

BMM/Reg Subgroup
 Approved for Transmittal to RWQCB on July 27, 2000
 Final Revision made by BMM/RS August 23, 2000
 Appendix A – prepared to reflect only Urban Runoff and Watershed Management Control Actions
 (Includes Urban Runoff Permit Re-issuance Work Group Input)

Appendix B
(Based on Table 4-1 of the Copper Action Plan)
Summary of Urban Runoff and Watershed Management Baseline Copper Control Actions¹

Baseline Number (Dialogue²)	Continuos Improvement³/ Metals Control Plan⁴	Description	Lead Party	Implementation Time-Frame	Implementation Mechanism	Source (s) addressed; potential effectiveness
CB-1 (2 & 4)	-----	<i>Measures to reduce copper discharges from vehicle washing operations.</i> These shall include outreach and education activities targeted towards residential car washing, washing of vehicles at commercial and industrial facilities; and vehicle washing by mobile cleaners; implementation of BMPs by mobile cleaners; and inspections or other mechanisms to evaluate effectiveness of these measures.	SCVURPPP & Co-permittees	FY99-00 Car Wash Education Outreach (March – July 2000) Outreach Ongoing	Urban Runoff and Industrial Storm water Permits Reporting conducted as part of SCVURPPP and Co-permittees Annual Reports	Address mobile cleaners and vehicle washwaters; anticipated to be very small source of loading
CB-2 (6)	-----	<i>Measures to track copper sulphate use by water suppliers.</i> The District shall continue to track and report use of copper sulphate by water suppliers in the Santa Clara Valley (includes State & Federal Water Project)	SCVWD	Track and Report as part of Annual Urban Runoff Report (depending on available data; start with FY 99-00 Annual Report)	Urban Runoff Permit Report tracking results as part of SCVWD Co-permittee Annual Report	Address Copper Sulfate (use has been discontinued by SCVWD); continue to track and confirm

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CB-3 (11 & 35)	C-13 & C-35/ IND-1 & IND-2	<p><i>Measures to control copper in discharges of stormwater from targeted industrial sources.</i> These shall include identification and implementation of appropriate and cost-effective controls. The targeted industries include older printed circuit board manufacturers and metal plating facilities using copper. [Complete Industrial-2: investigations (based on MCMP), identify and implement reasonable controls in conjunction with industry (older printed circuit board manufacturers with copper plating) to reduce elevated levels in runoff from targeted industry including development/implementation of education and outreach plan]</p> <p>Clarify linkage with POTW Pretreatment Programs</p>	<p>SCVURPPP & Co-permittees & industry</p> <p>Possibly POTW permits (clarify need by March 2001 as part of SCVURPPP Work Plan)</p>	<p>Complete IND-2 Technical Report – August 2000</p> <p>Conduct Pilot Outreach Campaign FY99-00 & 00-01 (4/13/00 Work Plan scope)</p>	<p>Urban Runoff and Industrial Storm water Permits</p> <p>Reporting conducted as part of SCVURPPP and Co-permittees Annual Report. (SCVURPPP and Co-permittee FY 99-00 Work Plan contains Industrial-2 scope. Future Work Plans will contain description of additional tasks based on Industrial-2 results.)</p> <p>Develop approach to implement Area-Wide as part of March 2001 Work Plan (tied to Pilot Results)</p>	<p>Address portion of industrial load; very small (<1-2% of copper from urban runoff)</p>

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CB-4 (16.1 & 34)	-----/AUTO-1, 2 & 3	<p><i>Measures to quantify copper control/pollution prevention measures and source loadings.</i> These shall include investigating and/or tracking agreed upon quantification studies concerning copper in vehicle brake pads and field investigations to monitor long-term trends to determine the possible linkage between copper from brake pads and copper concentrations in water.</p> <p>1-Provide appropriate level of local support for agreed upon quantification studies to:</p> <p>2 Investigate and/or track quantification studies for a wide range of existing copper control/pollution prevention measures and sources</p>	<p>SCBWMI/SCVURPPP (lead party may change depending on quantification study identified)</p> <p>SCVURPPP</p>	<p>Include updated information provided by BPP and any other information which has become available as part of next Storm Water Permit</p>	<p>SCVURPPP Continuous Improvement Process and Annual Work Plans and/or SCBWMI Core Group/Subgroup work plan task</p> <p>SCVURPPP Work Plan (include as part of 5-year vision)</p>	<p>Evaluation of source loadings, potential control measure/pollution prevention effectiveness</p> <p>Effectiveness to indicate future copper impairment changes is unknown</p>

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		<p>loadings (update copper pie charts contained in MCM based on data from B-6 and B-16)</p> <p>3-Collect data and prepare annual reports on the following potential indicators</p> <ul style="list-style-type: none"> • Copper content in new auto brake pads • Total population in basin • Auto/truck vehicle traveled in basin • Copper sulfate (e.g. algaecide, pesticide, industrial; chemicals) sales in basin (aggregate basis-scaled to basin level estimate) • Copper content in macoma tissue at San Point (Palo Alto) • Reproductivity index for macoma at Sand Point • Benthic community assemblage at Sand Point 	<p>City of Palo Alto</p>	<p>Application Cycle (6 months ahead of application date)</p> <p>February POTW Annual SMR (start with February 2001 report)</p>	<p>POTW permit amendment</p>	

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		4-Prepare issue paper on feasibility of potential field investigation to monitor long-term trends between copper from brakepads and concentration in water.	RWQCB/SCVURPPP	FY 01-02		
CB-5 (15) (Trish priority –High)	-----/AUTO-1, 2 & 3	<p><i>Measures to support Brake Pad Partnership activities.</i> These shall include providing appropriate level of local support for agreed upon Brake Pad Partnership activities.</p> <p>1-Review/assess/provide input on BMC/BPP brakepad wear debris research & brakepad content data.</p> <p>2-Ensure that other local state</p>	<p>1-SCVURPPP currently tracking with funds designated in FY 99-00 & FY 00-01 Work Plans; funding June 16, 2000 BPP conference</p> <p>2-BASMAA & SWQTF involvement on BPP</p>	<p>SCVURPPP participation in BPP funded FY 99-00 SCVURPPP FY 99-00 funding of BPP conference SCVURPPP participation in BPP funded for FY 00-01</p> <p>SCVURPPP request BASMAA and SWQTF</p>	<p>1-SCVURPPP Continuous Improvement Process and Annual Work Plans(will utilize conference results to lay out potential future direction/needs)</p> <p>BASMAA Task of Regional Benefit (SCVURPPP recommend BASMAA consider funding TRB to support Regional involvement with BPP including investigation of fate and transport)</p>	Brake pad wear debris is a source

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		and federal players are involved appropriate on brakepads issue as it is a widespread urban concern. 3-Assist in making research data that are in the public domain accessible	may be needed as a Task of Regional Benefit 3- WMI data management system	participation FY00-01 SCVURPPP incorporate initial efforts into FY00-01 Work Plan	2- BASMAA Task of Regional Benefit (SCVURPPP recommend BASMAA & SWQTF consider funding to support State and Regional involvement with BPP including investigation of fate and transport) SCVURPPP via data management efforts and in conjunction with WMI efforts incorporate BPP and other related and readiably available into metadata database	
CB-6 (17) (Trish priority –High)	C-31/AIR-1 and AIR-2	<i>Measures to reduce traffic congestion</i> Review appropriateness of transportation control measures, prioritize reasonable measures and identify potential efforts for further development as part of Phase I and implementation as part of Phase II	SCBWMI (SCVURPPP take lead on preparing short-term issue paper as part of LUS that begins to investigate the role of storm water management agencies in regional congestion management planning and implementation)	Draft Issue paper by March 1, 2001	CORE GROUP short-term issues (SCVURPPP to consider possible early measures as part of developing FY 01-02 Work Plan)	Vehicles; unknown effectiveness

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CB-7 (17.27)	-----	<p><i>Measures to reduce traffic congestion</i> Establish transportation/impervious surface “forum”</p> <ul style="list-style-type: none"> Consider results of VMT and imperviousness load estimates and control effectiveness evaluation; identify potential control efforts for further development as part of Phase I and implementation as part of Phase II 	SCBWMI (incorporate as part of short-term issue paper on B-6)	See B-6 above	CORE GROUP short-term issue	Vehicles; unknown effectiveness
CB-8 (18 and 25 ⁵)	C-16, C-19 & C-31	<p><i>Measures to classify and assess watersheds.</i> These shall include assisting the SCBWMI in its continuing efforts to implement watershed classification and assessment efforts and to improve institutional arrangements for watershed protection. These efforts shall include:</p> <ul style="list-style-type: none"> Ensuring that watershed protection is considered 	SCBWMI (with assistance from the SCVURPPP and Co-permittees) Issue being addressed as part of SCVURPPP permit, see Table 3 permit issue)	Ongoing	SCVURPPP Continuous Improvement Process and Annual Work Plans and/or SCBWMI Core Group/Subgroup work plan task	NA (WMI efforts have resulted in moving issue beyond CONCUR findings)

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		in all applicable elements of Dischargers' General Plans land use, circulation, open space, transportation, and conservation, and consistency requirements; and seek appropriate changes in state General Plan Guidelines; and <ul style="list-style-type: none"> • Ensuring that watershed protection is considered in the California Environmental Quality Act process. • Continue to implement watershed classification and assessment efforts of SCBWMI. 				
CB-9 (20)	-----	<i>Measures to track corrosion control opportunities.</i> These shall include: <ul style="list-style-type: none"> • Continue educational outreach, within the City of Palo Alto, to plumbers and designers to reduce corrosion of copper pipes 	City of Palo Alto Environmental Compliance Unit (track and report developments to the SCBWMI)	Ongoing (start reporting as part of 2000 Annual Report)	POTW permit Reporting conducted as part of annual Pretreatment Program report.	Corrosion related copper; limited effectiveness

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		via better design and installation <ul style="list-style-type: none"> Track developments in (a) alternatives to copper piping (b) corrosion inhibitors, and (c) other methods of reducing copper corrosion 				
CB-10 (22)	C-6 & C-21	<i>Measures associated with utilizing the Sediment Characteristics and Contamination Environmental Indicator. These shall include utilizing results of SEIDP⁶ Indicator #5 (Sediment Characteristics and Contamination) to investigate development of an environmental indicator and investigate the linkage with SFEI sources and loading work effort.</i>	SCVURPPP & Co-permittees (being addressed as part of SCVURPPP permit, see Table 3)	SCVURPPP FY 01-02 Work Plan and 5-Year Monitoring Plan	SCVURPPP & Co-permittees as part of Permit Annual Work Plan and Annual Report	SEIDP Indicator #5 examining relationship between sediment quality and urbanization; unknown effectiveness
CB-11	C-29	<i>Measures to improve street sweeping controls and storm water system operation and maintenance controls to reduce copper in stormwater</i>	SCVURPPP (being addressed as part of SCVURPPP permit, see Table 3)		Consider need for improvements as part of SCVURPPP Continuous Improvement Process	Additional effectiveness uncertain; evaluation of cost-benefit

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		<i>discharges.</i> These shall include consideration of need for improvements to existing street sweeping controls and storm water system operation and maintenance controls and standard operating procedures for disposal of collected materials. (Key emphasis is to develop SOP for disposal of collected materials)				and cost-effectiveness of additional controls necessary
CB-12	-----	<i>Measures to control copper discharges from pools and spas.</i> These shall include maintaining existing education and outreach programs for pools and spas.	SCVURPPP & Co-permittees	Ongoing	SCVURPPP & Co-permittees implementation via URMP Performance Standards and modification via Continuous Improvement Process Ongoing Pool Magnet Project (see SCVURPPP FY 99-00 Work Plan)	Copper from water supply and algaecide use, probably extremely small load; effectiveness of BMPs good.
CB-15	C-6 & C-21	<i>Measures to evaluate effectiveness of Performance Standards and identify cost-effective modifications to reduce discharges of copper.</i> These shall include utilizing results of SEIDP to evaluate effectiveness of related	SCVURPPP & Co-permittees (being addressed as part of SCVURPPP permit, see Table 3)	SCVURPPP FY 01-02 Work Plan and 5-Year Monitoring Plan	SCVURPPP & Co-permittees Continuous Improvement Process	NA (Potential Environmental indicator(s))

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		SCVURPPP Performance Standards and identify cost-effective modifications				
CB-16	-----	<i>Measures to establish an environmental clearinghouse.</i> These shall include assisting the SCBWMI in establishing an information clearinghouse and tracking and disseminating new scientific research on copper toxicity, loadings, fate and transport, and impairment of aquatic ecosystems	SCBWMI –CORE Group (assistance via SCVURPPP)	Ongoing –Annual	Implement through watershed measures element of SCVURPPP Permit and SCBWMI Long-term Data Management Plan (connected with resources for B-5.3) Reporting include as part of SCVURPPP Annual Report for FY 00-01	NA (Potential education/outreach and communication mechanism)
CB-17 (Trish priority –High for Photo, Med. For sed., and low for loading)	-----	<i>Measures to reduce uncertainty associated with the Lower South San Francisco Bay Impairment Decision.</i> These shall include assisting the SCBWMI in tracking and encouraging the investigation of several important topics that influence uncertainty with Lower South Bay Impairment Decision ⁷ <ul style="list-style-type: none"> • Phytoplankton toxicity and movement (IAR Section 5.3.1) 	SCBWMI – Core Group (assistance via POTW and SCVURPPP and Co-permittees)		Track and encourage RMP, NOAA, USGS, etc.	NA (Special Studies)

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		<ul style="list-style-type: none"> • Sediment cycling • Loading uncertainty Encourage incorporation of appropriate bioassessment tools into ongoing monitoring programs to track presence of copper-sensitive taxa in LSB. Prepare issue paper on feasibility and cost of addressing phytoplankton toxicity questions	RWQCB (Tom Mumley)			
CB-18	-----	<i>Measures to investigate important factors that influence copper fate and transport.</i> These shall include assisting the SCBWMI in tracking and encouraging the investigation of important Factors that Influence Copper and Fate (Potential Reduction in Uncertainty is Moderate to High) ⁷ <ul style="list-style-type: none"> • Investigate flushing time estimates for different wet weather conditions • Investigate location of 	SCBWMI – Core Group (assistance via POTW and SCVURPPP and Co-permittees)		Track and encourage RMP, NOAA, USGS, etc.	NA (Special Studies)

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		northern boundary condition <ul style="list-style-type: none"> • Determine Cu-L1 and L2 complex concentrations • Investigate algal uptake/toxicity with competing metals 				
CB-20 (Trish priority –High)	-----	<i>Measures to revise the Copper Conceptual Model Report findings.</i> These shall include assisting the SCBWMI and the POTWs that discharge to Lower South SF Bay in revising the Copper Conceptual Model Report uncertainty table based on newly-available information and producing a status report. In particular, these activities will include revising the conceptual model uncertainty table based on newly-available information as part of the Dischargers' and POTWs' next NPDES permit applications.	SCBWMI (with assistance from POTWs and SCVURPPP & Co-permittees)	Permit Application	CORE GROUP short-term issue Update as part of NPDES Permit application process Possible linkage and assistance from North Bay effort as well as RMP and RWQCB TMDL efforts	Unknown
CB-21 (26 & 31)	C-32	<i>Measures to discourage architectural use of copper.</i>		FY 00-01 Work Plan	CORE GROUP short-term issues (use SCVURPPP	Ornamental copper (roofs,

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		These shall include assistance to the SCBWMI in the following areas: 1-SCVURPPP & Co-permittees evaluate feasibility of discouraging architectural use of copper & explore feasibility of related policy 2-Promote Green Building principles and identify measures to investigate as part of Phase I	Palo Alto (Lead) SCBWMI (with assistance from the SCVURPPP and Co-permittees)	City of San Jose – Explore feasibility of Policy as part of FY 02-03 Work Plan	Continuous Improvement Process for agreed upon assistance) SCVURPPP & Co-permittees Continuous Improvement Process	gutters); probably very small (<1%) of load; effectiveness of BMPs probably good

- 1 Annual Reports of NPDES permitted agencies (POTWs and SCVURPPP) will contain a summary of the status of all CAP items.
- 2 Copper dialogue control measures numbered 1,2,3,4,5,7,8,9,10,11,14,15,21,23, 24, 26,28,29,31,32,33 are currently being conducted by the SCVURPPP & Co-permittees as defined within the URMP. The SCVURPPP & Co-permittees will continue to implement the controls as defined within the URMP and modify, as appropriate, through the SCVURPPP & Co-permittees Continuous Improvement process. (See Appendix 2 of the CAP for a summary of the current Program activities relative to dialogue measures.
- 3 Continuous Improvement activities identified by the Urban Runoff Permit Re-issuance Work Group as part of the SCVURPPP permit re-issuance are contained in Table 3 “Urban Runoff Permit Re-issuance Work Group --Box 3: Summary of Continuous Improvement Items”(dated June 23, 2000).
- 4 References refer to measures identified as part of the SCVURPPP Metals Control Measures Plan (MCMP, prepared by WWC/EOA, 1997). MCMP measures are part of the 1997 SCVURPPP Urban Runoff Management Plan (URMP).
- 5 These measures have largely been replaced by WMI activities. Specific implementation actions are planned for inclusion in the Watershed Alternatives report & Watershed Action Plan. The Watershed Assessment Subgroup of the WMI considered the CONCUR paper as input in drafting the Watershed Alternatives paper.
- 6 The Stormwater Environmental Indicators Demonstration Project (SEIDP) is part of USEPA’s Environmental Indicators/Measures of success project. The SEIDP is the third phase of EPA’s program that focuses on local demonstration projects and the testing of indicators in the Walsh Ave. catchment, water quality indicators, programmatic indicators, social indicators, and site indicators are being evaluated to gauge Program implementation. Twenty different indicators are under review.
- 7 See Table D “Task 1: Conceptual Model Report for Copper and Nickel in Lower South San Francisco Bay” final report, December 1999 Contained in Appendix 4-2.