# C/CAG

**CITY/COUNTY ASSOCIATION OF GOVERNMENTS**
**OF SAN MATEO COUNTY**

*Atherton • Belmont • Brisbane • Burlingame • Colma • Daly City • East Palo Alto • Foster City • Half Moon Bay • Hillsborough • Menlo Park*
*Millbrae • Pacifica • Portola Valley • Redwood City • San Bruno • San Carlos • San Mateo • San Mateo County • South San Francisco • Woodside*

## TASK ORDER FORM

| | |
|---|---|
| **Date/Start Date:** | July 1, 2018 |
| **Consultant Name:** | EOA, Inc. |
| **Contract:** | Countywide Water Pollution Prevention Program Technical Support – On-Call Contracts |
| **Task Order No.:** | EOA-08 |
| **Task Order Name:** | Municipal Stormwater NPDES Permit Compliance Assistance |
| **Scope of Work:** | Water Year 2019 monitoring activities |
| **Deliverables:** | See attached scope of work |
| **Budgeted Cost:** | Per attached scope of work, not to exceed $390,000 for Fiscal Year 2018-19. **The additional $210,002 for work in Fiscal Year 2019-20 is subject to sufficient funds being included in C/CAG's approved 2019-20 budget. Consultant shall not proceed to perform any work in Fiscal Year 2019-20 under this Task Order without written direction from C/CAG staff and until and unless each of the above conditions has been satisfied.** |
| **Completion Date:** | March 31, 2020 |

*The parties indicated herein agree to execute this Task Order per the scope indicated above. No payment will be made for any work performed prior to the execution of this Task Order. Unless otherwise indicated, receipt of this executed Task Order is your Notice to Proceed with the work specified herein.*

| C/CAG | EOA, Inc. |
|---|---|
| Sandy Wong<br>Executive Director | Date |
| | Date |

# Municipal Stormwater NPDES Permit Compliance Assistance

# WY 2019 Water Quality Monitoring

## Scope of Work and Budget

**Prepared for the**
**San Mateo Countywide**
**Water Pollution Prevention Program**
**(a C/CAG program)**

SAN MATEO COUNTYWIDE
Water Pollution Prevention Program
Clean Water. Healthy Community.

**Prepared by EOA, Inc.**

**DRAFT June 5, 2018**

# INTRODUCTION

EOA, Inc. (EOA) prepared this scope-of-work and budget for the San Mateo Countywide Water Pollution Prevention Program (Countywide Program or SMCWPPP). SMCWPPP is a program of the City/County Association of Governments of San Mateo County (C/CAG). The scope and budget is for EOA to assist SMCWPPP to help its member agencies to comply with certain requirements found in the reissued municipal stormwater permit, NPDES Permit No. CAS612008, which is commonly referred to as the Municipal Regional Permit (MRP). The following sections describe EOA's tasks, budgets, and deliverables for Water Year 2019 (WY 2019) water quality monitoring and reporting activities. Exhibit A summarizes the tasks and budgets, including subtasks, estimated labor hours, and planning-level subcontractor and expense budgets. It should be noted that the actual distribution of hours and subcontractors/expenses within and among subtasks may vary. EOA will conduct all work on a time and materials basis in accordance with the Agreement for Services between EOA, Inc. and C/CAG dated August 13, 2015. The total budget will not be exceeded without C/CAG's authorization.

The total budget for WY 2019 water quality monitoring activities is $599,934. We understand that C/CAG will authorize expenditure during FY 2018/19 of $389,932 of this total budget and will likely authorize expenditure during FY 2019/20 of the remaining $210,002. The estimated FY 2018/19 budget includes about $85,000 in subcontractor and laboratory costs that will be contracted (i.e., committed to) in FY 2018/19 but not invoiced until FY 2019/20. This scope and budget is structured accordingly.

# TASK SM07 – WATER QUALITY MONITORING

In accordance with the MRP, water quality monitoring is conducted on a water year basis. Sampling is conducted each water year (October 1 through September 30) and reports presenting that water year's data are submitted to the Regional Water Board by the end of the following March. For example, the results of sampling during Water Year 2019 (i.e., October 1, 2018 – September 30, 2019, abbreviated as WY 2019) are documented in reports submitted by March 31, 2020. Because the typical municipal fiscal year (July 1 – June 30) and the water year are not aligned, field sampling and reporting associated with a particular water year are conducted during portions of two adjacent fiscal years.

This scope and budget is for all activities associated with WY 2019 water quality monitoring, including fieldwork, data Quality Assurance / Quality Control (QA/QC), and reporting. However, Subtasks SM07.01 (Regional Coordination), SM07.02 (Regional Monitoring Program Participation), and SM07.04 (Stressor/Source Identification Projects, referred to as SSID Projects) are ongoing activities that are not tied to a particular water year. The budgets for Subtasks SM07.01 and SM07.02 are generally based on an estimated amount of EOA staff time needed each month or for each of a certain number of periodic meetings, whereas the budget for Subtask SM07.04 is based on completing several tasks during the upcoming fiscal year. For these three subtasks, this scope and budget covers the 12-month FY 2018/19 period of time (i.e., July 1, 2018 – June 30, 2019).

The structure of this scope and budget assumes that, similar to WY 2018, C/CAG will issue an annual WY 2019 water quality monitoring task order that is effective July 1 and covers all monitoring and reporting activities associated with WY 2019 and FY 2018/19 (i.e., the WY 2019 task order would be effective July 1, 2018 and cover activities through March 31, 2020, the date that the final WY 2019 reporting is due, and thus cover a 1.75 year time period).

Under this task EOA will continue to work closely with the San Francisco Estuary Institute (SFEI), which manages the San Francisco Estuary Regional Monitoring Program (RMP). EOA staff participates on the RMP Steering Committee, Technical Review Committee (TRC) and selected RMP workgroups and strategy teams. This participation helps to ensure that RMP monitoring effectively addresses the management questions of interest to SMCWPPP and all of the BASMAA regional partners, and assists with associated permit compliance.

Bonnie de Berry will continue as the water quality monitoring task leader. Similar to recent years, Kinnetic Laboratories, Inc. (KLI) and Balance Hydrologics will provide technical fieldwork support. Analytical laboratories will include Caltest, BioAssessment Services, EcoAnalysts, Pacific EcoRisk, Alpha Analytical, and ALS, or qualified substitutes.

## SUBTASK SM07.01: REGIONAL COORDINATION

Regional collaboration has been an essential part of SMCWPPP's water quality monitoring approach, is encouraged by MRP provision C.8.a.i, and creates opportunities for cost sharing, information exchange, and more effective planning. EOA will continue to assist SMCWPPP to collaborate and coordinate with other Bay Area municipal stormwater management agencies on all water quality monitoring tasks. This will include representing SMCWPPP on BASMAA's Monitoring and Pollutants of Concern Committee (MPC) and the Regional Monitoring Coalition (RMC) Workgroup. During FY 2018/19 these groups will continue to assist with interpretation of MRP monitoring requirements and help provide oversight of several BASMAA regional projects that address MRP requirements, including improvements to the regional database, the five-year regional stream conditions report, recommendations for redesign of the bioassessment monitoring program, the regional BMP effectiveness monitoring study, and regional monitoring of infrastructure for PCBs in caulks/sealants[1]. This subtask will also include regional planning and coordination efforts in preparation for the Integrated Monitoring Report that must be submitted by March 31 of the fifth year of the permit (i.e. March 31, 2020) in lieu of the Urban Creeks Monitoring Report. This subtask may also include occasionally attending relevant policy meetings (e.g., biointegrity & biostimulatory objectives development, bacteria objectives, wetland/riparian policy, Caltrans workplans) and/or commenting on related documents. It is assumed that the BASMAA MPC Committee will continue to meet monthly and that the RMC Workgroup will continue to meet quarterly.

In accordance with Provision C.8.b, all monitoring data must be State of California Surface Water Ambient Monitoring Program (SWAMP) comparable, data quality must be consistent with the SWAMP Quality Assurance Project Plan (QAPP), and data collection and analytical methods must follow the SWAMP Standard Operating Procedures (SOPs). These requirements are included in the BASMAA QAPP and SOPs that were developed and maintained during the previous permit term and updated in FY 2015/16 to capture new MPR 2.0 requirements for creek status and pesticides and toxicity monitoring. It is assumed that BASMAA RMC participants will continue to work together to maintain these documents throughout this permit term. EOA will assist with ongoing updates on behalf of SMCWPPP and its member agencies.

BASMAA Regional Project Task RMC 3c (Creek Status Monitoring Coordination) assists all RMC participants in effective collaboration and consistent implementation of regional monitoring projects. Task RMC 3c is not funded by SMCWPPP or SCVURPPP. Instead, EOA (on behalf of SMCWPPP and

[1] The regional PCBs in caulk/sealants study is required by Provision C.12.e but will also be used towards compliance with Provision C.8.f (Pollutants of Concern Monitoring).

SCVURPPP) provides in-kind services at a comparable level (about $14,000 annually). In FY 2018/19, EOA will continue to provide these services on behalf of SMCWPPP at a population-adjusted level of $4,675 (approximately one-third of $14,000; the SCVURPPP will provide the other two-thirds). These services include: technical database assistance to RMC programs, annual compilation of RMC program creek status monitoring data into one database, serving as the link between the RMC and the California Environmental Data Exchange Network (CEDEN) regional data node (i.e., SFEI), and management of the creek status probabilistic monitoring design and site evaluation process.

**Deliverables:**

- Participation in 12 monthly meetings of BASMAA's MPC Committee and four quarterly meetings of BASMAA's RMC Workgroup on behalf of SMCWPPP and its member agencies.
- Telephone and email communications and comments on pertinent regional documents and participation in related meetings.
- In- kind services to assist with BASMAA Regional Project Task RMC 3c (Creek Status Monitoring Coordination): technical database assistance to RMC programs, annual compilation of RMC program Creek Status data into one database, serving as the link between the RMC and the CEDEN regional data node (i.e., SFEI), and management of the creek status probabilistic monitoring design and site evaluation process.

Note: The above deliverables are for the 12-month FY 2018/19 time period (i.e., July 1, 2018 – June 30, 2019).

**Budget: $31,004**

## SUBTASK SM07.02: REGIONAL MONITORING PROGRAM PARTICIPATION

Provision C.8.c requires that Permittees "participate in implementing an Estuary receiving water monitoring program, at a minimum equivalent to the San Francisco Estuary Regional Monitoring Program by contributing their fair-share financially on an annual basis." The budget for this subtask does not include financial contributions to the RMP, but does include participation in various RMP Workgroups and Strategy Teams to provide input and leadership to the RMP and identify opportunities to direct RMP funds and monitoring activities towards meeting both short- and long-term MRP requirements.

On behalf of SMCWPPP and its member agencies, EOA will participate in the RMP's Sources, Pathways, and Loadings Workgroup (SPLWG) which ensures that RMP projects and products are relevant and help to answer management questions in the context of TMDLs and attainment of water quality standards. The SPLWG meets approximately twice yearly. EOA will also participate in Strategy Teams that inform the SPLWG such as the Small Tributary Loading Strategy Team (STLS) that meets monthly. The STLS Long-Term Trends Strategy Team and Advanced Data Analysis Team meet as needed. STLS participation includes selection of stations where monitoring may take place and review of monitoring plans. EOA will ensure that STLS monitoring will maximize compliance with and address management questions related to Provisions C.8 (Pollutants of Concern Monitoring) and C.11/12 (Mercury/PCBs TMDLs). In recent years this has included assisting with the selection, mapping, and logistical facilitation of wet weather monitoring stations in San Mateo County where pollutants of concern (e.g., PCBs and mercury) data are collected by the RMP. The data are being used to identify watersheds where PCBs and mercury control

actions are likely to have the highest load reduction benefit. In future years, monitoring may shift to addressing management questions related to long-term trends.

As needed during FY 2018/19, EOA will also participate in the RMP's PCBs Strategy Team, which integrates across RMP Workgroup areas and oversees special studies specifically designed to address PCBs in the San Francisco Bay (rather than tributaries to the Bay). In 2015 the PCBs Strategy Team began implementation of a multi-year study plan that includes collection of sediments from Bay margins and modeling (hydrologic and water quality) of high priority Bay margin areas.

This subtask includes email and telephone communications and review of and comment on documents and RMP work products (e.g., Long-Term Trends Framework, Advanced Data Analysis report, monitoring reports). In addition, EOA will represent SMCWPPP and its member agencies or the BASMAA RMC in other RMP Workgroups and Strategy Teams as needed (e.g., RMP's Nutrient Technical Workgroup or Emerging Contaminants Workgroup).

**Deliverables:**

- Participation in two meetings of the RMP's SPLWG Workgroup, 12 monthly meetings of the STLS Team, and up to six additional meetings (e.g., STLS Long-Term Trends Strategy Team, STLS Advanced Data Analysis Team, and the PCBs Strategy Team) on behalf of SMCWPPP and its member agencies. It is assumed that approximately half of these meetings will be attended via conference call.
- Maps and tables describing recommended STLS sampling stations.
- Comments on pertinent RMP-related documents and work products.
- Telephone and email communications.

Note: The above deliverables are for the 12-month FY 2018/19 time period (i.e., July 1, 2018 – June 30, 2019).

**Budget: $22,924**

## SUBTASK SM07.03: CREEK STATUS MONITORING

During WY 2019, EOA will continue to perform all aspects of the countywide creek status monitoring program, in accordance with MRP Provision C.8.d. The primary objectives of creek status monitoring are to gather information on whether numeric and narrative water quality objectives are being met in creeks and whether creek conditions are supportive of designated beneficial uses (e.g., aquatic habitat, recreational uses). Creek status monitoring will continue to be conducted in accordance with the probabilistic and targeted designs that were developed by the BASMAA RMC during the previous permit term and are now specified in the current MRP.

**Probabilistic (Random) Design**

The probabilistic design involves use of a master list[2] to randomly identify sample stations (i.e., the sample draw) for bioassessment monitoring. The random nature of the sampling design allows for

[2] EOA has housed and managed the master list since it was developed in 2009 and will continue to do so throughout the current permit term.

statistically significant evaluation of ambient creek conditions within San Mateo County, region-wide, and state-wide. Potential probabilistic stations from the "sample draw" are evaluated using a defined process that addresses site permissions, logistical considerations, and sampleability as described in the BASMAA RMC Creek Status and Long-Term Trends Monitoring Plan. SMCWPPP is required to conduct bioassessment monitoring at ten sites per year[3]. As in recent years, in WY 2019 EOA will conduct site evaluations to develop a list of ten sampleable sites. Site evaluations will include development of maps, communications with creek-side landowners to obtain permissions, acquisition of any permits needed from agencies, and site reconnaissance visits in the fall to determine access and safety and to check for obstructions (e.g., culverts, grade controls) that would affect bioassessment results. Site evaluation results from probabilistic sites are tabulated each year and added to a regional database. The data will eventually be evaluated to determine the statistical confidence level in the full probabilistic dataset.

EOA will collect the types of screening-level biological, physical, and chemical water quality data required by Provision C.8.d.i at the ten bioassessment sites. Field activities will include biological community sampling (benthic macroinvertebrate and algae bioassessments), characterization of physical habitat, sonde measurements of general water quality parameters, and collection of water samples for laboratory analysis of nutrients. All sampling will be conducted by EOA's SWAMP-trained field crew under our Scientific Collection Permit from the California Department of Fish and Wildlife. Bioassessments will be conducted during the index period (April 15 – June 30) according to the most recent version of SWAMP SOPs for Bioassessment. Based on our past experience, the budget assumes that EOA's four-person field crew will complete an average of 1.5 bioassessments per day. EOA's field crew will conduct an annual pre-season field practice session. Members of the field crew will also receive training in first aid and safety procedures.

Benthic macroinvertebrate samples will be sent to BioAssessment Services in Folsom, CA for SAFIT Level 1 analysis. Algae samples will be sent to EcoAnalysts in Moscow, ID for species-level identification of soft-bodied algae and diatom algae. Nutrient samples will be sent to Caltest in Napa, CA for chemical analysis. EOA has worked with these laboratories for many years. They report data in a SWAMP-comparable format and with quality controls required by the CEDEN in accordance with MRP Provision C.8.h.ii.

Chlorine monitoring required by Provision C.8.d.ii will be conducted with a field spectrometer at the bioassessment sites concurrent with bioassessment monitoring.

**Targeted Design**

The targeted design focuses on continuous water quality monitoring using multi-parameter probe measurements (i.e., pH, temperature, specific conductance, and dissolved oxygen) and temperature loggers, as well as grab samples for pathogen indicators. Targeted monitoring can be conducted along any creek where gathering new data would be valuable. The focus will be on collecting general water quality and temperature data in creeks that currently support or historically supported cold water fisheries. Pathogen indicator sampling will occur in creeks where recreational uses are plausible or where the data have multiple uses (e.g., TMDLs, Stressor/Source Identification studies). During the site selection process maps are developed, permissions are obtained (if needed), and a site reconnaissance visit is conducted to confirm safe access. Continuous monitoring with the multi-parameter probes must

[3] The MRP gives SMCWPPP the option of selecting two of the ten required bioassessment sites on a targeted basis to evaluate temporal trends, creek response to management/restoration actions, or address other impacts to aquatic life condition.

be conducted at two stations per year during two two-week deployments (spring and late-summer). Temperature logging must be conducted at four stations per year from April through September (five loggers are typically deployed to mitigate for potential loss of these small devices). Pathogen indicator sampling must be conducted at five stations per year during the dry season. Pathogen indicator samples will be delivered to Alpha Analytical Laboratory in Dublin, CA (or equivalently-certified microbiology lab) for *E. coli* and enterococcus enumeration.

**Data Quality Objectives**

In accordance with Provision C.8.b, all probabilistic and targeted monitoring data will be SWAMP comparable, consistent with the SWAMP and BASMAA Quality Assurance Project Plans (QAPPs), and data collection and analytical methods will follow the SWAMP and BASMAA Standard Operating Procedures (SOPs). EOA keeps abreast of SWAMP procedures which are continually reviewed and updated at the state level. We will confirm that all participating analytical laboratories are using the most current requirements.

Quality assurance and quality control (QA/QC) review (i.e., data validation) of Creek Status Monitoring data will be conducted according to the BASMAA QAPP which specifies quantitative and qualitative data quality objectives (DQOs) for accuracy, precision, and completeness. Data not meeting the defined DQOs will be corrected if possible and flagged as necessary. The data validation process takes several months to complete and typically occurs between July and December as field data sheets are entered, laboratory reports are received, and the online SWAMP and CEDEN data checkers are accessed. The resulting validated spreadsheets tabulating all creek status monitoring data will be uploaded to the BASMAA Regional Monitoring Database which is currently managed and maintained by EOA.

WY 2019 Creek Status Monitoring results will be described within the context of Creek Status Monitoring data collected since WY 2014 in the Integrated Monitoring Report (IMR) due March 31, 2020. See the below description of Subtask SM07.07 (Reporting) for more information.

**Deliverables:**

- WY 2019 site evaluation data associated with selecting probabilistic and targeted monitoring sites.
- WY 2019 participation in pre-season bioassessment training session, bioassessment monitoring at ten sites, chlorine monitoring, and completed bioassessment monitoring field forms.
- WY 2019 spring and late-summer deployment (each for two weeks) and retrieval of continuous monitoring sondes at two sites.
- WY 2019 deployment, mid-season calibration check, and retrieval of five temperature loggers.
- WY 2019 collection of five pathogen indicator samples.
- WY 2019 creek status monitoring data that have undergone QA/QC review for all parameters required by Provision C.8.d.
- Populated database with all WY 2019 data.

**Budget: $224,544**

## SUBTASK SM07.04: STRESSOR/SOURCE IDENTIFICATION PROJECTS

Provision C.8.e requires that Permittees develop and maintain a list of candidate Stressor/Source Identification (SSID) studies based on creek status and pesticides and toxicity monitoring data that exceed "triggers" identified in the MRP. SSID Projects must follow the stepwise process described in Provision C.8.e. As a first step, a work plan describing the problem and how it will be investigated is developed. Step two includes implementation of the work plan which may include field (e.g., sample collection) and desktop (e.g., mapping, modeling) studies. Step three includes follow-up actions, as appropriate (e.g., implementation of new BMPs). Specific details of the SSID Projects will depend on what type of stressor (e.g., dissolved oxygen, pathogen indicators, temperature, condition index, and toxicity) is being investigated.

As a participant in the BASMAA RMC, SMCWPPP and its regional partners are required to initiate a combined total of eight new SSID Projects during this permit term (one of which must investigate toxicity). In WY 2018, the RMC partners agreed on an equitable allocation of effort which includes SMCWPPP responsibility for one SSID Project. Consistent with this approach, in WY 2018, on behalf of SMCWPPP, EOA developed the Pillar Point Harbor Watershed Bacteria SSID Project Work Plan. Under our current Task Order (EOA-06), EOA is implementing the Work Plan in WY 2018 and will submit a final SSID project report with the WY 2018 Urban Creeks Monitoring Report (UCMR) by March 31, 2019. This scope includes a modest budget to address any Regional Water Board staff comments on the final SSID project report and any other follow-up needs related to this project.

To reach the goal of eight new SSID Projects during the permit term, the RMC partners also agreed to conduct a regional SSID Project that will likely address electrical utility sources of PCBs. Development of the regional SSID Project Work Plan will be conducted as a BASMAA Regional Project during FY 2018/19. On behalf of SMCWPPP, EOA will assist in oversight of the regional SSID Project Work Plan through participation in the BASMAA MPC Committee which is budgeted under Task SM07.01. The Work Plan may assign monitoring and/or reporting responsibilities to the countywide stormwater programs. At this time, specific details are unknown; therefore, a placeholder budget is included herein to allow SMCWPPP to respond to any SSID Project Work Plan assignments.

The BASMAA RMC is also required to submit unified, regional SSID reports annually to the Regional Water Board. On behalf of SMCWPPP, EOA will continue to work with the BASMAA RMC Workgroup to develop the regional SSID report. It is assumed that the regional SSID report will continue to consist primarily of a large-format table describing the status and conclusions (as available) of all SSID Projects completed, underway, and planned. It will be submitted to the Regional Water Board annually concurrent with the UCMR.

In accordance with Provision C.8.b, all SSID monitoring data will be SWAMP comparable, data quality will be consistent with the SWAMP and BASMAA QAPPs, and data collection and analytical methods will follow the SWAMP and BASMAA SOPs.

QA/QC review (i.e., data validation) of SSID monitoring data will be conducted according to the BASMAA QAPP which specifies quantitative and qualitative data quality objectives (DQOs) for accuracy, precision, and completeness. Data not meeting the defined DQOs will be corrected if possible and flagged as necessary. The data validation process takes several months to complete and typically occurs between July and December as field data sheets are entered, laboratory reports are received, and the online

SWAMP and CEDEN data checkers are accessed. At this time the BASMAA Regional Monitoring Database is not set up for SSID data.

**Deliverables:**

- Address Regional Water Board staff comments on the final Pillar Point Harbor SSID project report, which is to be submitted with the WY 2018 UCMR, and any other follow-up needs related to this project.
- Implementation of any monitoring and/or reporting assignments related to the BASMAA regional SSID Project Work Plan.
- Continue working with RMC partners to maintain the list of candidate SSID projects and to develop the annual regional SSID report submitted concurrently with the UCMR.

Note: The above deliverables are for the 12-month FY 2018/19 time period (i.e., July 1, 2018 – June 30, 2019).

**Budget: $15,201**

## SUBTASK SM07.05: POLLUTANTS OF CONCERN MONITORING

Provision C.8.f requires Pollutants of Concern (POC) monitoring for PCBs, mercury, copper, emerging contaminants, and nutrients. The MRP defines yearly (i.e., water year) and total (i.e., permit term) minimum numbers of samples for each POC. Five priority POC management information needs are identified including Source Identification, Contributions to Bay Impairment, Management Action Effectiveness, Loads and Status, and Trends. The MRP specifies the minimum number of samples for each POC that must address each information need. Provision C.12 requires a regional PCBs in caulk/sealants in infrastructure monitoring study that can be used towards satisfying Provision C.8.f requirements.

Table 1 summarizes the WY 2019 POC monitoring deliverables and budgets. Please note that the first item in Table 1 (participation in the FY 2017/18 BASMAA MPC meetings by EOA staff focusing on PCBs and mercury controls) is for the 12-month FY 2018/19 time period (i.e., July 1, 2018 – June 30, 2019). Also note that MRP requirements related to emerging contaminants will continue to be addressed via SMCWPPP's participation in the RMP (see Subtask SM07.02: Regional Monitoring Program Participation).

**Table 1. WY 2019 POC Monitoring Deliverables and Budgets**

| Deliverable | WY 2019 Budget |
|---|---|
| 1. Participation in the FY 2017/18 BASMAA MPC meetings by EOA staff focusing on PCBs and mercury controls (during FY 2018/19) | $15,707 |
| 2. Workplans and initial planning for POC monitoring fieldwork | $5,000 |
| 3. Stormwater runoff sampling for PCBs and mercury (assume none in WY 2019) | $0 |
| 4. Collection of wet and dry weather creek water samples for nutrients and copper analysis (approximately four samples) | $4,914 |
| 6. Sediment sampling for PCBs and mercury (assume approximately 25 samples) | $44,800 |
| 7. POC monitoring report due October 15, 2019 that details what was accomplished in WY 2019 and what activities are anticipated in WY 2020 | $16,200 |
| 9. WY2018 POC monitoring data that has undergone QC review for all parameters required by Provision C.8.f (assumes no stormwater runoff sampling in WY 2019) | $8,000 |
| 10. WY2018 POC interpretive monitoring report due with the WY2018 UCMR by March 31, 2019 | $32,400 |
| 11. GI/LID inventory, PCBs load reduction accounting, source investigation follow-up, referrals, WMA prioritization update, Annual Report update (supplements SM05.01) | $65,000 |
| **Total POC Monitoring Budget** | **$192,021** |

## SUBTASK SM07.06: PESTICIDES AND TOXICITY MONITORING

EOA will perform the WY 2019 Pesticides and Toxicity (P&T) monitoring specified in MRP Provision C.8.g, which requires that Permittees conduct dry weather and wet weather monitoring of pesticides and toxicity in urban creeks.

**Dry Weather**. San Mateo County Permittees are required to sample one dry weather station per year for water column toxicity (five test organisms), sediment toxicity (two test organisms), and sediment chemistry (pesticides, PAHs, metals, total organic carbon, grain size). EOA, on behalf of SMCWPPP and its member agencies, coordinates dry weather sampling with its RMC partners to realize cost savings on QA/QC samples (e.g., field duplicates, matrix spikes). EOA will conduct planning for WY 2019 dry weather P&T monitoring and samples will be collected in July 2019. EOA will continue to subcontract with KLI to conduct the sampling and KLI will contract with the analytical laboratories (Pacific EcoRisk and Caltest).

**Wet Weather**. The MRP provides the incentive that if wet weather P&T samples are collected on a regional basis, less samples are required overall. Under this regional option, a total of ten wet weather samples must be collected over the permit term, with a minimum of six samples collected by the end of the third water year (WY 2018). Wet weather samples must be analyzed for water toxicity (five test organisms) and water chemistry (pesticides). The wet weather P&T monitoring by SMCWPPP was

implemented during a winter rain event in WY 2018. No additional wet weather P&T samples are required during the permit term.

In accordance with Provision C.8.b, all P&T monitoring data will be SWAMP comparable, data quality will be consistent with the SWAMP and BASMAA QAPPs, and data collection and analytical methods will follow the SWAMP and BASMAA SOPs. Quality assurance and quality control (QA/QC) review (i.e., data validation) of P&T monitoring data will be conducted according to the BASMAA QAPP which specifies quantitative and qualitative data quality objectives (DQOs) for accuracy, precision, and completeness. Data not meeting the defined DQOs will be corrected if possible and flagged as necessary. The data validation process takes several months to complete and typically occurs between July and December as field data sheets are entered, laboratory reports are received, and the online SWAMP and CEDEN data checkers are accessed. The resulting validated spreadsheets tabulating all P&T monitoring data will be uploaded to the BASMAA Regional Monitoring Database which is managed and maintained by EOA.

WY 2019 P&T monitoring results will be included with the IMR due March 31, 2020. See the below description of Subtask SM07.07 (Reporting) for more information.

**Deliverables:**

- Telephone and email communications and planning in preparation for WY 2019 P&T sample collection.
- WY 2019 dry weather P&T monitoring at one station.
- WY2018 P&T monitoring data that have undergone QA/QC review for all parameters required in Provision C.8.g.

**Budget: $29,165**

## SUBTASK SM07.07: REPORTING

Provision C.8.h requires annual and comprehensive reporting of data collected pursuant to MRP Provision C.8, in SWAMP-comparable format as appropriate for submittal to the Regional Water Board, and submittal of applicable data to CEDEN. EOA will develop all required reporting materials for review and comment by SMCWPPP member agencies prior to Regional Water Board submittal.

Per MRP requirements, Electronic Monitoring Data reports will be submitted annually (by March 31) to the Regional Data Center (i.e., SFEI) for upload to CEDEN. The Electronic Monitoring Data reports will include all data that CEDEN accepts, which has recently been expanded beyond receiving water data to potentially include upland urban sediments and MS4 outfall data. Each Electronic Monitoring Data report will include monitoring results conducted pursuant to Provisions C.8.d (Creek Status Monitoring), Provision C.8.e (SSID Projects), C.8.f (POCs), and C.8.g (Pesticides and Toxicity) for the preceding water year.

Urban Creeks Monitoring Reports (UCMRs) are submitted annually (by March 31) to the Regional Water Board. The UCMRs summarize results and provide interpretations of data collected pursuant to Provisions C.8.d through C.8.g for the preceding water year. Bioassessment data are evaluated using the California Stream Condition Index (CSCI). Creek Status and P&T data are compared to the "triggers" listed in the MRP. Triggers are numeric thresholds above (or below) which impacts to water quality may

occur. The MRP triggers are taken from a variety of sources, including water quality objectives from the Basin Plan, state and federal regulatory guidance, and peer reviewed literature. Data exceeding the triggers are compiled in a list of candidate SSID Projects. Monitoring stations and results are presented in GIS maps and analyzed using spreadsheets and statistical software, as appropriate. The SSID and POC reporting elements are developed as stand-alone reports under their respective subtasks described above and attached to the UCMR as appendices.

EOA will develop an Integrated Monitoring Report (IMR), which must be submitted by March 31 of the fifth year of the permit term (i.e., March 31, 2020) in lieu of the annual UCMR. This report is intended to be submitted as part of the next Report of Waste Discharge (ROWD) for the reissuance of the MRP. In addition to the standard UCMR requirements described above, the IMR must include a comprehensive analysis of all data collected during WY 2014 – WY 2019 pursuant to Provision C.8 (i.e., data collected since the previous IMR, which included data collected in WY 2012 and WY 2013). A major component of the IMR will be an assessment of ambient stream conditions in San Mateo County using the probabilistic dataset. It is anticipated that the ongoing BASMAA regional project reviewing the RMC's five-year (i.e., WY 2012 – WY 2016) bioassessment dataset will serve as a template upon which to base the comprehensive analysis of bioassessment data collected in San Mateo County.

The IMR must also include a budget summary for each monitoring requirement and recommendations for future monitoring. The recommendations will incorporate the results of a BASMAA regional project addressing the design of future bioassessment monitoring that will be initiated in FY 2018/19 and concluded in FY 2019/20. The project concept for the BASMAA project (entitled "Redesign of the Probabilistic Monitoring Program") is currently under review by the BASMAA Board of Directors.

Deliverables related to SSID projects and POC Monitoring will be developed via separate subtasks described previously but will be summarized in the IMR and included as appendices.

As in previous years, EOA will also develop the WY 2019 Electronic Monitoring Data Report.

**Deliverables:**

- WY 2019 Electronic Monitoring Data Report (due March 31, 2020).
- IMR (due March 31, 2020).

**Budget: $85,074**

**DRAFT 6-5-2018**

# EXHIBIT A

**EOA Municipal Stormwater Permit Compliance Assistance to C-CAG**

| | EOA Hourly Rate for SMCWPPP: | Principle $230 | Manager III $216 | Manager II $214 | Manager I $211 | Senior III $194 | Senior II $172 | Senior I $154 | Associate II $144 | Associate I $117 | Technician $94 | Clerical $70 | Expenses/Subs | WY 2019 Budget (EOA-08) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Water Quality Monitoring - WY2019** | | | | | | | | | | | | | | |
| **SM07.01** | Regional Coordination | 0 | 0 | 8 | 120 | 0 | 0 | 0 | 23 | 0 | 0 | 0 | $660 | **$31,004** |
| **SM07.02** | Regional Monitoring Program Participation | 0 | 12 | 0 | 94 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $498 | **$22,924** |
| **SM07.03** | Creek Status Monitoring | 0 | 32 | 0 | 182 | 240 | 0 | 130 | 286 | 140 | 104 | 0 | $45,310 | **$224,544** |
| **SM07.04** | Stressor/Source Identification Projects | 0 | 4 | 0 | 24 | 0 | 0 | 4 | 0 | 24 | 0 | 2 | $5,709 | **$15,201** |
| **SM07.05** | Pollutants of Concern Monitoring | 0 | 240 | 0 | 40 | 360 | 0 | 80 | 48 | 48 | 0 | 4 | $36,773 | **$192,021** |
| **SM07.06** | Pesticides and Toxicity Monitoring | 0 | 2 | 0 | 12 | 8 | 0 | 10 | 0 | 0 | 2 | 0 | $22,921 | **$29,165** |
| **SM07.07** | Reporting | 0 | 36 | 0 | 88 | 120 | 0 | 80 | 80 | 80 | 0 | 20 | $850 | **$85,074** |
| | | **0** | **326** | **8** | **560** | **728** | **0** | **304** | **437** | **292** | **106** | **26** | **$112,722** | **$599,934** |

**Notes:**

Labor hours are based upon the approximate level of effort for each task.

Subcontractors and expenses are planning-level estimates.

Actual distribution of hours and subcontractors/expenses within and among tasks may vary.

Total budget will not be exceeded without C/CAG's authorization.

Subtasks SM07.01 (Regional Coordination), SM07.02 (Regional Monitoring Program Participation), and SM07.04 (SSID Projects) are ongoing activities that are not tied to a particular water year. For these subtasks, the above budgets cover the 12-month FY 2018/19 period of time (i.e., July 1, 2018 – June 30, 2019).

Expenses/subcontractors budgets shown include 10% overhead.