

**SOUTHERN CALIFORNIA COASTAL WATER RESEARCH PROJECT (SCCWRP)
REQUEST FOR PROPOSAL**

***IN SITU* BENTHIC FLUX MEASUREMENTS IN UPPER NEWPORT BAY**

I. INSTRUCTIONS TO BIDDERS

Three copies Bidder's complete Proposal to provide the services detailed are to be enclosed in a sealed envelope marked "Benthic Flux Study" and addressed to:

Bryan Nece
Administrative Officer
7171 Fenwick Lane
Westminster, CA 92683-5218

All supplemental materials requested within this Proposal must be attached to the Proposal. Any unauthorized conditions, limitations, or provisions attached to this Proposal may be cause for rejection.

If a Bidder wishes to withdraw its Proposal, the Bidder may do so without prejudice by delivering a written notice of withdrawal to the Administrative Officer at any time before the time fixed for the opening of bids.

Sealed bids will be received at SCCWRP's offices, 7171 Fenwick Lane, Westminster, CA, up to the hour of **11:00 am on January 16, 2004**, at which time, the Administrative Officer will open the bids. Bids received by facsimile or E-mail will not be accepted.

All Bidders should inform SCCWRP in writing of their intention to submit a bid by January 5, 2004 via email (bryann@sccwrp.org), FAX (714.894.9699) or letter mail. Although this notification is not mandatory, it is necessary to ensure receipt of future updates to the bid notification. SCCWRP will hold a non-mandatory bidders meeting at 10:00 a.m. on January 5, 2004, at SCCWRP's office in Westminster. This meeting is intended to provide Bidders the opportunity to ask questions and request clarifications about this document. SCCWRP's responses to will be sent to the Bidders by E-mail and posted on the SCCWRP web site (www.sccwrp.org).

This solicitation for proposals shall not be construed as obligating SCCWRP to award a contract or pay any compensation for the information solicited.

II. BACKGROUND AND GOALS OF STUDY

Newport Bay is the second largest estuarine embayment in southern California and provides critical natural habitat for terrestrial and aquatic species (Figure 1). The upper portion of the Bay is a state ecological reserve and serves as refuge, foraging areas, and breeding grounds for a number of threatened and endangered species. The Bay also provides significant spawning and

nursery habitats for commercial and non-commercial fish species. However, the Bay is subject to high nutrient loads, resulting in the excessive growth of macroalgae and the impairment of these beneficial uses. Excessive production of macroalgae can reduce the habitat quality of the Bay by depleting oxygen levels, leading to fish and invertebrate mortality.

Nutrient impairment is one reason for the Bay's listing on the Clean Water Act Section 303(d) list. The 303(d) listing precipitated the development and adoption of a Total Maximum Daily Load (TMDL) for nitrogen (N) and phosphorus (P) for Newport Bay in 1998. Current estimates of nutrient loading to Upper Newport Bay are based on surface water inputs from the rest of the watershed and do not account for within-Bay sources of nutrients, such as remineralization from sediments. Sediments are a potentially significant non-point source of N and P in coastal systems such as Newport Bay. Sediment-derived nutrients are biologically available to macroalgae and may cause algal blooms to persist even when nutrient loading from the watershed is reduced to levels calculated to limit macroalgal biomass. The contribution of nutrients from sediments should be incorporated into the overall nutrient budget for Newport Bay in order to refine the TMDL for nutrients and properly manage the rest of the watershed so as to meet management endpoints identified by the SARWQCB.

The Southern California Coastal Water Research Project was recently awarded a Prop 13 grant to gather data that will assist the Santa Ana Regional Water Quality Control Board in refining the nutrient TMDL for Newport Bay. This project has the following overarching objectives:

- 1) determine rates and environmental factors controlling sediment-water column nutrient flux;
- 2) examine relationships between sediment nutrient flux and macroalgal biomass and tissue nutrient status;
- 3) compare magnitude of nutrient loading from sediments to other nutrient inputs to the Bay; and;
- 4) provide data necessary to refine water quality model of the Bay.

There are three major technical tasks in this project. These include:

- Task 1. Monitoring the temporal and spatial variability of sediment solid phase and porewater nutrient concentrations at three sites intertidal and subtidal zones of UNB over five sampling periods in one year (see Figure 1);
- Task 2. An experiment involving laboratory batch incubations of sediment cores to determine the interactions of water column oxygen, salinity, and nutrient concentration on the magnitude and direction of benthic nutrient flux;
- Task 3. Quantification *in situ* benthic nutrient flux at two sites during the late wet season (February-March 2004) and dry season (July-September 2004).

This data will permit incorporation of sediment-derived nutrients into the total nutrient load in the Bay, which will help to better define the maximum watershed nutrient load permissible to sustainably manage the Bay. A dynamic water quality model has been developed for the SARWQCB to refine the San Diego Creek/Newport Bay nutrient TMDL. Information from this project will be used to calibrate and validate the model, enabling it to better predict the response of the macroalgae to different management scenarios.

III. CONTRACTOR SCOPE OF WORK

SCCWRP is requesting proposals from potential consultants to develop a study to measure rates of *in situ* benthic flux nutrient flux in the subtidal zone of Upper Newport Bay. This study will complement the two other major tasks outlined above (Task 1- temporal and spatial variability in sediment solid phase and porewater nutrient concentrations and Task 2- laboratory sediment core incubation experiment). Descriptions of the project background and sampling and analysis plans for Task 1 and 2, excerpted from a Quality Assurance Quality Control Plan, are included in Appendix 1.

The *in situ* benthic flux study should include the following elements: 1) estimates of benthic flux at two subtidal sites Upper Newport Bay during wet season (February –March 2004) and dry season (July –September 2004), 2) estimates sediment nutrient flux under light and dark conditions, and 3) measurements of those factors which will be useful in interpreting the nutrient flux data and shed light on processes controlling nutrient flux (physiochemical parameters, sediment oxygen demand, bioturbation, etc.) Nutrients of interest include dissolved inorganic and organic nitrogen and phosphorus (ammonia, nitrate, nitrite, soluble reactive phosphorus, dissolved organic nitrogen, dissolved organic phosphorus).

Proposals should include a schedule of time required complete the work. Contractor deliverables will include:

1. Detailed sampling and analysis plan, including costs and time line, based on the final contractor scope of work.
2. Quarterly written and oral updates of the progress of the study to the SCCWRP
3. Draft report shall contain detailed sections on the approved study approach, methods, results, discussion, and conclusions.
4. Final report that addresses the feedback and comments from SCCWRP on the draft report.

II. SPECIAL REQUIREMENTS AND INSTRUCTIONS

The contractor will be required to comply with the following special requirements and instructions during the performance of services rendered under this project.

General

The Contractor is required to comply with all general terms and conditions, certifications, assurances, provisions, laws, and regulations of State Water Resources Control Board Contracts.

Insurance

The Contractor shall, at their sole expense, maintain in effect the following insurance coverage and include SCCWRP as an additional insured on their policy:

Workers' Compensation insurance shall be held and maintained by the Bidders as required by applicable laws of the State of California with a minimum amount and limit of One Million Dollars (\$1,000,000) for each accident.

General Liability insurance shall be held and maintained by the Bidders covering all operations by or on behalf of the Bidders providing insurance for bodily injury liability and property damage liability. The combined single limits of liability for bodily injury or property damage shall be One Million Dollars (\$1,000,000) for each occurrence, and One Million Dollars (\$1,000,000) aggregate.

Automobile Liability (Bodily Injury and Property Damage Liability) insurance shall be held by the Bidders, including coverage for all owned, hired, and non-owned automobiles. The combined single limit of liability shall be Two Hundred Fifty Thousand Dollars (\$250,000) for any one accident or loss.

Determination of Satisfactory Progress

Satisfactory progress will be determined through quarterly reports. These reports may be in written form, or at the request of SCCWRP, in the form of a presentation.

Billing and Retention

The Contractor shall provide invoices for work completed on a monthly basis. SCCWRP shall have the right to retain from the Contractor's earnings for each period for which payment is made an amount equal to ten percent (10%) of such earnings, pending satisfactory completion of the agreement.

Ownership

All interim, draft, and final documents, studies, graphics, maps, photographs, computer models, data sets, and reports prepared by the Contractor will be developed using public funds and are intended for public use. Public documents/products lose their status as privileged and proprietary and may not be used for proprietary development or profit.

Length of Contract

The term under this contract will be approximately two years. The proposal selected has to be finished by March 2005.

V. PROPOSAL SUBMISSION

Length and Content of Proposal

Proposals are limited to 10 single spaced pages (Times New Roman, 12-point font), exclusive of team qualifications, resumes and budgets. Bidders must submit three copies of the entire proposal package.

Content should address the following:

- 1) **Technical approach** for the study, including how the proposed approach meets the goals of the described in “Contractor Scope of Work.”
- 2) **Qualifications and experience** of the personnel that will be working on the proposed project. Minimum qualifications include experience estimating chemical fluxes using *in situ* benthic chambers and a track record of articles in peer-reviewed scientific journals on studies measuring benthic chemical fluxes

Bidders are encouraged to include up to two additional pages (beyond the 10 page proposal limit) identifying optional studies that would build upon and/or expand the results of the base study, should additional funding become available. Optional studies could include, but are not limited to, additional technical analysis and/or investigations that would expand the regional applicability of the study, provide greater understanding of the relative importance of benthic flux to the Upper Newport Bay N and P budgets, or provide better understanding of estuarine biogeochemical processes in southern California estuaries. Content of these optional studies will not be rated in the bid evaluation process.

Additional Information to Accompany Proposal Form

Budget

Bidders should still submit costs for each task as well as a total cost for their proposal. These costs will be considered firm fixed fee proposals. The proposed budget should be included as a separate page(s) from the technical proposal. Detailed budgets for each study element outlining the proposed expenditures may be requested by SCCWRP from the winning Bidders. Costs for optional studies are not required.

Qualifications and Team Organization

Include resumes for principal personnel who will participate in study approach. Bidders should also include information on whether graduate students will work on the project, and if so what components of the proposed study would become part of a Masters or PhD thesis.

VI. BID EVALUATION PROCESS AND CRITERIA

Following the opening of bids, a review panel will evaluate the bids using the following criteria and scoring system. A maximum score of 100 points is possible.

1. Study approach. Each study approach will be rated based on the likelihood that it will meet the requirements of the study described in **Contractor Scope of Work**. (30 pts.)
2. Qualifications and experience. Proposals will be rated based upon each bidder’s qualifications and experience. (40 pts)
3. Cost. Each Bidder will be rated on its proposed cost of the study approach. (25 pts)
4. Schedule. Each bidder will be rated on how realistic its proposed schedule is for the completion of the study. (5 pts)

Figure 1. Map of Upper Newport Bay Ecological Reserve. Stars indicate potential sampling locations for Tasks 1 (temporal and spatial sediment sampling) and 3 (*in situ* benthic flux)

