

## Attachment 4-3

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### **COPPER/NICKEL ACTION PLANS FY 02-03 UPDATE AND PROPOSED FY 03-04 WORKPLAN APPROACH**

#### **FY 2002-2003 UPDATE**

The Program presented a summary of SCVURPPP Copper and Nickel Action Plan (CAP) FY01-02 activities in an appendix to the September 15, 2002 FY 2000 – 2001 Annual Report. That document outlined the Program's intent, consistent with the adaptive management structure of the CAP, to refine and streamline CAP reporting, and to help work towards developing a coordinated Bay-wide approach for appropriate CAP special studies and activities. Additional discussions about how to best move towards a Bay-wide CAP approach were conducted at meetings held on September 24, 2002 and November 18, 2002.

The Program has taken the lead on developing a revised baseline activity reporting form that was reviewed by the BMM/RS on 11/18/02. Requested changes will be made and a draft set of forms completed during March 2003. Key baseline activities will be reorganized and listed by topic. Special studies and investigations to track and encourage will be individually listed with information on how they are to be tracked/encouraged, who is responsible, the type of work products expected, and when work products are expected. The forms will be structured so that both historic and current actions/accomplishments will be sequentially listed for each activity.

During 2002, BACWA and BASMAA funded \$205,000 for the Copper Nickel Impairment Assessment Step 2 Phase 1 work to prepare copper and nickel action plans and metals translators for the Bay north of the Dumbarton Bridge. To date, surveys of POTW baseline activities have been compiled (by BACWA/BASMAA contractors) along with a draft translator analysis. The draft north of Dumbarton CAPs are targeted for completion by June 2003.

The Program has been coordinating with the north of Dumbarton effort with the intent that the revised and streamlined South Bay baseline reporting formats be applicable as templates for the other stormwater programs (and POTWs) north of Dumbarton. Furthermore, it is anticipated that work products previously developed (or being developed) under the South Bay CAP could be used with minor modifications elsewhere around the Bay. Some examples would include corrosion reduction outreach materials for plumbers, the SCVWD format for tracking copper sulphate use by water suppliers, and education and outreach materials to control copper discharges from pools and spas. The Program has previously committed to preparing a summary of the most effective measures to control copper in discharges of stormwater from targeted industrial sources (targeted by July 2003) for distribution to BASMAA and other Bay Area stormwater programs.

Step 2 Phase 2 of the north of Dumbarton copper nickel work is also modeled after the SSO work conducted for the South Bay. That work consists of 1) a formal request for SSOs pursuant to the SIP section 5.2, 2) an Impairment Assessment Report, 3) derivation of one or more SSOs, and 4) assistance with preparation of a Basin Plan amendment package. A conceptual scope of work for this work was presented to and approved by the CEP Technical Committee on February

### Attachment 4-3

12, 2003. The CEP Administrative Committee and Executive Management Board (EMB) are preparing a detailed scope and budget for review and likely approval in March. The work is projected to take 12 – 15 months to complete at an estimated cost of \$225,000.

There is a certain amount of actual and potential overlap between activities and reporting required under the CAP, under other Provisions of the Stormwater NPDES permit, and under WMI related activities. As part of the streamlining of the CAP, the Program believes it makes sense to focus the CAP on activities that are most specifically copper related and that are not already being reported on in another forum. As an example, there are several actions under the CAP general action CB-8 “Measures to classify and assess watersheds” that are being conducted by the SCBWMI and pursuant to SCVURPPP’s permit provision C.3. It appears duplicative addressing or at least reporting on watershed assessment measures through the WMI, the Program, and the CAP. The Program will be completing its review of various assessment approaches by July 1, 2003 and developing recommendations relative to conducting future assessments.

During 2002 – 2003 the Program has been tracking proposed amendments to and reissuances of other stormwater program NPDES permits. These permits contain Provisions similar to those in the SCVURPPP permit with the same potential for overlap with an independent CAP. Or conversely, the stormwater permits could be construed to already require the equivalent of the key CAP activities. The Alameda Countywide NPDES Municipal Stormwater Permit, for example, contains requirements for:

- Illicit and Commercial Discharge Controls Program (potentially covering CB-1, 2, 3, 12)
- Monitoring Program (in part pollutant concentrations and mass loadings)
- Multi-year Monitoring and Assessment Plan (RMP participation)
- **Control Program for Copper** (runoff monitoring, BMPs, annual reporting)
- Control Program for Sediment (part of CB-15)
- Watershed Management (potentially covering CB-4, 8, 10 type activities)

Additional potential overlaps exist in POTW source control, pollution prevention, and pollutant minimization programs to the extent these programs are targeting and/or inspecting some of the same commercial and industrial sites.

As part of it’s CAP streamlining efforts, the Program will be attempting to identify areas of duplication among programs and making recommendations as appropriate for changes to clarify responsibilities and to consolidate reporting (e.g., reporting by reference).

Program staff have continued to track activities related to CB-17 and 18 copper impairment uncertainty reduction and fate and transport studies while efforts continue to develop a strategy for how to most efficiently and effectively track and/or encourage these studies Bay-wide.

An interesting paper by Jassby et al. documented a 43% decrease in delta wide primary productivity from 1975 – 1995 due in part to invasion of the clam *Potamocorbula amurensis* in 1986. The paper also noted explanations for apparent trends can be tenuous since different variability mechanisms have different frequencies of occurrence, and more mechanisms play a

### Attachment 4-3

role as the monitoring duration increases (Annual primary production: Patterns and mechanisms of change in a nutrient-rich tidal ecosystem, *Limnology and Oceanography*, 47(3), 2002, 698-712).

Some more recent data from 1999-2001 documented increases in chlorophyll-a in October 2000 and April of 2000 and 2001 to near pre-*Potamocorbula* peak levels in Suisun, San Pablo, and Central Bays. This was monitoring conducted by the SFSU Romberg Tiburon Center as part of an EPA-funded project to develop indicators of ecosystem condition. It began in November 1999 with monthly routine cruises and added weekly cruises to track the spring and fall blooms. (Interagency Ecological Program Newsletter, Vol. 14, No. 4, Fall 2001).

The cyanobacterium *Synechococcus*, a genus present in the South Bay (Palenik and Jassby, RMP, 1999), was reported to be relatively copper resistant across a range of environments in the Sargasso sea compared to a closely related cyanobacterium *Prochlorococcus*. Specimens from shallow mixed layers were less sensitive to copper and were probably members of a copper resistant high-light ecotype. Large eukaryotic cells such as *Skeletonema costatum* were much less copper sensitive (~10 times) than small size and high surface to volume cells such as *Synechococcus*, perhaps explaining the prevalence of larger size species in areas with free copper ion concentrations over 100 pM (Copper toxicity and cyanobacteria ecology in the Sargasso Sea, Mann et al, *Limnology and Oceanography*, 47(4), 2002, 976-988).

The Program will update participants on the status of these streamlining and coordination activities, along with the status of each baseline stormwater and POTW activity, and the semi-annual CAP/NAP review in mid to late April 2003.

### FY 2003 – 2004 WORKPLAN APPROACH

During FY 2003 - 2004 the Program intends to continue to implement the CAP baseline activities and to continue the efforts begun during FY 2002 – 2003 to:

1. More closely coordinate and integrate C/NAP baseline activities with related Program NPDES permit mandated activities.
2. Update and streamline reporting methods and formats to provide easier access to and tracking of current and historical actions and accomplishments.
3. Work with the South Bay POTWs to help the other Bay Area stormwater programs and entities develop North of Dumbarton Bridge C/NAPs based on the updated and integrated baseline activities and streamlined reporting methods and formats.
4. Identify special studies related to reducing the uncertainties identified during the copper/nickel impairment assessment effort that are not unique to the South Bay and would be most efficiently and effectively implemented Bay-wide.
5. Develop a process using the resources and knowledge of SFEI/RMP and the CEP to more comprehensively identify, track, and encourage investigations being conducted by others in the Bay-Delta region that will provide information useful to improving our understanding of copper/nickel impacts in the Bay.

### Attachment 4-3

The Program views 2003 – 2004 as an important transition year for extending what have previously been South Bay only CAP activities to coordinated Bay-wide CAP activities. The Program intends to take an active role in transferring the South Bay CAP knowledge and experience to the other stormwater management entities around the Bay. To help make this happen, the Program will be proposing that the BASMAA Monitoring Committee add Bay-wide CAP development and implementation as a standing item to its agenda. This Committee is already the focal point for many of the relevant monitoring programs and TMDL and CEP efforts being conducted Bay-wide and in individual watersheds.

The Program envisions the process unfolding in the following manner. During the remainder of FY 2002-2003 the Program will take the lead on completing the updating and streamlining of the CAP activities tracking and reporting as described above. The Program will take the lead on presenting the proposed changes to the BMM/RS and incorporating their comments into final templates for reporting FY 2002 – 2003 CAP results and for guiding FY 2003 – 2004 activities.

The Program will assist the Step 2 Phase 1 contractors (EOA, LWA) in presenting the templates to the BASMAA Monitoring Committee and obtaining the Committee member's input on the baseline activities already being conducted, or proposed to be conducted, within their respective jurisdictions. The Program will also assist as needed with presenting this information to the North of Dumbarton Coordinating Committee (CC), to obtain broader based input into other, not specifically stormwater or South Bay based CAP activities. This CC will be serving as the CEP workgroup for the proposed Step 2 Phase 2 copper nickel effort that includes development of an Impairment Assessment Report, one or more SSOs, and a Basin Plan amendment package.

Another CAP item that appears appropriate for the Monitoring Committee to assist with is an appropriate ambient monitoring programs for copper and nickel. The Program will assist in two areas. The Program will present the approach used for developing ambient trigger concentrations and the monitoring program needed to assess compliance with the triggers to assist in developing and appropriate Bay-wide monitoring program and associated triggers. Input will be solicited from RMP staff to evaluate the extent to which the redesigned RMP monitoring can fulfill this need. A related issue that would appear appropriate for this forum is what if any additional copper and nickel monitoring is needed to address the 2002 303(d) program Monitoring List requirements and for development of future Reasonable Potential Analyses and NPDES permit effluent limitations.

Another area where the Program will provide Bay-wide CAP development assistance is with recommendations on potential watershed assessments that would be deemed appropriate to be conducted under the auspices of CAP activities. The Program will be completing by July 1, 2003 its review of various assessment approaches being conducted in the Bay area and nationally. As part of this effort input will be solicited on the progress and results of other pilot projects aimed at identifying and quantifying pollutants of concern such as being conducted through the RMP Sources Pathways and Loadings Work Group and the SWRCB Surface Water Ambient Monitoring Program (SWAMP) and RWQCB Regional Monitoring and Assessment Strategy (RMAS). The intent is to avoid redundant efforts and to put resources to their most effective use in the process of identifying what to study and how.

### Attachment 4-3

Another area where the Program will provide Bay-wide CAP development assistance is to help develop and implement a program to more comprehensively identify, track, and encourage investigations being conducted by others in the Bay-Delta region that will provide information useful to improving our understanding of copper/nickel impacts in the Bay. The Program will provide its revised template list of uncertainties to be addressed and investigations to be tracked as a starting point. The Program believes that tracking of these various investigations and their on-going results would be most effectively conducted with assistance from SFEI/RMP.

The RMP itself is conducting monitoring and special studies of relevance to copper such as attempting to develop improved sediment toxicity testing methods, ambient and sediment toxicity testing, and projects conducted by their various workgroups. The RMP is a member of the Interagency Ecological Program (IEP), that in turn has members or associations with many of the agencies and researchers conducting studies in the Bay-Delta region of relevance to CAP issues such as phytoplankton monitoring. The RMP has tasks in its current workplan directed towards improved data integration from other entities, and improved data dissemination.

The IEP is undergoing a comprehensive programmatic review with a final draft synthesis report from its Science Advisory Group expected in early 2003. One recommendation was that IEP Environmental Monitoring Program (EMP) data be “more rapidly and reliably turned into more useful products through increases human intellectual investment.” The Bay-Delta Science Consortium (that includes most IEP members as well as several local universities and non-profit organizations) has an overall goal to “enhance cooperation and collaboration among researchers working in the Bay-Delta.” As noted in the Winter 2002 IEP Newsletter, “CALFED intends to allocate one million dollars per year for the next few years to the Consortium to help sponsor activities that will help increase collaboration and cooperation.” The Consortium also indicated their intent to sponsor an on-line technical journal and to “investigate ways of sharing digital information among the many data holders and increasing its utility for synthetic analyses.”

The Program will work with the Monitoring Committee and the RMP to help develop a mechanism where relevant information from sources such as those noted above can be efficiently tracked and reported as part of the Bay-wide CAP. The Program will also work with the Monitoring Committee and the Coordinating Committee to evaluate the extent to which the copper conceptual model and associated fate and transport understanding needs to be updated.