6.1 Develop metric	9/06	50%	
	2.6.2 Draft Integrated Coastal Watershed Management Plan (ICWMP)	11/07	100%	4/07
	2.6.3 TAC review of ICWMP	12/07	100%	5/07
	2.6.4 Final ICWMP	2/08	100%	11/07
2.7 CEQA Documentation and Permits (Consultants: Cal-State Fullerton and Weston Solutions) (100% complete)	2.7.1 Obtain list of required Permits, CEQA	2/072/07	100%	1/07
	2.7.2 Submit permits, CEQA		100%	
2.8 Community Outreach and Agency Training (City is the lead on this task) +	2.8.1 Submit website information	10/07	50%	
	2.8.2 Public Forums	8/07	85%	
	2.8.3 Training Manuals	12/07		

## **Introduction**

This grant project implements a series of assessment and studies to identify, investigate and quantifying those environmental impacts having the most deleterious effects on the water quality and habitat of the ASBS. These studies include:

- water quality and flow assessment of the coastal canyons and ASBS,
- Newport Bay cross contamination study
- public use impact assessment
- toxicity testing, bioaccumulation studies and biological survey

The field studies are complete and the information is now being analyzed. Based on the findings of these studies, an ASBS Impact Metric will be prepared that will semi-quantitatively present the weight of evidence on the environmental impacts of most concern.

A monitoring mitigation plan will present the findings of the assessment studies and proposed Impact Metric. The Impact Metric will be used as the assessment tool to establish priority issues to be addressed under a mitigation management plan for the ASBS. The mitigation management plan will be included into the ICWMP (Task 2.6) and will summarize management strategies to be used for addressing the prioritized issues. The management plan will also include a mitigation monitoring program (Task 2.5.6). The Impact Metric will also be used to assess the effectiveness of the management measures in reducing the impacts to the marine ecology.

Finally, under this grant, a pilot restoration effort was initiated to restore a native marine plant species, rockweed, into the rocky intertidal areas at the mouth of Buck Gully.

## **Task Accomplishments (November 1, 2007 – April 30, 2008)**

This section describes specific tasks accomplished during this period.

### **Task 1.0 Project Assessment and Evaluation Plan (PAEP), Monitoring Plan, Quality Assurance Project Plan (QAPP) and California Environmental Quality Act – Task Complete**

The PAEP, QAPP and Monitoring Plan are complete. The Evaluation Assessment will be prepared based on the PAEP and presented in the Impact Metric report. The Evaluation Assessment will summarize the results of the studies conducted under this grant project that are the basis for the development of the Impact Metric. The expected outcomes and effectiveness measurements will also be presented. During this period, the development of the Impact Metric was initiated after completion of the ASBS studies. Work was originally scheduled for completion, along with the project assessment, March 2008. The completion of the Impact Metric and Assessment has been delayed due to field conditions and the new anticipated completion of this work is August 2008.

### **Task 2.1 Plan Preparation Activities**

This task has been completed.

### **Task 2.2 Public Use Impact Report**

#### **2.2.1 Review Background Data and Reports**

This sub-task has been completed.

#### **2.2.2 Public Use Report**

The work completed during this period included completion of the year-long public use impact studies and compilation of the results. Work on the Public Use Report was initiated this period and the draft report is anticipated for submittal in July 2008. The Final Report is anticipated for completion in August 2008.

Preliminary results from the Public Use Impact Study were used to develop the priorities and scope of the alternatives presented in the Newport Coastal Watershed Management Plan (Task 2.6). The alternatives included in this plan included a public use impact reduction program. Components of this concept program include expanding the current docent program, improving ASBS protection signage, using touch tanks at designated educational facilities and a pilot public-access control project. Further recommendations will be presented in the Public Use Report.

### **Task 2.3 Urban Runoff Flow and Water Quality Assessment**

The Water Quality and Flow Assessment Report was completed in January 2007 with a copy of the Report submitted to DWR. This task is completed.

The results of the additional ASBS studies including the additional toxicity tests, bioaccumulation studies and biological surveys of the rocky inter-tidal will be presented

in the mitigation monitoring plan (Task 2.5.6) and the mitigation management plan (Task 2.6).

#### **Task 2.4 Cross Contamination Impacts**

2.4.1 Review previous Newport Coast and Laguna Beach watershed Reports  
This subtask is completed.

2.4.2 Review Existing Coastal Watershed Program  
This subtask is completed.

2.4.3 Establish Range of Loading Rates for Specific Constituents  
This subtask is completed.

2.4.4 Review Water Quality Data for CCA#69  
This subtask is completed.

2.4.5 Review Sediment Discharge Data  
This subtask is completed.

2.4.6 Review Long-shore Current and Pollutant Transport Data  
This subtask is completed.

2.4.7 Pollutant Loading Report (Results from Tasks 2.4.1 to 2.4.6)

The draft Pollutant Loading Report was completed and submitted in December 2007. The Final Pollutant Loading Report, along with the Final Cross Contamination Report (Task 2.4.13) is anticipated for submittal in August 2008.

2.4.8 Expand the GIS Database  
This subtask is completed.

2.4.9 Prepare the Hydrodynamic and Water Quality Model  
This subtask is completed.

2.4.10 Estimate Typical Currents with Model  
This subtask is completed.

2.4.11 Prepare a Particle Tracking Analysis  
This subtask is completed.

2.4.12 Draft Cross Contamination Impact Report

Everest has developed a method to use the limited available pollutant loading data for the cross-contamination modeling. The method is based on using the average pollutant concentration of the harbor and the flow data to estimate the pollutant loading discharging from the harbor to the coastal areas.

Everest has completed the particle tracking analyses and the cross-contamination mixing modeling. During this period, work continued on the preparation of the draft cross-contamination report. The draft report is approximately 90% complete and is anticipated to be submitted in July 2008. The general findings of the cross-contamination study include:

- Hydrodynamic conditions are suitable to transport potential pollutants from the Harbor to ASBS 32 and ASBS 33. The magnitude of the impact of the pollutants from the Harbor to the ASBSs would depend on the pollutant loadings from the Harbor.
- Discharges from the coastal creeks in general would only impact the nearby coastal areas.
- Discharges from Buck Gully and Morning Canyon are affected by the tidal flow through the Harbor inlet. Under certain conditions, pollutants discharging from these two creeks may impact the Harbor.

#### 2.4.13 Final Cross-Contamination Impact Report

The Final Cross Contamination Impact Report is anticipated for submittal in August 2008.

### **Task 2.5 ASBS Research and Data Collection and Pilot Renovation Program**

#### 2.5.1 Review Data from other Marine Protection Programs

This subtask is completed. The results of this data review will be presented in the Impact Metric technical document as basis for the metric framework development.

#### 2.5.2 Review Flow and Water Quality Reports

This subtask is completed. The results of this data review of water quality will be presented in the Impact Metric technical document as basis for the metric framework development.

#### 2.5.3 Define Toxicity Study

This subtask is completed. The methods and scope of the Toxicity Study were defined in the QAPP and Monitoring Plan.

#### 2.5.4 Conduct Toxicity Study

This subtask is completed. The results of the additional toxicity testing on giant kelp will be presented in the Impact Metric technical document as basis for the metric framework development.

#### 2.5.5 Define Baseline ASBS Baseline Information

This subtask is completed. The results of this data review of water quality will be presented in the Impact Metric technical document as basis for the metric framework development.

#### 2.5.6 Implement Monitoring Mitigation Plan and Comparison Study

This task is complete. The work performed during this period included completion of the bioaccumulation study.

An initial deployment of mussels occurred in January 2007. A late-season storm in April 2007 brought significant wave action to the Newport Coast that dislodged the out-planted mussels at all five of the monitoring locations. A second set of mussels were deployed using alternative attachment techniques in July 2007.

One half of the deployed mussels were harvested in late October 2007 (after three months of deployment during primarily dry weather conditions) and sent to the laboratory for analysis.

The remaining mussels were harvested in January 2008 after a total field deployment of six months and then sent to the lab for analysis and data review. Weston is currently finalizing the assessment of the bioaccumulation study and the findings will be presented in the Impact Metric technical document as basis for the metric framework development.

#### 2.5.7 Define a Pilot Renovation Experiment

Subtask is completed.

#### 2.5.8 Implement a Pilot Renovation Experiment

The purpose of this study is to test the efficacy of several methods for experimentally reestablishing *Silvetia compressa* at Little Corona del Mar (CDM) in Orange County, California. The ultimate goal is to: a) determine an effective procedure that can be used to re-establish *Silvetia compressa* at this site, and 2) re-establish this rockweed at CDM where it was prevalent previous to the 1950s. This study was implemented in two stages.

In stage I, California State University at Fullerton (CSUF) investigated two methods involving the transplantation of juvenile thalli (< 2.5 cm in diameter) and the relocation of fertile reproductive structures starting in February 2007. The effects of grazing and canopy-protection, two factors known to influence the success of early post-settlement stages of rockweeds, such as *Silvetia*, also were determined. Stage I studies were conducted at four study sites using a three-way factorial design. The transplanted and seeded replicates were monitored monthly which will continue until ~July 2008. As of March 2008, CSUF have not been successful in re-establishing recruits from our initial, two-month seeding technique. Transplantation of juveniles has resulted in relatively low survival, although survival was enhanced by the presence of the experimental canopy treatment.

In stage II studies, initiated in January 2008, a third method was chosen entailing the transplantation of fertile adult thalli (15-40 cm in length) and juvenile thalli onto both horizontal (< 30°) and the landward sides of vertical (> 45°) surfaces at Little Corona del Mar. Similar sized individuals on both types of surfaces were marked at Morning Canyon, but not manipulated, to compare transplants with natural survival rates. Monthly monitoring of these transplants and marked plants will continue until ~ January 2009. As of April 2008, we have found moderate survival of transplants, although

transplant survival was slightly less than natural survival rates. In addition, we found that adult transplants exhibit higher survival than juvenile transplants and that greater survival for both size classes occurs on vertical surfaces.

Although it is still too early to tell, given the survival rates of transplanted materials and the high number of transplants placed at Corona del Mar in stage II, CSUF expect an overall successful re-establishment of the rockweed population at the site.

Due to the site condition challenges and need for modifying restoration techniques, additional time has been requested by CSUF to complete Stage II studies at no additional cost.

## **Task 2.6 Coordinate Elements into Integrated Coastal Watershed Management Plan**

### **2.6.1 Develop Impact Metric**

Progress during this period included completion of the ASBS special studies and the initiation of the development of the Impact Metric framework. The results of the biological surveys, water quality monitoring, bioaccumulation studies and restoration pilot project were used as a basis for the development of the Impact Metric. The development of the Impact Metric is also being coordinated with the regional study work plan development for Bight08 and the Ecosystem Assessment framework that is being developed for the La Jolla Shores ASBS by the City of San Diego and Scripps Institute of Oceanography.

The draft Impact Metric Technical Report is in progress and expected to be submitted in July 2008. The final report is anticipated in August 2008.

### **2.6.2 Draft Integrated Coastal Watershed Management Plan**

The draft Newport Coastal Watershed Management Plan was completed in May 2007.

### **2.6.3 TAC and Stakeholder Review**

The presentation of the draft Newport Coastal Watershed Management Plan to the stakeholders was given in May 2007.

### **2.6.4 Integrated Coastal Watershed Management Plan**

The Final Newport Coastal Watershed Management Plan was completed in November 2007. Comments from the stakeholders were incorporated in the final plan.

## **Task 2.7 CEQA Documentation and Permits**

This task is completed.



## **Task 2.8 Community Outreach and Agency Training)**

### **2.8.1 Website Information**

Information on the ASBS program can be found on the City's website:

<http://www.city.newport-beach.ca.us/watershed/>

### **2.8.2 Public Forums**

The ASBS program was presented at the California Non-point Source Conference on May 6<sup>th</sup>, 2008 in San Diego. Another presentation is planned for June 10 at the Southern California Coastal Water Research Project Bight '08 coordination meeting.

### **Program Schedule**

The ASBS bioaccumulation and Public Use Impact studies were not completed until May 2008. While very good progress has been made, this is three or four months behind the schedule as originally envisioned. The final analyses and reports are anticipated to take 4 to 5 months to complete. Therefore, the tasks for the Impact Metric and Technical Report, the Public Use Study Report, and the Cross Contamination Study Report under the grant are not anticipated to be complete before September 1, 2008 and a contract extension for these tasks will be requested.

CSUF is also requesting additional time to continue monitoring the transplanted materials in both experimental stages. Due to the low success of stage I transplants and no success in the seeding technique, it was necessary to investigate other techniques to increase the success, leading to the stage II transplant studies. Given that stage II began only a few months ago, we request that our project continue until January 2009. After this time, we expect approximately 6 months to analyze and write the report. Therefore, we are requesting a no-cost extension for a year ending in June 2009. During this time, we plan to examine the reproductive potential of transplanted material by counting receptacles on each replicate plant. We are also examining abiotic factors, such as light and desiccation stress, on both vertical and horizontal surfaces to attempt to determine reasons for potentially different success rates of transplants located on different substrate orientations.

### **Project Budget**

No new costs were incurred in the past period: all consultants are performing tasks specified in their contracts.

Submitted by: \_\_\_\_\_ Date: \_\_\_\_\_