

**2003-2004 Annual Review of Municipal Stormwater Programs
with Focus on Monitoring
San Mateo Countywide Stormwater Pollution Prevention Program
Habte Kifle**

The San Mateo Countywide Stormwater Pollution Prevention Program (the Program) consists of 21 permittees (i.e., twenty cities and the County). The Program submitted the annual report for fiscal year 2003/2004 in September 2004. Board staff completed review of the annual report in January 2005. Based on our review of the annual report, the Program has implemented performance standards for its core program components, although some municipalities still need to improve their performance in certain areas to come into full compliance. The adequacy of each municipality's overall stormwater program varies between program components, especially in the components of municipal government maintenance and illicit discharge control activities. Overall, municipalities are doing well with public information and participation. Work required under the new and redevelopment component, as well as watershed assessment and monitoring, is progressing in general with much more work anticipated in the coming year(s). Board staff issued Notices of Violation to three municipalities for failing to submit a technical report as required by the permit and issued one for not responding to an illicit discharge. The Program has continued to actively participate in several region-wide collaborative pollution control efforts.

The Program components include: watershed assessment and monitoring, municipal government maintenance activities and integrated pest management, commercial/ industrial and illicit discharge controls, public information and participation, and new development and construction control activities.

- I. **Watershed Assessment and Monitoring:** The main goal of this component is to evaluate the effectiveness of implemented performance standards and best management practices for program components, and, hence, to protect stormwater quality in San Mateo County watersheds.

During the reporting period, the Program implemented the watershed assessment and monitoring plan consistent with permit requirements as amended in July 2004. As explained below, the Program conducted specific bioassessment and water quality monitoring in four watersheds.

1. **San Pedro Creek Watershed:** The Program completed a two-year (May 2002 through February 2004) monitoring program of bioassessment and water quality testing in the San Pedro Creek watershed in Pacifica. The purpose of this monitoring study was to investigate urban runoff impacts to urban creeks aquatic habitat and water quality.

The monitoring activities included benthic macro-invertebrate species as indicator of water and habitat quality and grab water samples for toxicity in three episodes from three different reaches of San Pedro Creek. Those samples were collected in April 2003, August 2003, and February 2004. The water samples were tested for aquatic toxicity using a three-species bioassay, including *Ceriodaphnia Dubia* (water flea), *Pimephales Promelas* (fathead minnow), and *Selenastrum Capricornutum* (green alga). A few samples showed inhibition of *Ceriodaphnia* reproduction. One sample showed growth reduction of *Selenastrum*, and another sample revealed inhibition of *Pimephales* survival.

In addition, the water samples were also tested for physical and chemical parameters, such as pH, dissolved oxygen, temperature and conductivity, and organophosphate pesticides, including diazinon. As shown in the table below, the physical parameters results were within the allowable levels for cold-water habitat consistent with Board's Basin Plan. None of the tested organophosphates were detected at detection limits in the water samples. As a result of the Program's public outreach activities, the San Pedro Watershed Coalition and other local volunteers participated in the fieldwork effort of the Program.

Organophosphate Pesticides and Physical Parameter Monitoring Results							
Sampling Date	Sample Location	Organo-Phosphate Pesticides	pH	Temperature (°C)	Conductivity (µS/cm)	Dissolved Oxygen	Velocity (ft/sec)
4/27/03	PB	ND	8.27	11.0	268.9	10.43	1.26
	MF	ND	7.94	10.2	264.2	10.78	0.45
	NF	ND	7.92	14.1	488	10.09	0.38
8/19/03	PB	ND	8.06	15.8	336.4	8.85	0.42
	MF	ND	8.06	15.1	303.6	8.80	0.03
	NF	ND	7.94	16.8	626	7.08	0.07
2/17/04	PB	ND	7.80	12.9	323.7	10.04	0.82
	MF	ND	8.03	12.0	236	10.04	0.80
	NF	ND	7.82	13.8	475	9.22	1.18

Key: PB = Peralta Bridge; MF = Middle Fork; NF = North Fork; ND = Not Detected;
**The detection limit for all organophosphate pesticide analytes in all samples was 50 nanograms per liter, except diazinon (10 nanograms per liter) and azinphos methyl (100 nanograms per liter).*

2. **San Mateo Creek Watershed:** The Program conducted bioassessment and water quality testing in the San Mateo Creek watershed. In February 2004, the Program collected water samples from four locations along San Mateo Creek. The water samples were tested for aquatic toxicity, using a three-species bioassay, and organophosphate pesticides. With the exception of minor inhibition of Ceriodaphnia reproduction in one sample, no toxicity was reported. None of the tested organophosphates were also detected in any of the water samples.

In April 2004, the Program also collected benthic macro-invertebrate bioassessment data in the San Mateo Creek watershed. The results were not available during this reporting period, but will be included in the next annual report.

3. **Cordilleras Creek Watershed:** The Program compiled existing available information related to the creek's watershed. In fiscal year 2004/2005, the Program will collect three episodes of water quality sampling (summer, wet season, and spring) from three locations consistent with the requirements of the July 2004 permit amendment. In addition, the Program has plans to conduct rapid bioassessments and physical habitat assessment using acceptable protocols, the California Stream Bioassessment Procedures.
4. **Colma Creek Watershed:** The Program conducted a case study in storm drain sediments from Colma Creek and documented it in May 2004. The intent of the case study was to analyze PCBs in creek sediments, identify potential sources, and implement pollutant source control measures where deemed necessary. The case study was conducted as a follow up to a previous (September 2001) regional field survey where one sample revealed up to 16,810 microgram/kg of total PCB concentrations. As showed in the table below, the analytical results of the 2003 case study revealed total PCB concentrations ranging from 2 to 53 microgram/kg, much lower than the 2001

field survey data. Mercury and total organic hydrocarbons were also analyzed in 2001 and 2003. Although the elevated PCBs and mercury concentrations at the Colma Creek culvert exit were not recurring, the Program is coordinating with local municipalities to identify potential PCB sources or historical disposal sites for further investigation.

Colma Creek Sediment Chemical Analysis Results						
Sample Number	Sample Location	Date Collected	Percent Fines	TOC µg/Kg	Total PCBs µg/Kg	Total Mercury µg/Kg
SMC-024	Colma Cr. at culvert exit	9/6/01	60.03	13.1	16,810	1,310
SMC-024	Colma Cr. at culvert exit	10/16/03	2.19	0.63	2.0	16.1
SMC-024FR	Colma Cr. at culvert exit	10/16/03	2.76	0.78	2.8	13.9
SMC-048	Collins Ave. manholes	10/16/03	9.35	1.33	3.3	15.4
SMC-049	Colma Cr. upstream of sample SMC-024	10/16/03	30.57	5.94	53	242
Benchmarks					8.6 ¹	200 ²
Key: FR = Field Replicate; TOC = Total Organic Carbon; µg/Kg = micrograms per Kilogram (dry weight basis)						

The Program will further continue its watershed assessment and monitoring efforts consistent with the monitoring plans that the Board adopted in July 2004. It has continued to actively participate in several region-wide cooperative pollution prevention efforts, including BASMAA, RMP, Clean Estuary Partnership, and other regional municipal stormwater programs.

II. Municipal Government Maintenance Activities and Integrated Pesticide Management (IPM):

All permittees are required to implement performance standards for this component to optimize pollutant removal during their routine maintenance activities, such as street sweeping, maintenance of corporate yards, trash control, and application of pesticides in parks and recreational facilities.

During the reporting period, all municipalities performed pollutant source reduction activities, including street sweeping, storm drain inlets inspection and cleaning, litter control and leaf removal, and managed pesticide application. There were only three municipalities (Menlo Park, San Carlos, and City of San Mateo) who did not fully inspect their storm drain inlets or report their inspection results. For Menlo Park, this is its third year in a row not to fully inspect its storm drain inlets. Five municipalities, including Hillsborough, East Palo Alto, Pacifica, San Carlos, and South San Francisco, neither reported nor performed leaf control activities within their jurisdictional area. For Hillsborough, Pacifica, and South San Francisco, this is their third year in a row not to perform leaf control activities. These cities did not provide a justification for why this performance standard was not met. Three municipalities (East Palo Alto, Half Moon Bay and Millbrae) did not confirm their adoption of integrated pest management policy or ordinance. A few municipalities also need to improve their attendance to subcommittee meetings to keep up with program updates. Board staff plans to send separate follow up letters to those with deficiencies to come into full compliance.

III. Commercial/Industrial and Illicit Discharge Controls: The purpose of this program component is to effectively prohibit illicit discharges, protect non-stormwater discharges to municipal storm drain

¹ Ambient concentration of PCB in Bay sediments based on less than 40% fines

² Suspended Sediment Target in Bay sediments from the Basin Plan

systems, and control discharge of pollutants to stormwater runoff from commercial and industrial businesses.

During the reporting period, the permittees conducted inspection and provided education to 2,137 businesses. There were 253 violations noted and corrected during these inspections. Another 246 illicit discharges were also identified and subsequently eliminated during the reporting period. Most municipalities intensified their inspection and public outreach efforts and took appropriate enforcement actions to resolve identified violations locally. However, a few municipalities still need to improve their illicit discharge control efforts. Three municipalities, including Atherton, Foster City, and San Carlos neither reported nor provided an explanation to why they did not conduct illicit discharge control measures. Four other municipalities, namely Brisbane, East Palo Alto, Millbrae, and San Carlos, also did not extend their illicit discharge efforts to other stormwater conveyance systems, such as V-ditches and channels. Board staff will send separate follow up letter to bring those with deficiencies to full compliance.

Board staff issued a Notice of Violation to the City of Pacifica for not responding to an illicit discharge to San Pedro Creek.

- IV. Public Information and Participation:** The primary goals of this program component are to educate, inform, and involve the public in playing an integral role in reducing pollutant discharges to stormwater runoff and increase public awareness of stormwater pollution prevention and source control program activities.

The Program's public outreach activities were in compliance. Depending on its size, each municipality is required to conduct at least three public outreach activities in a given year. All of the Program's permittees exceeded this minimum requirement during the reporting period. The Program has routinely initiated technical advisory committee and program subcommittee meetings, provided annual workshops and training for core program components.

- V. New Development and Construction Controls:** The principal goal of this component is to minimize erosion, sediment, and other waste runoff from active construction sites and to implement effective permanent post-construction treatment measures consistent with New Development and Significant Redevelopment permit requirements.

All municipalities reported that they inspected active construction sites to ensure implementation of erosion and sediment control measures prior to the rainy season. During the reporting period, 83 active construction projects were reported in the whole county, where 63 of which were one acre or more. The Program continues to submit technical reports in compliance with new and redevelopment requirements. However, on February 24, 2005, Board staff issued Notices of Violation to Foster City, Half Moon Bay, and San Bruno for failing to submit a technical report on Site Design Review Standards and Guidance as required by the permit. Without the submittal and implementation of this technical report, the cities will not be able to revise and update their local policies and implement adequate measures to protect water quality by November 15, 2005. The Program is determined to comply with all new and redevelopment requirements, but there remain a few permittees who still need to improve to come into full compliance.

Effective February 15, 2005, all new and redevelopment sites that create one acre or more impervious surface (Group I) are required to incorporate permanent post-construction treatment measures to reduce pollutants from stormwater runoff to the maximum extent practicable.

On November 12, 2004, the Program submitted a draft Hydromodification Management Plan (HMP) as required. Board staff provided substantial comments on the draft HMP on January 25, 2005. The goal of the draft HMP was to propose where and how the HMP would be implemented and the specific technical support utilized to justify the selected option. Staff found that the draft HMP is too vague, lacks specificity, and adequate technical support. The draft HMP excludes many bayside creeks unprotected by using unacceptable decision criterion. The Program is required to submit a revised acceptable HMP by May 15, 2005, for Board approval.

Enforcement Actions: Board staff issued three Notices of Violation against three cities and is preparing one additional Notice of Violation. We issued Notices of Violation to Foster City, Half Moon Bay and San Bruno for their failure to submit a technical report on Site Design Review and Guidelines. We also issued a Notice of Violation to the City of Pacifica for its failure to respond to an illicit discharge to San Pedro Creek. The City failed to stop an unauthorized bank stabilization activity by a resident along a section of San Pedro Creek.

Conclusion: The Program implemented performance standards for all program components and generally is in compliance with its permit requirements. However, some individual permittees still need to improve their compliance status in certain program components as described above. On January 12, 2005, we provided our comments on the review of the annual report to all permittees to give them ample time to come to full compliance in the next reporting period. Board staff is in a process of developing a region-wide permit for all the major municipal stormwater programs to establish consistent compliance requirements. In the mean time, the Program should continue implementing the performance standards for all components consistent with the requirements of its permit and the Program's Stormwater Management Plan dated January 2004.