



REPORT TO COUNCIL **9**

City of Sacramento

915 I Street, Sacramento, CA 95814-2604
www. CityofSacramento.org

Consent
August 15, 2006

Honorable Mayor and
Members of the City Council

Title: Supplemental Agreement: Stormwater Monitoring Services

Location/Council District: Citywide

Recommendation: Adopt a **Resolution:** 1) authorizing the City Manager to execute a Supplemental Agreement to City Agreement number 2005-0194 with Larry Walker Associates, Inc. (LWA), to provide Stormwater Monitoring Services for FY 2006-07 for an amount not to exceed \$581,789, and 2) amending the FY 2006-07 Capital Grants Revenue and Expenditure Budgets for the FY 2006-07 NPDES Stormwater Monitoring Project (VM66).

Contact: Dave Brent, Engineering Manager, 808-1420; Bill Busath, Supervising Engineer, 808-1434

Presenters: N/A

Department: Utilities

Division: Engineering Services

Organization No: 3333

Description/Analysis

Issue: Water quality sampling of stormwater runoff and of local waterways is a requirement of the 2002 National Pollutant Discharge Elimination System (NPDES) permit (Permit No. CA0082597) issued by the State Regional Water Quality Control Board - Central Valley Region to the County of Sacramento and the Cities of Sacramento, Citrus Heights, Elk Grove, Folsom, Galt, and Rancho Cordova (Permittees). LWA was selected to provide up to three years of stormwater monitoring services through a Request for Qualifications process conducted in 2005 by City staff, with Permittees staff participation. This FY 2006-07 Supplemental Agreement will cover the services to be performed for the second of three monitoring seasons authorized by the original agreement.

Policy Considerations: The Stormwater Monitoring Program is a federally mandated program. Implementation of the proposed activities supports the following City strategic goals to:

1. Establish and strengthen the community and regional partnerships to enhance the quality of life; and

2. Preserve and expand the arts and culture, open space, urban forest, parks and recreation opportunities.

Environmental Considerations: This project is not subject to CEQA review, because it is an information collection activity as part of an ongoing water quality study (CEQA Guidelines Section 15306). There will be no environmental impacts associated with collection and analysis of water quality samples.

Financial Considerations: The total cost of the Supplemental Agreement with Larry Walker Associates, Inc. is \$581,789. The City's share (33.5%) is \$194,900. There are sufficient funds in the FY 2006-07 Storm Drainage Capital Improvement Program (PN: WM66, Fund 425), to fund the City share.

The cost of the Supplemental Agreement will be shared as follows:

City of Sacramento (33.5%)	\$ 194,900
County of Sacramento (42%)	\$ 244,351
City of Citrus Heights (7%)	\$ 40,725
City of Elk Grove (7%)	\$ 40,725
City of Folsom (5%)	\$ 29,089
City of Galt (1.5%)	\$ 8,727
City of Rancho Cordova (4.0%)	<u>\$ 23,272</u>
Total	\$ 581,789

Staff recommends that the FY 2006-07 Capital Grants Revenue and Expenditure Budgets for the FY2006-07 NPDES Stormwater Monitoring Project (PN:WM66, Fund 248) be amended for the reimbursement from the other entities listed above in the amount of \$386,889.

Emerging Small Business Development (ESBD): LWA is not certified in the City as an Emerging Business Enterprise.

Respectfully Submitted by: 
David L. Brent
Engineering Manager

Approved by: 
Gary A. Reents
Director of Utilities

Recommendation Approved:

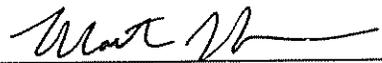
for 
Ray Kerridge
City Manager

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Attachment 1**Background**

In December 2002, the Regional Water Quality Control Board - Central Valley Region reissued an NPDES permit (Permit No. CA0082597) to the County of Sacramento and the Cities of Sacramento, Citrus Heights, Elk Grove, Folsom, Galt, and Rancho Cordova (Permittees) regulating the discharge of stormwater into local water bodies. The Permit requires implementation of programs to reduce the pollution conveyed by stormwater runoff into local water bodies and requires implementation of a Stormwater Monitoring Program.

The costs for implementing some of these programs are shared by the Permittees as described in a master MOU approved by the City Council in 2003 (No. 2003-054). The master MOU includes administrative procedures for sharing of work products and apportionment of program costs, which includes monitoring activities.

A significant portion of the Stormwater Monitoring Program is accomplished through annual consultant services agreements. Consultant services include development of sampling plans, field sampling, technical assistance, laboratory analysis, and preparation of reports.

LWA was selected for stormwater monitoring services through a Request for Qualifications process conducted in 2005 by City staff, with Permittee staff participation. The Request for Qualifications included various permit required monitoring tasks to be performed over a period of up to three years. The original FY 2005-06 Stormwater Monitoring Services contract (Agreement No. 2005-0194) included work for one monitoring season, with a potential maximum of two successive one-year extensions upon the approval of a Supplemental Agreement specifying the scope of services and payment provisions for such extended term(s). The amount paid for the FY 2005-06 services was \$588,039.

The FY 2006-07 Supplemental Agreement will cover services to be performed for the second of three monitoring seasons authorized by the original agreement and includes coordination of stormwater sampling activities; sampling of water quality within creeks and sump locations; bioassessment monitoring within two creeks; water quality sampling to determine pesticide concentrations in the rivers, creeks and rainwater; and regulatory reporting.

RESOLUTION NO.

Adopted by the Sacramento City Council

AUTHORIZING A SUPPLEMENTAL AGREEMENT WITH LARRY WALKER ASSOCIATES, INC. FOR FY2006-07 STORMWATER MONITORING SERVICES (PN:WM66) FOR AN AMOUNT NOT TO EXCEED \$581,789

BACKGROUND

- A. In December 2002, the Regional Water Quality Control Board - Central Valley Region reissued an NPDES permit (Permit No. CA0082597) to the County of Sacramento and the Cities of Sacramento, Citrus Heights, Elk Grove, Folsom, Galt, and Rancho Cordova (Permittees) regulating the discharge of stormwater to local bodies of water.
- B. The Permit requires that the Permittees develop and implement programs to reduce pollution caused by stormwater runoff and to conduct a Stormwater Monitoring Program.
- C. Larry Walker Associates was selected to provide stormwater monitoring consultant services through a Request for Qualifications process conducted in 2005 by City staff, with Permittees staff participation.
- D. City staff will administer the Supplemental Agreement, and in accordance with the master Memorandum of Understanding 03-054 with the Permittees, the cost of the Supplemental Agreement will be shared by the parties to the Master MOU with a cost to the City of Sacramento not to exceed \$194,900.

BASED ON THE FACTS SET FORTH IN THE BACKGROUND, THE CITY COUNCIL RESOLVES AS FOLLOWS:

- Section 1. The City Manager is authorized to execute a Supplemental Agreement to City Agreement number 2005-0194 with Larry Walker Associates, Inc., to provide Stormwater Monitoring Services for FY 2006-07 for an amount not to exceed \$581,789.
- Section 2. The FY2006-07 Capital Improvement Program is hereby amended by increasing the NPDES Stormwater Monitoring Project (WM66) Capital Grants Revenue Budget (248-500-WM66) in the amount of \$386,889.

Section 3. The FY2006-07 Capital Improvement Program is hereby amended by increasing the NPDES Stormwater Monitoring Project (WM66) Capital Grants Expenditure Budget (248-500-WM66-4820) in the amount of \$386,889.

SUPPLEMENTAL AGREEMENT
Engineering Services Division

Project Title and Job Number: Stormwater Monitoring Services WM66
Date: 07/20/06
Purchase Order #:6WM6605194

Supplemental Agreement No.: 1

The City of Sacramento ("City") and Larry Walker Associates ("Consultant"), as parties to that certain Consultant and Professional Services Agreement designated as Agreement Number CA2005-0194, including any and all prior supplemental agreements modifying said agreement (said agreement and supplemental agreements are hereafter collectively referred to as the "Agreement"), hereby supplement and modify the Agreement as follows:

1. The scope of Services specified in Exhibit A of the Agreement is amended as follows:

Consultant shall perform the Services described in Attachment 1 to Exhibit A, attached hereto and incorporated herein by this reference

2. In consideration of the additional and/or revised services described in Section 1 above, the maximum not-to-exceed amount that is specified in Exhibit B of the Agreement for payment of Consultant's fees and expenses, is increased/~~decreased~~ by \$581,789, and said maximum not-to-exceed amount is amended as follows:

Agreement's original not-to-exceed amount:	\$ <u>588,039</u>
Net change by previous supplemental agreements:	\$ <u>0</u>
Not-to-exceed amount prior to this supplemental agreement:	\$ <u>588,039</u>
increase/ decrease by this supplemental agreement:	\$ <u>581,789</u>
New not-to-exceed amount including all supplemental agreements:	\$ <u>1,169,828</u>

3. The hourly rates specified in Exhibit B of the Agreement shall be replaced by the rates shown on Attachment 1 to Exhibit B, attached hereto and incorporated herein by this reference.
4. Consultant agrees that the amount of increase or decrease in the not-to-exceed amount specified in Section 2 above, and the rates specified in Section 3 above, shall constitute full compensation for the additional and/or revised services specified in Section 1, above, and shall fully compensate Consultant for any and all direct and indirect costs that may be incurred by Consultant in connection with such additional and/or revised services, including costs associated with any changes and/or delays in work schedules or in the performance of other services or work by Consultant.
5. Consultant warrants and represents that the person or persons executing this supplemental agreement on behalf of Consultant has or have been duly authorized by Consultant to sign this supplemental agreement and bind Consultant to the terms thereof.
6. Except as specifically revised herein, all terms and conditions of the Agreement shall remain in full force and effect, and Consultant shall perform all of the services, duties, obligations, and conditions required under the Agreement, as supplemented and modified by this supplemental agreement.

Approval Recommended by:

Approved as to Form By:

Project Manager

City Attorney

Approved By:

Consultant

Approved By:

City of Sacramento
_____ DLB

Attested to By:

City Clerk

Exhibit A

CONSULTANT SCOPE OF SERVICES Sacramento Stormwater Monitoring Program, 2006-07

This Scope of Work describes the consulting services to be provided by Larry Walker Associates, Inc. (LWA) and its subcontractors (collectively, "Consultant") to the Sacramento Stormwater Quality Partnership (Partnership) during the 2006-07 contract year, under the terms of LWA's Stormwater Monitoring Program contract with the City of Sacramento Department of Utilities.

TASK 1. MONITORING management & Coordination

This task involves all work related to monitoring activity coordination, including providing weather forecasts and interpretations to the Partnership, Coordinated Monitoring Program (CMP) coordination, and providing updates following monitoring mobilization efforts related to this contract. These activities provide general monitoring support for all of the monitoring activities. Specific monitoring tasks are included under in this Scope of Services to cover the individual study monitoring and reporting tasks.

Subtask 1.1 Preseason Preparations

Preseason preparations refer to specific maintenance, planning, and training tasks that occur before active monitoring begins.

Sampling Plan Preparation and Field Crew Training

The Consultant will update the urban tributary (including additional pesticide, rainfall, and pesticide persistence), discharge characterization, and bioassessment sampling and analysis plans (SAP) for the 2006-07 monitoring year. The urban tributary and discharge characterization SAPs will specify sampling locations, analytical constituents, laboratories, bottle and equipment cleaning procedures, QC rotation schedule, communication plan, and field procedures for dry and wet weather monitoring. Analytical constituents and associated sample collection procedures will conform with the requirements of the NPDES Permit, in particular the schedules for monitoring of constituents listed in the NPDES Permit, Tables 1 and 2, per Monitoring and Reporting Program Section II.A and the agreement with the Central Valley Regional Water Quality Control Board (CVRWQCB) to perform "Table 2" monitoring in years three (2005-06) and four (2006-07) of the Permit. Consultant shall identify and secure the services of qualified laboratories to perform all sample analyses specified in the SAP, and assign qualified consultant team staff to perform all required monitoring functions.

Criteria shall be developed to assist in identifying target events for the 2006-07 discharge monitoring by Partnership staff in consultation with Consultant, and summarized by the Consultant in a brief memorandum or e-mail to the Partnership and Consultant monitoring staff.

Amendments to the Bioassessment sampling plan will be submitted at the Partnership direction to consider recommendations from the first two years of monitoring and comments from the CVRWQCB.

Consultant will plan, arrange, and conduct a half-day training session for Partnership and Consultant field personnel, covering clean sampling techniques and the procedures outlined in the creek and discharge characterization monitoring SAP.

Urban Tributary Station Preparations

The urban tributary locations are generally "manually" sampled and the discharge characterization sites use automated sampling equipment that is permanently installed on site and is remotely available via telephone lines. The Consultant will procure and deploy all equipment, materials, and supplies necessary to perform the creek monitoring activities specified in the SAP. Testing and

calibration of field equipment will be performed as needed.

Discharge Characterization Station Preparations

The Consultant will test the existing discharge characterization sampling and datalogging equipment and identify any operational problems. It is expected that at least the flowmeter probe and possibly the flowmeter at Strong Ranch Slough will be replaced. The County or City will perform any electrical repairs necessary at all sites. Minor problems that can be addressed through routine maintenance will be performed immediately. Although not anticipated at the Sump locations, complete replacement of flow meters, sample pumps, or dataloggers will only be performed if directed by the Partnership as an additional expenditure.

The Consultant will collect equipment blank samples for Teflon tubing and composite bottles for metals and trace organics.

Subtask 1.2 Pre-storm Activities

Pre-storm activities refer to the tasks performed by the consultant immediately before a targeted storm event. These activities include procuring and mobilizing sampling equipment, reviewing updated weather forecast information, and coordinating field-staffing logistics.

Equipment Preparation

The Consultant will prepare and mobilize all necessary equipment to complete monitoring activities including composite bottles (carboys), pump tubing, sample bottles, portable pumps, field meters, coolers, ice, etc. The equipment will be mobilized to the appropriate field staff including Partnership staff as necessary. Equipment that comes in direct contact with sample will be laboratory-cleaned according to the Partnership protocols.

Weather Tracking

This sub-task involves all work related to providing weather updates to the Partnership with biweekly written forecasts and unlimited 24-hour, 7-day per week phone consultation when prior arrangements are made. A specialized weather consultant will be contracted to provide primary forecasting services. The Consultant will generally act as the primary point of contact for the forecaster unless alternative arrangements are made. As candidate storm events are identified, the Consultant will notify field crews and consult the Partnership as necessary.

Study Coordination

The consultant will maintain contact with all key field staff for each study including the CMP ambient river monitoring crew. Field crews will be updated, as necessary, according to the Partnership "storm action levels" which specify readiness and mobilization status. The Consultant will present monitoring options to the Partnership with regard to storm selection and event timing as forecasts develop. The Partnership "storm contact" will provide feedback on whether to mobilize for a storm event or in scheduling dry weather events.

Consultant will assist in the activities of the CMP to provide support for collection of American and Sacramento River samples during up to two coordinated wet weather monitoring events and two coordinated dry weather events. Consultant will arrange for the collection and analysis of CMP samples during these events for the constituents in Tables 1 and 2 of the Monitoring and Reporting Program (MRP) that are not included within the normal CMP analytical suite. If needed, consultant will make all necessary arrangements to ensure that such samples are collected by CMP staff, including labeling and delivering sample bottles, preparing chain of custody forms, and ensuring sample delivery to the analytical laboratories. CMP staff will collect river samples. Analytical costs are not included in this agreement, and will be billed directly to the Partnership by the CMP.

Urban tributary, receiving water, and discharge characterization monitoring will be coordinated to the extent possible with each other and other Sacramento area monitoring efforts. When feasible, monitoring will be timed to coincide with ambient river monitoring conducted under the CMP, Sacramento River Watershed Program monitoring, or other monitoring as requested by the Partnership.

Subtask 1.3 Storm Activities

This subtask involves the general oversight and coordination by the “monitoring manager” during the storm event of all field activities including urban tributary, additional pesticide, rainwater, discharge characterization, and ambient receiving water. The Consultant monitoring manager will remain available by phone throughout the entirety of the sampling event to coordinate weather forecast reporting, field condition evaluation, storm progress tracking, sample pick-up, staffing, equipment troubleshooting, as well as providing essential mobilization and tracking duties. It may also be necessary for the monitoring manager to mobilize to the field for final site visits at the end of the monitoring event.

Subtask 1.4 Post-storm Activities

This subtask cover activities following the completion of sampling related to preparation of storm composites, sample shipment, coordination with laboratories, and monitoring activity summary e-mails.

Sample Disposition

At the conclusion of each monitoring event for each of the studies, Consultant will deliver the samples from the field stations to the staging area. The composite samples will be broken down by Consultant into appropriate containers for all required analyses as specified in the SAP, and placed on ice. All samples will be promptly packed and delivered to the analytical laboratories. Consultant will prepare chain of custody documentation to accompany the samples from staging area to laboratory. Consultant will pay for commercial delivery services as needed.

Oversee Laboratory Activities

Laboratories shall be instructed to batch Sacramento stormwater samples separately, or exclusively with samples of a compatible matrix, to minimize analytical interferences from other sources. Laboratory turn-around times shall be 30 days from receipt of samples. Laboratories shall be requested to output analytical data into spreadsheet files in the format established for the Sacramento Stormwater Monitoring Database, and provide them to the Consultant along with hard copy lab reports.

Completion of specified analyses is contingent upon collection of adequate composite sample volume during monitoring events; if less than the desired composite sample is obtained, Consultant will consult with Partnership staff to determine how the analyses can make optimal use of the available sample volumes.

Consultant shall conduct follow-up communications with analytical laboratories as needed, to confirm laboratory receipt of samples, verify laboratory instructions for sample preparation and analysis, and assist laboratory personnel with other questions or issues as they arise.

Summary E-mail Notification

This subtask involves distribution of status e-mails following any mobilization effort and event summary memoranda following successfully captured monitoring events. The post event status email will be sent to the Partnership within 48 hours of the completion of any mobilization effort whether it results in a successfully captured event or a false start. The e-mails will provide a brief summary of the forecast, decision-to-mobilize discussion, monitoring activities, problems encountered, rainfall totals, and any recommendations for future events.

TASK 2. DISCHARGE MONITORING

This task involves all specific work related to urban runoff discharge monitoring, including collection of samples, QA/QC data evaluation, and reporting.

Sub-task 2.1 Monitoring

This subtask involves work related to discharge sample collection and analysis of samples from Sump 104, Sump 111, and Strong Ranch Slough. Additional details on procedures will be included in the 2006-07 SAP.

Consultant shall conduct discharge monitoring using composite collection equipment and existing permanent sampling stations at the three locations. Samples shall be collected during up to three storm events and two dry weather events at three urban runoff sites (Sump 104, Sump 111, and Strong Ranch Slough) between September 1, 2006 – June 30, 2007, weather and other conditions permitting. Consultant shall be responsible for field supervisory activities prior to and during monitoring events. Consultant shall provide monitoring support services and all monitoring including maintenance/equipment calibration and troubleshooting. The Partnership will provide at least one field staff to support Consultant led activities, as necessary for longer monitoring events and during the first event of the year.

Storm-length or 24-hour composites (whichever is less) shall be collected for each of the events monitored. Consultant staff shall be responsible for deploying, changing, and collecting composite carboys as needed, and for collecting grab samples for constituents as specified in the SAP. Samples will be analyzed for constituents in Tables 1 and 2 of the MRP for the first event of the year and Table 1 for all subsequent events.

False Starts

In the event that a storm is selected for monitoring and sample collection activities commence, but the storm does not or is not projected to produce sufficient rainfall within a reasonable period (generally 24 hours) to produce adequate runoff for collection of the minimum composite sample volume, field crews shall be demobilized and the event shall be considered a false start, upon concurrence of the Partnership contact and the Consultant monitoring task manager. Labor hours and other direct costs are budgeted for one false start, and assume Consultant responsibilities as described above to conduct monitoring preparation/termination and monitoring management activities.

Blackout periods

Monitoring will not be required under this Scope of Work during the following period (all dates inclusive): November 22, 2006 – November 27, 2006 and December 23, 2006 – January 2, 2007; and other periods to be determined jointly by Consultant and Partnership during the course of the wet weather monitoring season. The monitoring task manager shall remind Partnership contacts and field crews in advance of these blackout dates.

Subtask 2.2 Reporting

This subtask involves all work required to report the results of discharge characterization monitoring, including QA/QC data evaluation and report production.

QA/QC Data Evaluation

Consultant shall check all lab data reports to verify that all requested analyses were completed and that all requested results were reported (including laboratory internal QA/QC results), and that specifications for holding times, analytical methods, and reporting limits were met by the laboratories. Consultant shall contact laboratory personnel to request that they correct errors, provide missing information, or rerun sample analyses as needed. The designated agency contacts shall be copied on all formal memoranda sent to analytical labs.

Consultant shall conduct a comprehensive evaluation of all QA/QC data produced by the

analytical laboratories, apply the QA/QC results to the environmental sample data, and qualify any data which do not meet data quality objectives, according to protocols established in the Data Quality Evaluation Plan (DQEP).

Draft and Final Discharge Monitoring Report

Consultant shall prepare a draft Discharge Monitoring Report (DMR) containing the results of all monitoring events, including a description of monitoring field activities, rainfall/runoff measurements during the monitoring events, antecedent precipitation conditions, analytical results, and the full documentation of the data evaluation according to the DQEP. The runoff sample results shall be compared to appropriate water quality objectives. The report shall be organized according to format approved by the Partnership. The draft report shall be delivered for Partnership review and comment by July 16, 2006 in electronic format (Microsoft Word and PDF format).

Consultant shall respond to Partnership review comments on the draft report, incorporate changes where necessary, and deliver 12 copies of the final report within three weeks of receipt of Partnership comments. Consultant also shall provide electronic copies (Microsoft Word and PDF formats) of the report and the updated stormwater database files within two weeks of submittal of the final report.

Stormwater Quality Database

Consultant shall incorporate water quality data produced during the 2006-07 monitoring year into the Sacramento Stormwater Quality database. Consultant shall enter the discharge characterization and associated QA/QC data into the database, and apply all necessary data qualification coding, for all applicable monitoring data produced under this Scope of Work, according to procedures specified in the currently approved version of the project DQEP. Consultant shall verify that all data are included correctly in the data files, check that duplicate analytical results are reported in the format decided upon by the Partnership, and verify that all media (certified lab data reports, electronic data files, and report tables) agree.

Task 3. creek monitoring

This task relates to monitoring activities on Willow Creek in Folsom, Arcade Creek, and Morrison Creek, as required by the Sacramento Stormwater NPDES Permit (Monitoring and Reporting Program section II.B-2, Urban Tributary Monitoring).

Subtask 3.1 Urban Tributary and Rainfall Monitoring

Urban tributary monitoring includes studies of three long-term creek monitoring stations and six additional pesticide locations.

Creek Monitoring

Consultant will collect creek samples from Arcade Creek at Watt Avenue (Sacramento), Morrison Creek at Brookfield Drive (Sacramento), and Willow Creek at Blue Ravine Road (Folsom), during three wet weather events and one dry weather event during the period September 1, 2006 – June 30, 2007. Consultant will target the first event of the wet season forecasted with a minimum 0.25" of rain during a 24-hour period and a minimum 50% probability of precipitation. These mobilization criteria may be modified with Partnership approval/direction.

For the first wet weather monitoring event of the season, samples will be collected throughout the duration of the storm event hydrograph, with a maximum limit of 24 hours if automated composite samplers are used and 18 hours if sample aliquots are collected manually. For this event only, composite samples will be collected as multiple grab sample aliquots. Each individual sample aliquot volume will be proportional to the approximate creek flow. Aliquots will then be composited to form an approximate flow-proportioned composite sample representative of the sampling period. At a minimum, the composite sample shall be representative of a majority of the storm

hydrograph, be collected at inter-aliquot intervals no greater than four hours, and composed of at least five aliquots. Flow measurements will make use of available flow monitoring structures or equipment to the extent feasible, and flow rates (or equivalent) will be recorded along with the timing of each sample aliquot. Where only stage data are available, flow proportioning will be based on standard stage-flow relationships. For constituents that cannot be composited (i.e., those which must be collected as grabs), grab samples will be collected as near to the peak of the hydrograph as is feasible. The Consultant will contact the Partnership storm contacts before terminating sampling activities. If the Partnership contacts are not available, the Consultant will terminate sampling using best professional judgment and minimum guidelines discussed above to adequately characterize the storm event runoff. If storm runoff conditions persist longer than the specified maximum period, the Consultant will contact the Partnership to discuss sampling scheme alternatives to extend the sampling period and increase the percentage of the runoff event captured in the composite sample.

For subsequent wet weather events and the dry weather event, all samples will be collected as one-time grabs. For these wet weather events, samples will be timed to be as close to the peak of the hydrograph as feasible. All grab samples and composite sample aliquots will be collected at mid-stream, mid-depth where feasible. Composite samples for the first event will be analyzed for all constituents in Tables 1 and 2 of the MRP. Subsequent events are grab samples only collected for OP pesticides, standard field measurements, bacteriological indicators and constituent for which the water body is impaired downstream of the monitoring station.

Additional Pesticide Monitoring

In September 2005, the Consultant prepared a technical memorandum advising the Partnership to request the removal of several additional pesticide locations as the data collected at those sites was represented by the long-term creek sites. If necessary, Consultant will perform additional monitoring for diazinon and chlorpyrifos in Elder Creek at Morrison Creek, Elk Grove Creek at Laguna Road, Natomas East Main Drain at Elkhorn Road, Natomas East Main Drain at San Juan Road, Chicken Ranch Slough, and Morrison Creek at Sunrise Road. The exact location of monitoring may be modified if conditions do not permit safe access. The additional pesticide monitoring locations and protocols will be included as distinct sections within the creek monitoring SAP. The monitoring will be performed during one storm event during the dormant spray application season (January – February), one storm event following the dormant spray season, and once during the dry season (May – September).

Monitoring will be coordinated to coincide with creek monitoring events, and monitoring protocols will be as described for creek monitoring above and in the 2006-07 Creek Monitoring Sampling and Analysis Plan, except that samples will be collected as single, rather than multiple grab samples. Samples will be collected at mid-depth, mid-stream locations (where feasible), and timed to be as near the peak of the hydrograph as possible during wet weather events.

False Starts

In the event that a storm is selected for monitoring and sample collection activities commence, but the storm does not or is not projected to produce sufficient rainfall within a reasonable period to produce adequate runoff for collection of the minimum composite sample volume, field crews will be demobilized and the event will be considered a false start, upon concurrence of the Partnership contact and the Consultant monitoring task manager. Labor hours and other direct costs are budgeted for two false starts.

Blackout periods

Monitoring will not be required under this Scope of Work during the following period (all dates

inclusive): November 22, 2006 – November 27, 2006 and December 23, 2006 – January 2, 2007; and other periods to be determined jointly by Consultant and Partnership during the course of the wet weather monitoring season. The monitoring task manager will remind Partnership contacts and field crews in advance of these blackout dates.

Subtask 3.2 Urban Tributary and Rainwater Reporting

The Consultant will prepare a report summarizing field activities and the reported data for the creek, pesticide persistence, additional pesticide, and rainwater monitoring efforts described in subtask 3.1.

Consultant will check all lab data reports to verify that all requested analyses were completed and that all requested results were reported (including laboratory internal QA/QC results), and that specifications for holding times, analytical methods, and reporting limits were met by the laboratories. Consultant will contact laboratory personnel to request that they correct errors, provide missing information, or rerun sample analyses as needed. The designated agency contacts will be copied on all formal memoranda sent to analytical labs.

Consultant will conduct a comprehensive evaluation of all QA/QC data produced by the analytical laboratories, apply the QA/QC results to the environmental sample data, and qualify any data which do not meet data quality objectives, according to protocols established in the most recent Partnership Data Quality Evaluation Plan (DQEP).

Draft and Final Creek Monitoring Report

Consultant will prepare a draft creek monitoring report containing the results of all monitoring events, including a description of monitoring field activities, rainfall/runoff measurements during the monitoring events, antecedent precipitation conditions, analytical results, and the full documentation of the data evaluation according to the DQEP. The report will include results from creek monitoring, pesticide persistence monitoring, additional pesticide monitoring, and rainwater monitoring. The report will be organized according to format approved by the Partnership. The draft report will be delivered for Partnership review and comment by July 16, 2007 in electronic format (Microsoft Word and PDF format).

Consultant will respond to Partnership review comments on the draft report, incorporate changes where necessary, and deliver 12 copies of the final report within three weeks of receipt of Partnership comments. Consultant also will provide electronic copies (Microsoft Word and PDF formats) of the report and the updated stormwater database files within two weeks of submittal of the final report.

Additional Pesticide Reporting

QA/QC samples and data produced for creek monitoring will be shared for evaluation of additional pesticide monitoring data. The data produced by the additional pesticide monitoring will be evaluated along with the creek monitoring data.

The additional pesticide monitoring results will be reported as distinct sections within the creek monitoring report, according to the schedule as described above. Data from additional pesticide monitoring also will be included with the creek monitoring data in the assessments of compliance with standards, as described above.

Consultant will perform an evaluation and statistical analysis of all diazinon and chlorpyrifos pesticide data collected by the Partnership, to determine whether data from the long-term discharge and receiving water monitoring locations are representative of the additional four water bodies for which additional pesticide monitoring is required. Consultant will produce a technical memorandum detailing the results of the analysis and evaluation, and deliver a draft to the Partnership by July 16, 2007. Consultant will respond to Partnership review comments on the draft memorandum, incorporate changes where necessary, and deliver 12 copies of the final memorandum within three weeks of receipt of Partnership comments.

Rainwater Reporting

Rainwater data, if collected by the Permittees, will be reported as a separate section within the creek monitoring report.

Task 4. BIOASSESSMENT

Pacific EcoRisk (PER) will direct all aspects of the bioassessment study for the Partnership, including the sampling for benthic macroinvertebrates (BMI), as subcontractor to LWA. PER will subcontract organism identification services to EcoAnalysts Incorporated for analysis of the collected BMI samples. LWA will provide overall technical and administrative oversight, including review of key task deliverables. The Consultant will also collect field samples of sediment and water for both pesticide concentration and toxicity.

Subtask 4.1 Bioassessment Monitoring

Bioassessment sampling will be performed in accordance with the bioassessment monitoring plan approved by the CVRWQCB. Sampling will be performed in spring 2006. Pacific EcoRisk field crews, currently trained to perform bioassessment sampling following the CSBP and/or modified USEPA EMAP protocols as directed by the Partnership, as well as protocols for snag and soft bottom habitats, will be trained in any additional aspects of the sampling required per the approved plan. Pacific EcoRisk field crews will review the chain-of-custody (COC) records prior to delivery of samples to the laboratories performing sample analyses. Copies of all COC records will be made available to the Partnership, California Department of Fish and Game Aquatic Bioassessment Laboratory (CDFG-ABL) and CVRWQCB upon request.

Pacific EcoRisk staff will sort all samples according to the laboratory SOP in the Bioassessment Monitoring Plan. The level of sorting (*i.e.*, number of organisms) and sub-sampling are documented in that SOP. Pacific EcoRisk will identify all organisms to Level III taxonomy as specified by the Central Valley Bioassessment Reference Condition Committee (CVBRCC); identification to species will be performed by EcoAnalysts. Intra-laboratory QA/QC will be performed for sub-sampling and taxonomic validation. Inter-laboratory taxonomic validation will be performed on 20% of the samples. Stormwater program organisms will be maintained in the Pacific EcoRisk voucher specimen collection, which will be made available to Partnership agency staff upon request.

Subtask 4.2 Bioassessment Reporting

PER will enter all bioassessment data electronically in a format consistent with the Surface Water Ambient Monitoring Program (SWAMP). The electronic data deliverable (EDD) will be submitted to the Partnership along with the study report. The EDD will also be submitted to the CDFG-ABL for inclusion in the Statewide Access Bioassessment Database, at the request of the Partnership. PER will prepare a draft and final Bioassessment Study report. The report will include all information specified for the bioassessment monitoring requirements in the Sacramento Stormwater NPDES Permit. The draft report will be electronically submitted to Partnership agency staff for comments by July 31, 2007. The Consultant will respond to Partnership review comments on the draft report, incorporate changes where necessary, and deliver 12 copies of the final report within three weeks of receipt of Partnership comments. Consultant also will provide electronic copies (Microsoft Word and PDF formats) of the report within two weeks of submittal of the final report.

Task 5. Technical Expertise

The Consultant will assist the Partnership in the preparation of technical reports and "as-needed" regulatory assistance related to Permit compliance or regional regulatory activities (e.g., TMDL development, Basin Plan amendments, etc.). Sub-tasks noted as "optional" will be performed at the direction of the Partnership only if additional project funds are approved to cover the costs of these additional items.

Subtask 5.1 Prepare Notice of Water Quality Exceedances

Consultant will promptly review all CMP river and creek monitoring data and compare the results to applicable water quality standards as required by NPDES Permit provision "B. Receiving Water Limitations", and Monitoring and Reporting Program requirements I C and I D. The "water quality standards" are broadly defined in the Permit language; this is interpreted to include applicable standards, objectives and criteria within the Basin Plan, California Toxics Rule, National Toxics Rule, California Department of Health Services (Title 22), and California Department of Fish and Game (diazinon and chlorpyrifos criteria). CMP data will be delivered to the Consultant with sufficient time to prepare the analysis and letter. The Consultant will prepare a Notice of Water Quality Exceedance (NWQE) for submittal to the CVRWQCB. The Consultant will use the agreed upon evaluation process and will document this process for the inclusion in the Annual Monitoring Report. The draft letter will be submitted in an editable electronic format to the Partnership at least one week before it is due to the CVRWQCB or three weeks after the data is provided by the CMP, whichever is sooner.

Subtask 5.2 Prepare Loading Summaries

The Consultant will prepare loading summaries to assist in compliance with the Permit requirement to report "An estimate of total pollutant loads attributable to urban runoff for each monitoring station" in the 2006-07 Annual Monitoring Report (AMR). A variety of methods will be used to perform the analysis based on each constituent's data distribution, and an assessment of level-of-effort and required accuracy. The continuous simulation model used for the 2005 Discharge Characterization Report may be used for up to 10 constituents using Monte Carlo simulations of constituent concentrations. Regression models may also be considered for certain constituents.

The Consultant will submit a draft technical memorandum before July 1, 2007 that will be finalized two weeks after receiving comments from the Partnership.

Subtask 5.3 Prepare Trend Analysis

The Consultant will prepare a trend analysis to assist in compliance with the Permit requirement to report "An evaluation of the long-term trends in MS4 discharges and receiving water quality" in the 2006-07 AMR. This analysis will consist of data summaries, time series plots, and a simple regression analysis to be potentially used in the loading analysis (Subtask 5.2). The data period will be determined by the Consultant and the Partnership. As part of this subtask, the Consultant will perform "An evaluation of any correlation between target pollutants identified by the Permittees (including but not limited to metals and PAHs) and TSS loadings for the sampling events that are analyzed for the full suite of constituents", as is required in the Permit to be included in the 2007 AMR.

The Consultant will submit draft technical memorandum, combined with the Subtask 5.2 loading summaries memorandum, before July 1, 2007 that will be finalized two weeks after receiving comments from the Partnership.

Subtask 5.4 Prepare Annual Monitoring Report Sections

The Consultant will provide assistance in the preparation of the Joint Program Annual Report, due to the RWQCB by October 1, 2007. The Consultant will prepare the monitoring section and the Report of Water Quality Exceedance (RWQE) appendix of the Joint Report. The Partnership will consider and provide guidance on these sections. The schedule for delivery of these items will be determined by the Partnership before July 1, 2007. The monitoring section will follow the same general format as previous years and summarize key monitoring activities. The RWQE is prepared according to the Permit requirements. Upon a determination by either the Permittees or

the RWQCB that urban discharges are causing or contributing to exceedance(s) of a water quality standard within Sacramento-area receiving waters, and on an as-needed basis as determined by the Permittees, Consultant will prepare a Report of Water Quality Exceedance, pursuant to the procedure specified in Receiving Water Limitation B 2 of the Sacramento stormwater NPDES Permit. The report will describe BMPs that are currently being implemented and additional BMPs that will be implemented to prevent further such exceedances. The report will be in such format as decided upon in consultation with the Permittees and CVRWQCB staff.

Subtask 5.5 ROWD General Assistance

Consultant will assist the partnership, as needed, in preparing materials and for the Report of Waste Discharge that is due to the Regional Water Quality Control Board 180 days prior to the NPDES Permit "expiration" date. Assistance will be specifically requested and may include, but not limited to activities such as: performing data summaries, developing monitoring strategies, preparing or reviewing sections of the ROWD, and preparing or reviewing the submittal cover letter.

TASK 6. PROJECT MANAGEMENT

Consultant will provide project management to ensure that the project is completed on time and within budget, including project coordination and administration necessary to achieve the tasks previously described, and periodic communications with the Partnership and subcontractors. Consultant will provide qualified staff to complete all tasks as described in the preceding Scope of Services.

Consultant will schedule, prepare for and attend bi-monthly progress meetings with the Partnership to discuss progress and results of the monitoring program. Consultant will prepare an agenda and distribute to Partnership agencies in advance of each scheduled progress meeting. Consultant will produce Progress Reports as needed to keep the Partnership apprised of work progress, schedule, and budget status.

Consultant will submit a monthly invoice with detailed budget status information on a subtask basis, and a monthly written report describing project activities and expenditures during the period covered by the invoice.

ATTACHMENT 1 TO EXHIBIT B

SACRAMENTO STORMWATER QUALITY PARTNERSHIP 2006-07 MONITORING BUDGET

TASK	DESCRIPTION	LABOR HOURS				LAB COSTS [1]	OTHER DIRECT COSTS [1]	TOTALS [1]
		LWA SENIOR ADVISOR	LWA PROJECT MANAGER	PROJECT ENG./SCI.	STAFF ENG./SCI.			
1.0 MONITORING MANAGEMENT AND COORDINATION								
	<i>1.1 Preseason Preparations</i>	0	24	144	136	\$ 1,000	\$ 600	\$ 42,320
	<i>1.2 Pre-storm activities</i>	0	64	60	36	\$ 7,535	\$ 11,300	\$ 42,875
	<i>1.3 Storm activities</i>	0	96	0	16	\$ 1,164	\$ 300	\$ 20,104
	<i>1.4 Post-storm activities</i>	0	32	12	128	\$ -	\$ 4,600	\$ 26,600
	Sub TOTAL LABOR HOURS	0	120	216	300			
	Sub TOTAL COSTS					\$ 8,535	\$ 16,500	\$ 131,959
2.0 DISCHARGE CHARACTERIZATION MONITORING								
	<i>2.1 Monitoring</i>	0	0	40	160	\$ 106,414	\$ 2,200	\$ 132,814
	<i>2.2 Reporting</i>	0	36	100	80	\$ -	\$ 500	\$ 30,500
	Sub TOTAL LABOR HOURS	0	36	140	240			
	Sub TOTAL COSTS					\$ 106,414	\$ 2,700	\$ 163,314
3.0 URBAN TRIBUTARY MONITORING								
	<i>3.1 Monitoring</i>	0	0	56	220	\$ 45,016	\$ 1,200	\$ 79,636
	<i>3.2 Reporting</i>	0	40	84	180	\$ -	\$ 550	\$ 40,430
	Sub TOTAL LABOR HOURS	0	40	140	400			
	Sub TOTAL COSTS					\$ 45,016	\$ 1,750	\$ 120,066
4.0 BIOASSESSMENT								
	<i>4.1 Monitoring</i>	0	8	40	40	\$ 17,820	\$ 1,000	\$ 30,620
	<i>4.2 Reporting</i>	0	4	80	10	\$ -	\$ 200	\$ 13,650
	Sub TOTAL LABOR HOURS	0	12	120	50			
	Sub TOTAL COSTS					\$ 17,820	\$ 1,200	\$ 44,270
5.0 TECHNICAL EXPERTISE								
	<i>5.1 Prepare NIQEs</i>	2	40	120	0	\$ -	\$ -	\$ 24,840
	<i>5.2 Prepare Load Summaries</i>	2	24	96	8	\$ -	\$ 100	\$ 19,580
	<i>5.3 Prepare Trend Analysis</i>	2	24	72	8	\$ -	\$ 100	\$ 16,100
	<i>5.4 Prepare AMR Sections</i>	0	64	16	8	\$ -	\$ 300	\$ 14,740
	<i>5.5 ROWD General Assistance</i>	8	40	16	8	\$ -	\$ 50	\$ 12,050
	Sub TOTAL LABOR HOURS	14	192	320	32			
	Sub TOTAL COSTS					\$ -	\$ 550	\$ 87,310
6.0 CONTRACT MANAGEMENT								
		4	120	60	36	\$ -	\$ 150	\$ 34,870
	Sub TOTAL LABOR HOURS	4	120	60	36			
	Sub TOTAL COSTS					\$ -	\$ 150	\$ 34,870
	TOTAL LABOR HOURS	18	520	996	1,058			
	TOTAL COSTS					\$ 177,785	\$ 22,850	\$ 581,789

Notes:
 [1] Includes 10% LWA markup for lab costs and subcontractor labor

**LARRY WALKER ASSOCIATES
SACRAMENTO STORMWATER QUALITY PARTNERSHIP
MONITORING**

Rate Schedule

Effective July 1, 2006 – June 30, 2007

PERSONNEL	Rate \$/Hour	REIMBURSABLE COSTS
<i>Principals</i>		Travel:
Larry Walker	\$220 00	Local mileage • \$ 0 445 per mile
Tom Grovhoug	\$220 00	Transportation • Actual expense
Gil Wheeler	\$220 00	Auto rental • Actual commercial rate
Mack Walker	\$220 00	Fines • Actual expense
<i>Associates</i>		Room • Actual expense
Ashli Cooper Desni	\$195 00	Subsistence ⁽¹⁾ • \$46 00 per day
Tess Dunham	\$195 00	
Betsy Elzufon	\$195 00	Report Reproduction and Copying:
Robert Smith	\$195 00	• Actual outside expense
Claus Suverkropp	\$195 00	• \$0 08 per black and white copy, in-house
<i>Senior Staff</i>		• \$0 89 per color copy, in-house
Karen Ashby	\$175 00	• \$1 95 per binding, in-house
Denise Connors	\$175 00	
Brian Laurenson	\$175 00	Special Postage and Express Mail:
Stephen McCord	\$175 00	• Actual expense
Mike Troughon	\$175 00	
Eric Zeigler	\$175 00	Other Direct Costs:
<i>Project Staff</i>		• Actual expense
Kristine Corneillie	\$145 00	
Sharon Landau	\$145 00	Daily Equipment Rental Rates:
David Martinez	\$145 00	• All single parameter field meters
Chris Minton	\$145 00	(pH, EC, D.O., Turbidity) \$25 00 each
Mitch Mysliwiec	\$145 00	• Multi-parameter field meters \$35 00
Heather Ottaway	\$145 00	• Peristaltic Sampling Pump \$35 00
Shelli St Clair	\$145 00	• Professional grade GPS unit \$25 00
Dustin Bambic	\$135 00	• Digital Flow Meter \$45 00
Michael Custerline	\$135 00	• Digital Fluorometer \$45 00
Airy Krich-Brinton	\$135 00	• Multi-parameter Data Sonde \$200 00
Gonnan Lau	\$135 00	
Lindsay Whalin	\$135 00	Subcontractors:
Susan Fishel	\$125 00	Actual expense plus 10% fee
Michael Marson	\$125 00	
Kathryn Walker	\$125 00	
Chris Erichsen	\$115 00	
Tracy Krueger	\$115 00	
Rachel Terpstra	\$115 00	
Kathy Green	\$85 00	
Greg Reide	\$85 00	
Irina Fridman	\$65 00	

Note:

⁽¹⁾ Charged when overnight lodging is required. Overnight lodging will only be charged when it is cost effective compared to time and expense for return travel or mobilization of additional staff. Subcontractors are subject to the same reimbursable billing terms as Consultant.

SUBCONTRACTORS:

CDM

PERSONNEL	Rate \$/Hour
Lou Regenmorter, PM	\$157.00
Charlie O'Neill, Sr Scientist	\$140.00
Tom Titus, Sr Scientist	\$110.00
Christine Wood, Sr Contract Admin	\$104.00
Project Engineer/Scientist	\$70.00 - \$90.00
Word Processor	\$65.00 - \$80.00

PACIFIC ECORISK

PERSONNEL	Rate \$/Hour
Principal	\$165.00/hour
Program Manager	\$135.00/hour
Project (Task) Manager	\$110.00/hour
Senior Field Scientist	\$100.00/hour
Field Scientist	\$85.00/hour

Notes on Consultant Team Rate Targets

- Field work and stormwater monitoring is performed by staff scientists and engineers, however, it is sometimes necessary for more senior staff to mobilize on site for critical functions and troubleshooting of equipment. For the purposes of field monitoring tasks, field crew rates will not exceed \$150/hour (senior field staff) unless prior authority is granted by the Sacramento Stormwater Quality Partnership. Field staff (maximum \$125/hour) will primarily be used for field activities.
- Administrative tasks related to project management will be performed by each consultant project manager (\$175/hour).