

PROFESSIONAL SERVICES AGREEMENT

This Professional Services Agreement ("Agreement") is dated March 2, 2016 ("Effective Date") and is between the City of Manhattan Beach, a California municipal corporation ("City") and Geosyntec Consultants, Inc., a Florida corporation ("Contractor"). City and Contractor are sometimes referred to herein as the "Parties", and individually as a "Party".

RECITALS

A. City issued Request for Proposals (RFP) No. 1055-16 on October 9, 2015, seeking proposals for implementing the Coordinated Integrated Monitoring Program as required by the National Pollution Discharge and Elimination System Permit.

B. Contractor submitted a proposal dated November 10, 2015 in response to the RFP.

C. Contractor represents that it is fully qualified to perform such services by virtue of its experience and the training, education and expertise of its principals and employees.

D. City desires to retain Contractor and Contractor desires to serve City to perform these services in accordance with the terms and conditions of this Agreement.

The Parties therefore agree as follows:

1. Contractor's Services.

A. Scope of Services. Contractor shall perform the services described in the Scope of Services (the "Services"), attached as **Exhibit A**. City may request, in writing, changes in the Scope of Services to be performed. Any changes mutually agreed upon by the Parties, and any increase or decrease in compensation, shall be incorporated by written amendments to this Agreement.

B. Party Representatives. For the purposes of this Agreement, the City Representative shall be the City Manager, or such other person designated in writing by the City Manager (the "City Representative"). For the purposes of this Agreement, the Contractor Representative shall be Ken Susilo, Project Director (the "Contractor Representative"). The Contractor Representative shall directly manage Contractor's Services under this Agreement. Contractor shall not change the Contractor Representative without City's prior written consent.

C. Time for Performance. Contractor shall commence the Services on the Effective Date and shall perform all Services in conformance with the project timeline, attached hereto as **Exhibit A**.

D. Standard of Performance. Contractor shall perform all Services under this Agreement in accordance with the standard of care generally exercised by like professionals under similar circumstances and in a manner reasonably satisfactory to City.

E. Personnel. Contractor has, or will secure at its own expense, all personnel required to perform the Services required under this Agreement. All of the Services required under this Agreement shall be performed by Contractor or under its supervision, and all personnel engaged in the work shall be qualified to perform such Services.

F. Compliance with Laws. Contractor shall comply with all applicable federal, state and local laws, ordinances, codes, regulations and requirements.

G. Permits and Licenses. Contractor shall obtain and maintain during the Agreement term all necessary licenses, permits and certificates required by law for the provision of Services under this Agreement, including a business license.

2. Term of Agreement. The term of this Agreement shall be from the Effective Date through June 30, 2018, unless sooner terminated as provided in Section 13 of this Agreement or extended.

3. Compensation.

A. Compensation. As full compensation for Contractor's Services provided under this Agreement, City shall pay Contractor the total sum of One Million Ten Thousand Four Hundred and Ninety Six Dollars (\$1,010,496) (the "Maximum Compensation"), as set forth in the Approved Fee Schedule attached hereto as **Exhibit A**.

The City Manager shall have authority to increase the Maximum Compensation by up to twenty percent (20%); any further increase requires City Council approval.

B. Expenses. The amount set forth in paragraph 3.A. above shall include reimbursement for all actual and necessary expenditures reasonably incurred in the performance of this Agreement.

A. Additional Services. City shall not allow any claims for additional Services performed by Contractor, unless the City Council or City Representative, if applicable, and the Contractor Representative authorize the additional Services in writing prior to Contractor's performance of the additional Services or incurrence of additional expenses. Any additional Services or expenses authorized by the City Council or City Representative shall be compensated at the rates set forth in **Exhibit A**, or, if not specified, at a rate mutually agreed to by the Parties. City shall make payment for additional Services and expenses in accordance with Section 4 of this Agreement.

4. Method of Payment.

A. Invoices. Contractor shall submit to City an invoice, on a monthly basis for the Services performed pursuant to this Agreement. Each invoice shall itemize the

Services rendered during the billing period, hourly rates charged, if applicable, and the amount due. City shall review each invoice and notify Contractor in writing within ten (10) business days of receipt of any disputed invoice amounts.

B. Payment. City shall pay all undisputed invoice amounts within thirty (30) calendar days after receipt up to the maximum compensation set forth in Section 3 of this Agreement. City shall not withhold federal payroll, state payroll or other taxes, or other similar deductions, from payments made to Contractor.

C. Audit of Records. Contractor shall make all records, invoices, time cards, cost control sheets and other records maintained by Contractor in connection with this Agreement available during Contractor's regular working hours to City for review and audit by City.

5. Independent Contractor. Contractor is, and shall at all times remain as to City, a wholly independent contractor. Contractor shall have no power to incur any debt, obligation, or liability on behalf of City. Neither City nor any of its agents shall have control over the conduct of Contractor or any of Contractor's employees, except as set forth in this Agreement. Contractor shall not, at any time, or in any manner, represent that it or any of its officers, agents or employees are in any manner employees of City.

6. Information and Documents.

A. Contractor covenants that all data, reports, documents, discussion, or other information (collectively "Data") developed or received by Contractor or provided for performance of this Agreement are deemed confidential and shall not be disclosed or released by Contractor without prior written authorization by City. City shall grant such authorization if applicable law requires disclosure. Contractor, its officers, employees, agents, or subcontractors shall not without written authorization from the City Manager or unless requested in writing by the City Attorney, voluntarily provide declarations, letters of support, testimony at depositions, response to interrogatories or other information concerning the work performed under this Agreement or relating to any project or property located within the City. Response to a subpoena or court order shall not be considered "voluntary," provided Contractor gives City notice of such court order or subpoena.

B. Contractor shall promptly notify City should Contractor, its officers, employees, agents or subcontractors be served with any summons, complaint, subpoena, notice of deposition, request for documents, interrogatories, request for admissions or other discovery request, court order or subpoena from any party regarding this Agreement and the work performed thereunder or with respect to any project or property located within the City. City may, but has no obligation to, represent Contractor or be present at any deposition, hearing or similar proceeding. Contractor agrees to cooperate fully with City and to provide City with the opportunity to review any response to discovery requests provided by Contractor. However, City's right to review any such response does not imply or mean the right by City to control, direct or rewrite the response.

C. All Data required to be furnished to City in connection with this Agreement shall become City's property, and City may use all or any portion of the Data submitted by Contractor as City deems appropriate. Upon completion of, or in the event of termination or suspension of this Agreement, all original documents, designs, drawings, maps, models, computer files containing data generated for the Services, surveys, notes, and other documents prepared in the course of providing the Services shall become City's sole property and may be used, reused or otherwise disposed of by City without Contractor's permission. Contractor may take and retain copies of the written products as desired, but the written products shall not be the subject of a copyright application by Contractor.

D. Contractor's covenants under this Section 6 shall survive the expiration or termination of this Agreement.

7. Conflicts of Interest. Contractor and its officers, employees, associates and subcontractors, if any, shall comply with all conflict of interest statutes of the State of California applicable to Contractor's Services under this Agreement, including the Political Reform Act (Gov. Code § 81000, *et seq.*) and Government Code Section 1090. During the term of this Agreement, Contractor may perform similar Services for other clients, but Contractor and its officers, employees, associates and subcontractors shall not, without the City Representative's prior written approval, perform work for another person or entity for whom Contractor is not currently performing work that would require Contractor or one of its officers, employees, associates or subcontractors to abstain from a decision under this Agreement pursuant to a conflict of interest statute. Contractor shall incorporate a clause substantially similar to this Section 7 into any subcontract that Contractor executes in connection with the performance of this Agreement.

8. Indemnification.

A. Indemnity for Design Professional Services. To the fullest extent permitted by law, Contractor shall, at its sole cost and expense, protect, indemnify, and hold harmless City and its elected officials, officers, attorneys, agents, employees, designated volunteers, successors, assigns and those City agents serving as independent contractors in the role of City officials (collectively "Indemnitees"), from and against any and all damages, costs, expenses, liabilities, claims, demands, causes of action, proceedings, judgments, penalties, liens, and losses of any nature whatsoever, including fees of accountants, attorneys, or other professionals and all costs associated therewith, and reimbursement of attorney's fees and costs of defense (collectively "Liabilities"), whether actual, alleged or threatened, which arise out of, are claimed to arise out of, pertain to, or relate to, in whole or in part, the negligence, recklessness or willful misconduct of Contractor, its officers, agents, servants, employees, subcontractors, material men, contractors or their officers, agents, servants or employees (or any entity or individual that Contractor shall bear the legal liability thereof) in the performance of design professional services under this Agreement by a "design professional," as the term is defined under California Civil Code Section 2782.8(c)(2).

B. Other Indemnities.

1) Other than in the performance of design professional services, and to the fullest extent permitted by law, Contractor shall, at its sole cost and expense, defend, hold harmless and indemnify the Indemnitees from and against any and all damages, costs, expenses, liabilities, claims, demands, causes of action, proceedings, judgments, penalties, liens, and losses of any nature whatsoever, including fees of accountants, attorneys, or other professionals and all costs associated therewith and the payment of all consequential damages (collectively "Claims"), in law or equity, whether actual, alleged or threatened, which arise out of, are claimed to arise out of, pertain to, or relate to the acts or omissions of Contractor, its officers, agents, servants, employees, subcontractors, materialmen, contractors or their officers, agents, servants or employees (or any entity or individual that Contractor shall bear the legal liability thereof) in the performance of this Agreement, including the Indemnitees' active or passive negligence, except for Claims arising from the sole negligence or willful misconduct of the Indemnitees, as determined by final arbitration or court decision or by the agreement of the Parties. Contractor shall defend the Indemnitees in any action or actions filed in connection with any Claim with counsel of the Indemnitees' choice, and shall pay all costs and expenses, including all attorneys' fees and experts' costs actually incurred in connection with such defense. Contractor shall reimburse the Indemnitees for any and all legal expenses and costs incurred by the Indemnitees in connection therewith.

2) Contractor shall pay all required taxes on amounts paid to Contractor under this Agreement, and indemnify and hold City harmless from any and all taxes, assessments, penalties, and interest asserted against City by reason of the independent contractor relationship created by this Agreement. Contractor shall fully comply with the workers' compensation law regarding Contractor and Contractor's employees. Contractor shall indemnify and hold City harmless from any failure of Contractor to comply with applicable workers' compensation laws. City may offset against the amount of any fees due to Contractor under this Agreement any amount due to City from Contractor as a result of Contractor's failure to promptly pay to City any reimbursement or indemnification arising under this Subparagraph B. 2).

3) Contractor shall obtain executed indemnity agreements with provisions identical to those in this Section 8 from each and every subcontractor or any other person or entity involved by, for, with or on behalf of Contractor in the performance of this Agreement. If Contractor fails to obtain such indemnities, Contractor shall be fully responsible and indemnify, hold harmless and defend the Indemnitees from and against any and all Claims in law or equity, whether actual, alleged or threatened, which arise out of, are claimed to arise out of, pertain to, or relate to the acts or omissions of Contractor's subcontractor, its officers, agents, servants, employees, subcontractors, materialmen, contractors or their officers, agents, servants or employees (or any entity or individual that Contractor's subcontractor shall bear the legal liability thereof) in the performance of this Agreement, including the Indemnitees' active or passive negligence, except for Claims arising from the sole negligence or willful misconduct of the Indemnitees, as determined by final arbitration or court decision or by the agreement of the Parties.

C. Workers' Compensation Acts not Limiting. Contractor's obligations under this Section 8, or any other provision of this Agreement, shall not be limited by the

provisions of any workers' compensation act or similar act. Contractor expressly waives its statutory immunity under such statutes or laws as to City, its officers, agents, employees and volunteers.

D. Insurance Requirements not Limiting. City does not, and shall not, waive any rights that it may possess against Contractor because of the acceptance by City, or the deposit with City, of any insurance policy or certificate required pursuant to this Agreement. This hold harmless and indemnification provisions in this Section 8 shall apply regardless of whether or not any insurance policies are determined to be applicable to the Liabilities, Claims, tax, assessment, penalty or interest asserted against City.

E. Survival of Terms. The indemnification in this Section 8 shall survive the expiration or termination of this Agreement.

9. Insurance.

A. Minimum Scope and Limits of Insurance. Contractor shall procure and at all times during the term of this Agreement carry, maintain, and keep in full force and effect, insurance as follows:

1) Commercial General Liability Insurance with a minimum limit of Two Million Dollars (\$2,000,000) per occurrence for bodily injury, personal injury and property damage and a general aggregate limit of Two Million Dollars (\$2,000,000) per project or location. If Contractor is a limited liability company, the commercial general liability coverage shall be amended so that Contractor and its managers, affiliates, employees, agents and other persons necessary or incidental to its operation are insureds.

2) Automobile Liability Insurance for any owned, non-owned or hired vehicle used in connection with the performance of this Agreement with a combined single limit of Two Million Dollars (\$2,000,000) per accident for bodily injury and property damage. If Contractor does not use any owned, non-owned or hired vehicles in the performance of Services under this Agreement, Contractor shall obtain a non-owned auto endorsement to the Commercial General Liability policy required under subparagraph A. 1) of this Section 9.

3) Workers' Compensation Insurance as required by the State of California and Employer's Liability Insurance with a minimum limit of One Million Dollars (\$1,000,000) per accident for bodily injury or disease. If Contractor has no employees while performing Services under this Agreement, workers' compensation policy is not required, but Contractor shall execute a declaration that it has no employees.

4) Professional Liability Insurance with minimum limits of Two Million Dollars (\$2,000,000) per claim and in aggregate.

B. Acceptability of Insurers. The insurance policies required under this Section 9 shall be issued by an insurer admitted to write insurance in the State of California with a rating of A:VII or better in the latest edition of the A.M. Best Insurance Rating Guide. Self insurance shall not be considered to comply with the insurance requirements under this Section 9.

C. Additional Insured. The commercial general and automobile liability policies shall contain an endorsement naming City, its officers, employees, agents and volunteers as additional insureds.

D. Primary and Non-Contributing. The insurance policies required under this Section 9 shall apply on a primary non-contributing basis in relation to any other insurance or self-insurance available to City. Any insurance or self-insurance maintained by City, its officers, employees, agents or volunteers, shall be in excess of Contractor's insurance and shall not contribute with it.

E. Contractor's Waiver of Subrogation. The insurance policies required under this Section 9 shall not prohibit Contractor and Contractor's employees, agents or subcontractors from waiving the right of subrogation prior to a loss. Contractor hereby waives all rights of subrogation against City.

F. Deductibles and Self-Insured Retentions. Any deductibles or self-insured retentions must be declared to and approved by City. At City's option, Contractor shall either reduce or eliminate the deductibles or self-insured retentions with respect to City, or Contractor shall procure a bond guaranteeing payment of losses and expenses.

G. Cancellations or Modifications to Coverage. Contractor shall not cancel, reduce or otherwise modify the insurance policies required by this Section 9 during the term of this Agreement. The commercial general and automobile liability policies required under this Agreement shall be endorsed to state that should the issuing insurer cancel the policy before the expiration date, the issuing insurer will endeavor to mail thirty (30) days' prior written notice to City. If any insurance policy required under this Section 9 is canceled or reduced in coverage or limits, Contractor shall, within two (2) business days of notice from the insurer, phone, fax or notify City via certified mail, return receipt requested, of the cancellation of or changes to the policy.

H. City Remedy for Noncompliance. If Contractor does not maintain the policies of insurance required under this Section 9 in full force and effect during the term of this Agreement, or in the event any of Contractor's policies do not comply with the requirements under this Section 9, City may either immediately terminate this Agreement or, if insurance is available at a reasonable cost, City may, but has no duty to, take out the necessary insurance and pay, at Contractor's expense, the premium thereon. Contractor shall promptly reimburse City for any premium paid by City or City may withhold amounts sufficient to pay the premiums from payments due to Contractor.

I. Evidence of Insurance. Prior to the performance of Services under this Agreement, Contractor shall furnish City's Risk Manager with a certificate or certificates

of insurance and all original endorsements evidencing and effecting the coverages required under this Section 9. The endorsements are subject to City's approval. Contractor may provide complete, certified copies of all required insurance policies to City. Contractor shall maintain current endorsements on file with City's Risk Manager. Contractor shall provide proof to City's Risk Manager that insurance policies expiring during the term of this Agreement have been renewed or replaced with other policies providing at least the same coverage. Contractor shall furnish such proof at least two (2) weeks prior to the expiration of the coverages.

J. Indemnity Requirements not Limiting. Procurement of insurance by Contractor shall not be construed as a limitation of Contractor's liability or as full performance of Contractor's duty to indemnify City under Section 8 of this Agreement.

K. Subcontractor Insurance Requirements. Contractor shall require each of its subcontractors that perform Services under this Agreement to maintain insurance coverage that meets all of the requirements of this Section 9.

10. Mutual Cooperation.

A. City's Cooperation. City shall provide Contractor with all pertinent Data, documents and other requested information as is reasonably available for Contractor's proper performance of the Services required under this Agreement.

B. Contractor's Cooperation. In the event any claim or action is brought against City relating to Contractor's performance of Services rendered under this Agreement, Contractor shall render any reasonable assistance that City requires.

11. Records and Inspections. Contractor shall maintain complete and accurate records with respect to costs, expenses, receipts and other such information required by City that relate to the performance of the Services. All such records shall be maintained in accordance with generally accepted accounting principles and shall be clearly identified and readily accessible. Contractor shall provide free access to City, its designees and representatives at reasonable times, and shall allow City to examine and audit the books and records, to make transcripts therefrom as necessary, and to inspect all work, data, documents, proceedings and activities related to this Agreement. Such records, together with supporting documents, shall be maintained for a period of three (3) years after receipt of final payment.

12. Termination of Agreement.

A. Right to Terminate. City may terminate this Agreement at any time, at will, for any reason or no reason, after giving written notice to Contractor at least five (5) calendar days before the termination is to be effective. Contractor may terminate this Agreement at any time, at will, for any reason or no reason, after giving written notice to City at least sixty (60) calendar days before the termination is to be effective.

B. Obligations upon Termination. Contractor shall cease all work under this Agreement on or before the effective date of termination specified in the notice of

termination. In the event of City's termination of this Agreement due to no fault or failure of performance by Contractor, City shall pay Contractor based on the percentage of work satisfactorily performed up to the effective date of termination. In no event shall Contractor be entitled to receive more than the amount that would be paid to Contractor for the full performance of the Services required by this Agreement. Contractor shall have no other claim against City by reason of such termination, including any claim for compensation.

13. Force Majeure. Contractor shall not be liable for any failure to perform its obligations under this Agreement if Contractor presents acceptable evidence, in City's sole judgment, that such failure was due to strikes, lockouts, labor disputes, embargoes, acts of God, inability to obtain labor or materials or reasonable substitutes for labor or materials, governmental restrictions, governmental regulations, governmental controls, judicial orders, enemy or hostile governmental action, civil commotion, fire or other casualty, or other causes beyond Contractor's reasonable control and not due to any act by Contractor.

14. Default.

A. Contractor's failure to comply with the provisions of this Agreement shall constitute a default. In the event that Contractor is in default for cause under the terms of this Agreement, City shall have no obligation or duty to continue compensating Contractor for any work performed after the date of default.

B. If the City Manager or his delegate determines that Contractor is in default in the performance of any of the terms or conditions of this Agreement, City shall serve Contractor with written notice of the default. Contractor shall have ten (10) calendar days after service upon it of the notice in which to cure the default by rendering a satisfactory performance. In the event that Contractor fails to cure its default within such period of time, City may, notwithstanding any other provision of this Agreement, terminate this Agreement without further notice and without prejudice to any other remedy to which it may be entitled at law, in equity or under this Agreement.

15. Notices. Any notice, consent, request, demand, bill, invoice, report or other communication required or permitted under this Agreement shall be in writing and conclusively deemed effective: (a) on personal delivery, (b) on confirmed delivery by courier service during Contractor's and City's regular business hours, or (c) three business days after deposit in the United States mail, by first class mail, postage prepaid, and addressed to the Party to be notified as set forth below:

If to City:
Attn: Raul Saenz
City of Manhattan Beach
1400 Highland Avenue
Manhattan Beach, California 90266
Telephone (310) 802-5315
Email: rsaenz@citymb.info

If to Contractor:
Attn: Ken Susilo
Geosyntec Consultants, Inc.
3415 Sepulveda Boulevard, Suite 500
Los Angeles, California 90034
(310) 975-6111
ksusilo@geosyntec.com

With a courtesy copy to:

Quinn M. Barrow, City Attorney
1400 Highland Avenue
Manhattan Beach, CA 90266
Telephone: (213) 626-8484
Email: qbarrow@citymb.info

16. Non-Discrimination and Equal Employment Opportunity. In the performance of this Agreement, Contractor shall not discriminate against any employee, subcontractor or applicant for employment because of race, color, religious creed, sex, gender, gender identity, gender expression, marital status, national origin, ancestry, age, physical disability, mental disability, medical condition, genetic information, sexual orientation or other basis prohibited by law. Contractor will take affirmative action to ensure that subcontractors and applicants are employed, and that employees are treated during employment, without regard to their race, color, religious creed, sex, gender, gender identity, gender expression, marital status, national origin, ancestry, age, physical disability, mental disability, medical condition, genetic information or sexual orientation.

17. Prohibition of Assignment and Delegation. Contractor shall not assign any of its rights or delegate any of its duties under this Agreement, either in whole or in part, without City's prior written consent. City's consent to an assignment of rights under this Agreement shall not release Contractor from any of its obligations or alter any of its primary obligations to be performed under this Agreement. Any attempted assignment or delegation in violation of this Section 17 shall be void and of no effect and shall entitle City to terminate this Agreement. As used in this Section 17, "assignment" and "delegation" means any sale, gift, pledge, hypothecation, encumbrance or other transfer of all or any portion of the rights, obligations, or liabilities in or arising from this Agreement to any person or entity, whether by operation of law or otherwise, and regardless of the legal form of the transaction in which the attempted transfer occurs.

18. No Third Party Beneficiaries Intended. This Agreement is made solely for the benefit of the Parties to this Agreement and their respective successors and assigns, and no other person or entity may have or acquire a right by virtue of this Agreement.

19. Waiver. No delay or omission to exercise any right, power or remedy accruing to City under this Agreement shall impair any right, power or remedy of City, nor shall it be construed as a waiver of, or consent to, any breach or default. No waiver of any breach, any failure of a condition, or any right or remedy under this Agreement shall be (1) effective unless it is in writing and signed by the Party making the waiver, (2) deemed to be a waiver of, or consent to, any other breach, failure of a condition, or right or remedy, or (3) deemed to constitute a continuing waiver unless the writing expressly so states.

20. Final Payment Acceptance Constitutes Release. The acceptance by Consultant of the final payment made under this Agreement shall operate as and be a release of City from all claims and liabilities for compensation to Consultant for anything done, furnished or relating to Consultant's work or services. Acceptance of payment shall

be any negotiation of City's check or the failure to make a written extra compensation claim within ten (10) calendar days of the receipt of that check. However, approval or payment by City shall not constitute, nor be deemed, a release of the responsibility and liability of Consultant, its employees, sub-consultants and agents for the accuracy and competency of the information provided and/or work performed; nor shall such approval or payment be deemed to be an assumption of such responsibility or liability by City for any defect or error in the work prepared by Consultant, its employees, sub-consultants and agents.

21. Corrections. In addition to the above indemnification obligations, Consultant shall correct, at its expense, all errors in the work which may be disclosed during City's review of Consultant's report or plans. Should Consultant fail to make such correction in a reasonably timely manner, such correction may be made by City, and the cost thereof shall be charged to Consultant. In addition to all other available remedies, City may deduct the cost of such correction from any retention amount held by City or may withhold payment otherwise owed Consultant under this Agreement up to the amount of the cost of correction.

22. Non-Appropriation of Funds. Payments to be made to Consultant by City for services performed within the current fiscal year are within the current fiscal budget and within an available, unexhausted fund. In the event that City does not appropriate sufficient funds for payment of Consultant's services beyond the current fiscal year, the Agreement shall cover payment for Consultant's services only to the conclusion of the last fiscal year in which City appropriates sufficient funds and shall automatically terminate at the conclusion of such fiscal year.

23. Exhibits. Exhibit A constitutes a part of this Agreement and is incorporated into this Agreement by this reference. If any inconsistency exists or arises between a provision of this Agreement and a provision of any exhibit, or between a provision of this Agreement and a provision of Contractor's proposal, the provisions of this Agreement shall control.

24. Entire Agreement and Modification of Agreement. This Agreement and all exhibits referred to in this Agreement constitute the final, complete and exclusive statement of the terms of the agreement between the Parties pertaining to the subject matter of this Agreement and supersede all other prior or contemporaneous oral or written understandings and agreements of the Parties. No Party has been induced to enter into this Agreement by, nor is any Party relying on, any representation or warranty except those expressly set forth in this Agreement. This Agreement may not be amended, nor any provision or breach hereof waived, except in a writing signed by both Parties.

25. Headings. The headings in this Agreement are included solely for convenience of reference and shall not affect the interpretation of any provision of this Agreement or any of the rights or obligations of the Parties to this Agreement.

26. Word Usage. Unless the context clearly requires otherwise, (a) the words “shall,” “will” and “agrees” are mandatory and “may” is permissive; (b) “or” is not exclusive; and (c) “includes” or “including” are not limiting.

27. Time of the Essence. Time is of the essence in respect to all provisions of this Agreement that specify a time for performance; provided, however, that the foregoing shall not be construed to limit or deprive a Party of the benefits of any grace or use period allowed in this Agreement.

28. Governing Law and Choice of Forum. This Agreement, and any dispute arising from the relationship between the Parties to this Agreement, shall be governed by and construed in accordance with the laws of the State of California, except that any rule of construction to the effect that ambiguities are to be resolved against the drafting party shall not be applied in interpreting this Agreement. Any dispute that arises under or relates to this Agreement (whether contract, tort or both) shall be resolved in a municipal, superior or federal court with geographic jurisdiction over the City of Manhattan Beach.

29. Attorneys’ Fees. In any litigation or other proceeding by which a Party seeks to enforce its rights under this Agreement (whether in contract, tort or both) or seeks a declaration of any rights or obligations under this Agreement, the prevailing Party shall be awarded actual attorneys’ fees together with any costs and expenses in addition to all other relief to which that Party may be entitled.

30. Severability. If a court of competent jurisdiction holds any provision of this Agreement to be illegal, invalid or unenforceable for any reason, the validity of and enforceability of the remaining provisions of this Agreement shall not be affected and continue in full force and effect.

31. Counterparts. This Agreement may be executed in multiple counterparts, all of which shall be deemed an original, and all of which will constitute one and the same instrument.

32. Corporate Authority. The persons executing this Agreement on behalf of the Parties warrant that they are duly authorized to execute this Agreement on behalf of the Parties and that by their execution, the Parties are formally bound to the provision of this Agreement.

[SIGNATURE PAGE FOLLOWS]

The Parties, through their duly authorized representatives are signing this Agreement on the date stated in the introductory clause.

City:

City of Manhattan Beach,
a California municipal corporation

Contractor:

Geosyntec Consultants, Inc.,
a Florida Corporation

By: _____

Name: Mark Danaj
Title: City Manager

By:  _____

Name: Ken Susilo
Title: Project Director

ATTEST:

By: _____

Name: Liza Tamura
Title: City Clerk

APPROVED AS TO FORM:

By:  _____

Name: Quinn M. Barrow
Title: City Attorney

APPROVED AS TO CONTENT:

By: _____

Name: Bruce Moe
Title: Finance Director

EXHIBIT A
SCOPE OF SERVICES
PROJECT TIMELINE
APPROVED FEE SCHEDULE

Section 1: Letter of Transmittal



3415 S. Sepulveda Blvd., Suite 500
Los Angeles, California 90034
PH 310.957.6100
FAX 310.957.6101
www.geosyntec.com

10 November 2015

Ms. Gwen Eng
Purchasing Manager
City of Manhattan Beach
1400 Highland Avenue
Manhattan Beach, CA 90266

Subject: Response to RFP #1055-16 – Implementation of the Coordinated Integrated Monitoring Program for the Beach Cities Watershed Management Group

Dear Ms. Eng:

On behalf of Geosyntec Consultants, Inc. (Geosyntec) and EcoKai Environmental, Inc. (EcoKai), we respectfully submit this proposal to the Beach Cities Watershed Management Group (Beach Cities WMG) in response to RFP #1055-16, "Implementation of the Coordinated Integrated Monitoring Program (CIMP) for the Beach Cities Watershed Management Group" and acknowledge the receipt of all associated addenda.

Geosyntec and EcoKai, along with the assistance of Dr. John Dorsey and his team of environmental scientists at Loyola Marymount University, (the Geosyntec Team) offer the Beach Cities WMG a proven team of local experts committed to successful implementation of the approved Beach Cities CIMP. Earlier this year, Geosyntec collaborated successfully with the Beach Cities to finalize the CIMP. As a result, the Geosyntec Team is intimately familiar with the existing details of the monitoring program, the necessary steps to successfully implement the CIMP, and the process required to revise the CIMP and gain Los Angeles Regional Water Quality Control Board (Regional Board) approval. Returning Geosyntec staff members – Ken Susilo, Chris Wessel, Brandon Steets, and Megan Otto, among others – provide unparalleled continuity and expertise to the Beach Cities WMG.

In addition to breadth of experience, the Geosyntec Team supplies the Beach Cities WMG with a group of local experts whose life work is bound up in the water quality of Santa Monica Bay and Dominguez Channel. The local offices of Geosyntec and EcoKai are both located within the Santa Monica Bay Watershed. In addition, Ken Susilo, the team's Project Director (and Geosyntec's authorized representative), and Jim Burton, President of EcoKai, both make their homes in Manhattan Beach. As professionals and residents, they are committed to the well-being and environmental health of the Beach Cities WMG CIMP Area.

Finally, the Geosyntec Team proffers an undivided commitment to the Beach Cities WMG CIMP Implementation. While Geosyntec participated widely in the development of local Enhanced Watershed Management Programs (EWMPs) and CIMPs, our team is focused on one CIMP implementation project exclusively – CIMP Implementation for the Beach Cities WMG. Consequently, we offer singular focus, time, and attention.

Ms. Gwen Eng
10 November 2015
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Geosyntec welcomes the opportunity to be a consultant and partner once again to the Beach Cities WMG. If you have any questions regarding our proposal, please do not hesitate to contact us.

Very truly yours,

Geosyntec Consultants



Ken Susilo, P.E., D.WRE, CPSWQ
Project Director, Principal, Vice President
310.957.6111
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Section 2: Qualifications & Experience

The Geosyntec Team is poised to offer the Beach Cities Watershed Management Group economical expedited solutions through longstanding relationships, existing data and effective tools, and regional expertise.

Geosyntec Consultants, Inc. (Geosyntec) is a multidisciplinary engineering and consulting firm, composed of 1200 employees in 50 offices worldwide, that works with public and private sector clients to address complex problems involving the environment, natural resources, and civil infrastructure. Geosyntec understands the business of local government and its demands - strict accountability, tight budgets, hard deadlines, and responsibility to a diverse range of constituents. Since 1983, Geosyntec has served municipalities and government agencies throughout the United States, providing services in stormwater quality planning, water resources, environmental consulting, and engineering design and construction management.

Geosyntec is known for its innovative work in stormwater and surface water quality management, including Total Maximum Daily Load (TMDL) studies and Implementation Planning; watershed and stormwater quality modeling; Best Management Practice (BMP) design and assessment; water quality monitoring planning, implementation, and reporting; and development of construction, industrial, and municipal National Pollutant Discharge Elimination System (NPDES) compliance programs. Within the California stormwater practice, Geosyntec frequently leads state-of-the-practice workshops on stormwater management, NPDES requirements, and bacteria compliance strategies, studies, and modeling. Geosyntec has maintained a strong presence in Santa Monica Bay for stormwater services for over ten years.

Geosyntec Consultants is financially stable and has the necessary financial and personnel resources to provide services at the level

required by the Beach Cities Watershed Management Group (WMG). Over the past five years, Geosyntec averaged \$226 million in annual gross revenues and remains virtually debt-free. As a result of steady growth and stability, Engineering News-Record consistently ranks Geosyntec as one of the nation's top environmental design firms. Geosyntec has had a positive relationship with Citibank since 1992, and currently has a \$10 million untapped line of credit with the bank. Geosyntec's Dun & Bradstreet rating is IR3 ("good credit approval").

The following projects illustrate Geosyntec's recent experience in successfully performing services similar to those required for Coordinated Integrated Monitoring Program (CIMP) Implementation in the Beach Cities CIMP Area.

Newhall Land Monitoring and Reporting

Lead Staff:	Brandon Steets, PM; Avery Blackwell, Technical Support
Duration:	2004-present
Location:	Newhall, California
Budget:	\$1.6M

Geosyntec provides The Newhall Land and Farming Company (Newhall) with Clean Water Act regulatory support and water quality monitoring services related to their planned 12,000-acre Newhall Ranch development in Los Angeles County, California.

Geosyntec manages and implements a comprehensive NPDES surface and groundwater monitoring and reporting program, including receiving water sampling for chemical and microbiological parameters, toxicity, algae

(macroalgae biomass and percent cover, and chlorophyll a), and benthic macroinvertebrates and physical habitat and quarterly compliance reporting.

Geosyntec's stormwater-related scope includes development and implementation of a Water Quality Monitoring Plan (WQMP) – including a Sampling and Analysis Plan and Quality Assurance Plan based on Surface Water Ambient Monitoring Program (SWAMP) protocol – to evaluate potential impacts of the overall development on surface water and groundwater quality and to satisfy the storm drain and receiving water quality monitoring requirements of the Clean Water Act Section 401 Certification and Waste Discharge Requirements (Order No. R4-2012-0139). The WQMP is consistent with the Los Angeles County Municipal Separate Storm Sewer System (MS4) Permit monitoring requirements, including outfall monitoring and use of Numeric Action Levels. Geosyntec continues to interface with Los Angeles Regional Water Quality Control Board (Regional Board) staff regarding WQMP requirements, and

performs semiannual compliance reporting as required by the Order.

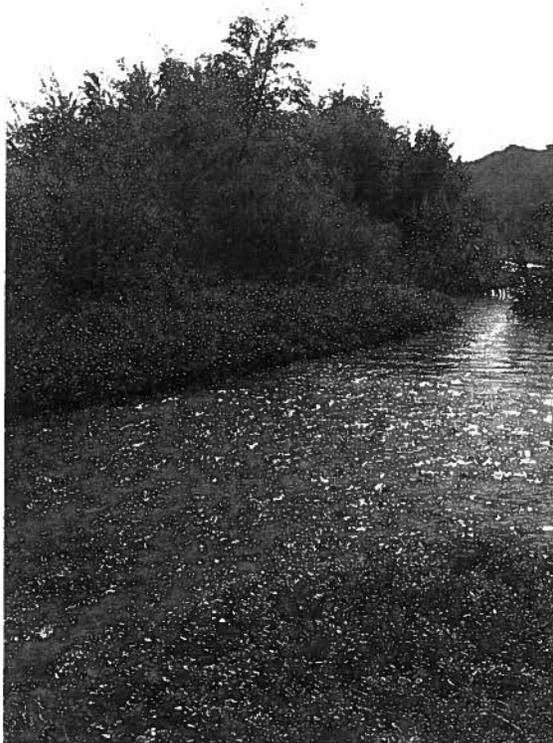
With Geosyntec's assistance, Newhall continues to meet multiple permits' compliance monitoring and reporting requirements through a highly cost efficient program, including successful negotiation of a streamlined monitoring approach with Regional Board staff. And Geosyntec's comments on draft 303(d) lists resulted in the removal of proposed listings for benthic macroinvertebrates, polychlorinated biphenyls (PCBs), and other pollutants, resulting in significant anticipated long-term cost savings.

South Bay Beach Cities EWMP and CIMP

Lead Staff: Ken Susilo, PM; Brandon Steets, Task Lead; Julie Stephenson, Task Lead; Chris Wessel, Technical Support
Duration: December 2013 - present
Location: Los Angeles, California
Budget: \$927,000

The 2012 Los Angeles MS4 Permit includes provisions that allow flexibility to achieve compliance with receiving water limitations (RWLs) and water quality based effluent limits (WQBELs) over time, Enhanced Watershed Management Programs (EWMPs) in the region. Geosyntec Consultants is leading and/or supporting EWMP development for a number of WMGs, including the South Bay Beach Cities Watersheds (as Prime Consultant).

The EWMP includes prioritization of water-quality issues, and identification of implementation strategies and BMPs that meet pertinent standards, integrate water-quality monitoring, and provide opportunities for stakeholder input. The objective is to integrate efforts to evaluate opportunities to implement multi-benefit regional projects. EWMP describes projects to improve water quality, but also regional projects that achieve benefits such as flood protection, water supply, recreation, and wildlife habitat enhancement.



Project tasks included the development of a comprehensive Work Plan, which involved a) identification of water quality priorities, b) summarizing of existing and potential control measures (structural and nonstructural BMPs), c) development of Reasonable Assurance Analysis (RAA) approach, and d) preparation of work plans. Work Plan development required analysis of monitoring data, an inventory of current practices, and the development of a numerical modeling approach that utilized the Permit-approved models Structural BMP Prioritization and Analysis Tool (SBPAT) (developed by Geosyntec) and Loading Simulation Program in C++ (LSPC).

In support of the CIMP, Geosyntec developed and/or reviewed CIMP drafts and associated technical memos. The CIMP addresses TMDL and non-TMDL monitoring elements of the MS4 Permit within the EWMP area including monitoring for: receiving waters, stormwater outfalls, non-stormwater outfalls, new development/redevelopment effectiveness tracking, and regional studies.

As part of this work, Geosyntec participated in (and presented methods to) Technical Advisory Committee (TAC)/RAA Subcommittee, EWMP Coordinators Meetings, CIMP meetings, public workshops, and a special meeting with the Regional Board on behalf of EWMP groups. Upon completion of the EWMP Work Plan and CIMP, a final EWMP will be developed.

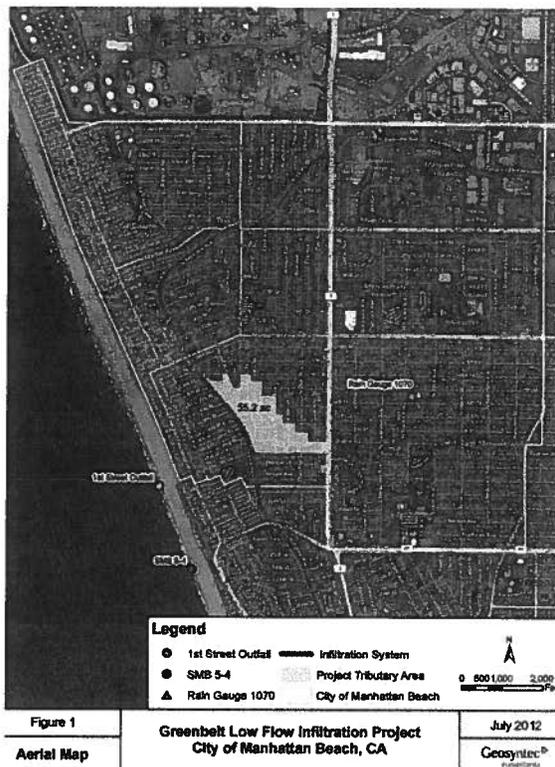
Manhattan Beach Greenbelt Monitoring

Lead Staff: Chris Wessel, PM; Megan Otto
Duration: June 2012-September 2014
Location: Manhattan Beach, California
Budget: \$85,000

The Greenbelt Low Flow Infiltration Project is located in the City of Manhattan Beach, California and is supported by Proposition 84 as part of the Agricultural Water Quality Grant Program for the purpose of matching grants for protecting beaches and coastal waters from



pollution and toxic contamination. The beaches along the City of Manhattan Beach were listed as impaired for REC-1 beneficial uses and included on the State's 303(d) list. The Greenbelt Low Flow Infiltration Project intercepted low flows and allowed them to infiltrate into the ground, thereby reducing discharge to the beach and reducing associated exceedances of the REC-1 bacteria objectives under the Santa Monica Bay Beaches Bacteria (SMBBB) Total Maximum Daily Load (TMDL). The project utilized the linear greenbelt parkland which runs through the City of Manhattan Beach to intercept and infiltrate dry weather and wet weather low flows from existing storm drains that intersect the parkway. The project served to reduce the downstream peak flow and runoff volume from the upper 55.2 acres of developed residential land uses, while also increasing groundwater recharge, and subsequently increasing the effective permeability of the developed area. Infiltrated runoff was considered a 100% reduction in bacteria load to the downstream receiving storm drain line,



which ultimately discharges at 1st Street at the Santa Monica Bay shoreline.

Geosyntec was retained by the City of Manhattan Beach to develop a detailed Monitoring Plan, stating hypotheses to be tested, desired statistical power to be achieved, number of sampling sites required, and appropriate sample timing, as well as a SWAMP compliant Quality Assurance Project Plan (QAPP) linking project objectives with data quality objectives. Geosyntec conducted wet and dry weather water quality and flow monitoring and data analysis to assess project effectiveness as compared to the project outcomes specified in the Project Assessment and Evaluation Plan. Results will be summarized in a Final Project Report for the State Water Resources Control Board.

Geosyntec has incorporated an advanced monitoring system that will allow for remote, real-time flow monitoring, thus reducing labor hours and necessary site visits.

Hermosa Pier Avenue Monitoring

Lead Staff: Megan Otto, PM; Chris Wessel
 Duration: January 2010-September 2014
 Location: Hermosa Beach, CA
 Budget: \$112,000

The Pier Avenue Improvement Project is a streetscape improvement (Green Street) designed to improve water quality at the two outfall locations along Hermosa Beach by capturing and treating stormwater and urban runoff from the Pier Avenue commercial corridor in downtown Hermosa Beach, CA. The Pier Avenue commercial corridor drains approximately 32.4 acres of urban runoff and discharges to the Santa Monica Bay. The State's 303(d) list cites the beaches adjacent to the City of Hermosa Beach as impaired due to indicator bacteria exceedances of the AB411 standards and lists Santa Monica Bay offshore/nearshore areas as impaired for debris and other pollutants. Additionally, a dry and wet weather bacteria TMDL was approved in 2002 for the Santa Monica Bay Beaches and a nearshore debris TMDL is currently in development.

To reduce downstream flooding and pollutant loading at the beach, drainage improvements were completed for the treatment and infiltration of dry-weather and wet-weather baseline flows. Baseline runoff was intercepted via a series of grate inlets along the gutter located upstream of each of the traditional side-opening storm drain inlets. Primary filtration of low flows occurred via removable fabric filter socks designed to remove trash, gross solids, and sediment. Following filtration, low flows proceed to a subsurface infiltration system where percolation into underlying sandy soil occurs, thus removing bacteria that would otherwise flow to the storm drain. Additional subsurface percolation was provided by a secondary infiltration drain and perforated pipe, located under the new landscaped bulb-outs and the median along Pier Avenue. Flows exceeding the infiltration capacity of both the primary and secondary infiltration systems bypass the grate inlets and discharge

into the new storm drain collection system via standard side opening catch basin inlets. The project was designed to treat the 1-year, 1-hour design storm to qualify as a full capture system for trash in accordance with the procedures and requirements of the Regional Board.

Geosyntec developed a Project Assessment and Evaluation Plan (PAEP) for the Regional Board and Flow Monitoring Plan to assess the performance of the drainage improvements. Continuous flow monitoring was performed over a period one year period at the end of which Geosyntec will evaluate the results from the year-long study and prepare a Final Trash TMDL Certification Report to be submitted by the City to the Regional Board.

Geosyntec coordinated with the City throughout the construction period to confirm that the selected monitoring locations and equipment would work within the confines of the final constructed configuration while also accurately characterizing project performance by targeting the most representative drainage areas. Moreover, Geosyntec developed an innovative approach to monitoring dry weather and stormflow runoff through grate inlets.

Santa Monica Bay Beaches Source Investigation, Jurisdictions 5/6

Lead Staff: Julie Stephenson, PM; Megan Otto; Ken Susilo
Duration: May 2009-May2012
Location: Los Angeles, California
Budget: \$329,000

The Santa Monica Bay Beaches Bacteria (SMBBB) TMDL Jurisdictions 5/6 (J 5/6) Source Identification and Control Project is funded and managed by agencies having jurisdiction within the J 5/6 territory. The objectives of the project were to implement the Source Control and Structural BMP aspects of Phase 1 of the J 5/6 SMBBB TMDL Implementation Plan, which focuses on High Priority Drainage Areas #1 (tributary area to 28th Street outfall) and #2 (tributary area to Herondo outfall).

Geosyntec conducted the following efforts: 1) identification and control of dry-weather bacteria sources, 2) siting and design of structural BMPs, 3) evaluation of the potential for sewer infrastructure to contribute to pollution levels, and 4) development of project concepts and evaluation of potential effectiveness using advanced hydrologic modeling. Sources of dry-weather bacteria were investigated through a comprehensive dry-weather flow reconnaissance and sampling procedure that involved the sampling of over three dry-weather periods. The first round of sampling was a comprehensive evaluation of both watersheds, whereas the second and third events were designed to focus on hot-spots identified during previous events. Geosyntec also used dry-weather monitoring results to inform source control recommendations and implementation. Geosyntec ruled out sanitary sewer infrastructure near the outfalls as a source of bacteria and worked collaboratively with key staff from multiple agencies in a workshop environment to screen potential BMP opportunity sites for constraints.



San Diego County Microbial Source Tracking

Lead Staff: Brandon Steets, PM
Duration: December 2012-November 2013
Location: San Diego County, CA
Budget: \$105,000

In response to the Bacteria TMDL for Twenty Beaches and Creeks in the San Diego Region (Resolution R9-2010-0001), the County of San Diego required TMDL special study and strategic regulatory services. The objective of the project was to develop and implement a work plan to identify County of San Diego MS4 outfalls that may be conveying human and/or other anthropogenic wastes in dry weather discharges, and to prescribe targeted remedies to abate these sources of bacteria and flow.

Geosyntec developed and implemented a first-of-its-kind MS4 Microbial Source Tracking (MST) Special Study Work Plan (Work Plan) and Quality Assurance Project Plan to: (a) identify sources of human and non-human waste to the County's MS4 in the San Diego River (SDR) and



San Luis Rey (SLR) watersheds, and (b) accumulate data to support a Natural Source Exclusion (NSE) and/or Quantitative Microbial Risk Assessment (QMRA)-based TMDL modification. The Work Plan was designed based on a hypothesis-driven and tiered investigation approach, and implements the recommended DNA markers from the United States Environmental Protection Agency (USEPA)-recognized California Microbial Source Identification Manual. An initial validation study was conducted to evaluate the proposed MST labs' comparative performance with the markers, and to evaluate cheaper chemical indicators for use as alternative surrogates or supportive lines of evidence. An iPad app was also developed to reduce time required to collect, record, and transcribe data from the field.

As a result, over 250 outfalls and 19 miles of storm drain were investigated, 4 miles of storm drain were observed via closed-circuit television (CCTV), and three homeless encampments were identified in channels above the human marker-positive outfalls. A dry weather TMDL compliance strategy was then developed, including targeted source control and structural BMP recommendations. Geosyntec was also retained to analyze the results of a San Diego reference stream study, resulting in new recommended allowed exceedance rates for consideration in the pending TMDL reopener.

Geosyntec's value-added strategic planning services are expected to result in public health protection, regulatory modification, and compliance cost savings. As a result of the project, illicit connections and leaking sewers were confirmed to be absent from the County's MS4, and the County's dry weather TMDL compliance efforts have been narrowed to a limited set of outfalls, thereby reducing program costs. This MS4 MST study has been highlighted in nationwide webcasts and reports as an "advanced case study" setting new precedent on how to design and implement such investigations.

Hermosa Beach Climate Change Study

Lead Staff: Al Preston, PM; Ken Susilo
Duration: November 2014-November 2015
Location: Hermosa Beach, CA
Budget: \$95,000

This focused infrastructure vulnerability assessment is funded in part by a Climate Ready Grant from the California Coastal Conservancy. The project will forecast how coastal shallow groundwater elevation and salinity may respond to projected increases in sea level rise in sandy, low-lying coastal soils in order to evaluate the vulnerability of existing sanitary sewer and storm drain infrastructure.

The assessment is focused on three infrastructure elements: storm drain outfalls that could be inundated at high tide and cause localized flooding; sanitary sewer collection and conveyance system; and existing and planned stormwater infiltration systems and low flow diversions designed to meet stormwater quality standards.

The potential impact of projected ranges in sea-level rise projections on drainage in the existing storm drain system will be evaluated, focusing on ocean outfalls that are currently or will be inundated at high tide. A series of six Storm Water Management Model (SWMM) model scenarios will be parameterized to reflect: existing conditions for a 10-year design storm event with and without tidal influence (the Federal Emergency Management Agency's 10-year spring tide); projected low bound sea level rise of 0.39 feet under a 10-year design storm event with and without tidal influence; and, projected upper bound of sea level rise of 2.0 under a 10 year-design storm event with and without tidal influence. Vulnerability of stormwater dry weather diversion pump wells with respect to future risk of sea water inundation will be evaluated under these scenarios.

The extent and magnitude of increases in shallow groundwater elevation and related salinity intrusion in the shallow groundwater table will be forecast utilizing groundwater monitoring and soil boring data and various sea-level rise scenarios. Sewer infrastructure in the coastal zone will be evaluated with respect to how the projected changes in groundwater elevation and salinity intrusion may affect sewer infrastructure.

Forecast groundwater level increase projections in combination with projected changes in beach width based on California Coastal Conservancy's coastal LiDAR dataset will be utilized to assess potential for diminished storage capacity in the vadose zone. This assessment will inform the long-term feasibility of stormwater infiltration in the coastal zone as a means for stormwater quality mitigation and protection of beach/ocean water quality.

Geosyntec assisted the City of Hermosa Beach in conceiving, developing and submitting a grant proposal to the California Coastal



Conservancy's competitive Climate-Ready Grant program. The proposal was customized and tailored the grant proposal to meet the City's needs, yet presented a compelling, unique project concept that demonstrated relevance on

a statewide basis consistent with the grant criteria. The Coastal Conservancy selected this project for funding along with 19 others state-wide.

Section 3: Project Approach

Because the Beach Cities EWMP relies heavily on accurate and representative monitoring results to support both adaptive management and model recalibration, the Geosyntec Team understands the importance of successful implementation of the CIMP. The Geosyntec Team, which is committed to no other CIMP implementation projects, is especially well qualified to fulfill the scope of work.

The Geosyntec Team's previous work experience leading watershed monitoring and analysis projects, both in the South Bay Beach Cities and throughout Southern California, has equipped us with the knowledge, tools, and expertise to fulfill the objectives of the provided Scope of Work at the highest level. We have developed an exceptional Team of highly qualified individuals whose familiarity with local conditions in the Santa Monica Bay and Dominguez Channel watersheds will enable us to efficiently perform the services required by the Scope of Work.

Our Team is led by Ken Susilo, Project Director, and Chris Wessel, Project Manager, whose leadership during the development of the Beach Cities CIMP and EWMP helped implement thorough yet cost-effective solutions to accomplish the specific watershed objectives as required by the Regional Water Quality Control Board. Building off this previous work, the Geosyntec Team will bring this same leadership approach to the Beach Cities Watershed Monitoring Services Project.

Geosyntec has teamed with local South Bay firm EcoKai to assist in the completion of field activities for water quality monitoring in near-

shore receiving water, storm water outfall, and non-stormwater outfall locations. EcoKai understands the complex nature of sampling during storm events and having multiple sample sites where strict EPA sampling protocol must be achieved. In addition, EcoKai personnel have worked closely with local organizations like Heal the Bay, Santa Monica Bay Foundation, and Loyola Marymount University's Center for Santa Monica Bay Studies, such that they have a detailed understanding of water quality issues facing the South Bay. EcoKai will utilize those relationships and existing knowledge within the water quality community to conduct cost effective monitoring.

For the past ten years, the Beach Cities WMG has utilized the services of Michelson Laboratories to conduct the Santa Monica Bay Beaches Bacteria TMDL weekly shoreline monitoring. Geosyntec is pleased that Michelson Laboratories will continue to complete this aspect of our scope and provide a seamless transition with this task.

Collectively, the Geosyntec Team is completely and fully committed to the successful implementation of the Beach Cities CIMP. The Team members are not committed to any other WMG CIMP monitoring activities, meaning that our entire monitoring and reporting resources will be committed to the implementation of the Beach Cities CIMP alone.

"Under the project management efforts of Ken Susilo (from kick-off to final deliverable phases)...Geosyntec not only met budget requirements, but was often able to add additional value during project execution through regulatory insights and updates on the state of the practice throughout California." - Todd Snyder, County of San Diego, Watershed Protection Program Manager

Task 1: Project Management, Communications, and Meetings

Systematic, diligent, and proactive communications are essential to managing project quality, schedule, and costs. This is particularly critical for projects like the Beach Cities CIMP Implementation, which requires significant coordination to manage numerous team members for short-notice sampling events at multiple sample locations. The Geosyntec Team, led by Ken Susilo and Chris Wessel, who led the Beach Cities CIMP and EWMP and has managed multi-million dollar water resources contracts, will provide project management services so that work deliverables are provided on or ahead of schedule and within budget.

Task 1.1: The Geosyntec Team will provide a detailed schedule to the Beach Cities WMG that outlines task deliverables to be completed and the date by which they will be completed. Due to the fact that some planned deliverables will be based on regulatory compliance deadlines, the Geosyntec Team will complete these deliverables with sufficient time for Beach Cities WMG review and subsequent revision.

The Geosyntec Team recognizes that multiple deliverables are required to be drafted immediately upon the initiation of the Project. For example, in order to complete proper source identification for significant non-stormwater discharges for designated outfalls by December 28, 2015, the outfall prioritization will need to be finalized as soon as possible. Based on our work on the Beach Cities CIMP, the Geosyntec Team is prepared to provide this prioritization within one week of Project initiation.

A draft Project schedule is included as Attachment A to this proposal.

Task 1.2: The Geosyntec Team will perform project management duties, including regular communication with the City on the state of the scope, schedule, and budget; coordination of the Project Team, WMG, and Watershed Coordination Consultant; and organization of Team coordination calls. Clear lines of

“[Geosyntec] epitomized professional dedication and the commitment to project success. Through a concerted effort to keep communication lines open and active, the Geosyntec team effectively balanced the needs and perspectives of multiple stakeholders, which was essential to a smooth process and resulted in an excellent work product” - Wing Tam, City of Los Angeles, Watershed Protection Division)

communication between the Team’s Project Manager and the single designated point of contact at the City will be important to project success, efficiency, and cost control. For cost control purposes, the Geosyntec project manager will track earned value relative to budget spent on a weekly basis throughout the Project duration to confirm that the Project stays on schedule and budget and that deviations are identified, communicated, and mitigated early. A project management plan will also be developed at project kick-off to formalize staff organization, contact information, and lines of communication; quality management procedures; and detailed scope, schedule, and budget.

Task 1.3: The Geosyntec Team will prepare for and attend quarterly meetings of the Beach Cities WMG. For quarterly meetings, Geosyntec will provide: a PowerPoint presentation, as necessary, or other relevant material; an agenda, and; meeting minutes, to be distributed to the WMG after the meeting. Since Geosyntec has been attending and leading meetings with the Beach Cities WMG for the past two years as part of the Beach Cities CIMP and EWMP Project, the Geosyntec Team is well prepared to efficiently lead these meetings.

Task 1.4: The Geosyntec Team will attend, participate in, and/or support the Beach Cities WMG in meetings with other watershed management program groups, Regional Board staff, City Councils, County staff, stakeholders, and/or other consultants as necessary to deliver the Project.

Task 1.5: The Geosyntec Team will obtain the necessary permits for access to the various

sampling locations. Based on the CIMP, it is anticipated that one encroachment/access Permit from the Los Angeles County Flood Control District (LACFCD) will be required for monitoring at outfall location OF-BCEG-7. The Geosyntec Project Manager has obtained such permits before, and is intimately familiar with not only the process required to obtain the permit, but also the notification protocol required to be followed by LACFCD. Since other monitoring locations are not expected to require entry of personnel, permitting and access requirements are expected to be minimal. Geosyntec will coordinate with respective cities to confirm that appropriate protocol is adhered to when sampling at locations within that city.

Task 1.6: The Geosyntec Team will provide a memorandum detailing activation procedures for the sampling team, which will consist of at least the following:

- A list of team members and their contact information, as well as other important contact information (e.g. traffic control, laboratory, etc.);
- Decision criteria, detailing exactly what will trigger a wet weather sampling event. This will include links to appropriate rainfall gauges and weather forecasts;
- An equipment checklist, to be used by the sampling team leader to confirm that equipment is ready to be mobilized;
- Directions to sampling points, including maps;
- Procedures to be followed by sampling team members; and
- Report forms.

Knowing how critical it will be to sample the first rain event following Project initiation, Geosyntec is prepared to deliver this memorandum within two weeks of Project initiation.

As part of this subtask, the Geosyntec Project Manager or representative will also notify the City Contact and Watershed Coordination Consultant as early as feasible prior to the

arrival of a qualifying storm event. The Geosyntec Team understands that, if possible, this notification should be made 48 hours prior to the arrival of a qualifying storm. However, the Team also recognizes that storm forecasting and prediction is an inexact science, and qualifying events can occur with little to no warning. As a result, the Geosyntec Team will implement a two-phased approach to sample mobilization and communication:

1. Any time a storm is forecasted to occur within two to seven days with a depth greater than 0.25 inches and a 50 percent or greater probability, the Geosyntec Project Manager will notify the Team, City Contact, and Watershed Coordination Consultant of the potential sampling event.
2. A "Go" or "No-Go" decision will be made between 12 and 48 hours of the potential storm event, based on the Project sampling trigger. Communication with the City Contact and Watershed Coordination Consultant during this time will be regular and timely.

Task 1.7: The Geosyntec Team will prepare a memorandum detailing the various options for monitoring equipment that may be installed or used at CIMP monitoring sites. The memorandum will include at least the following:

- An overview of potentially applicable monitoring options, including automated equipment;
- Pros and cons associated with various monitoring options;
- Timeline for installation/use of various monitoring options;
- Associated costs with various monitoring options, including permits, installation, and operations and maintenance;
- Recommendations for monitoring options at each selected site, based on the information provide.

Geosyntec has previously investigated the benefits and drawbacks of automated samplers

and will rely on this previous research to draft this memorandum.

The memorandum will also discuss the methodology to be used for sediment-borne loading of dichlorodiphenyltrichloroethane (DDT) and PCBs in stormwater outfalls. Geosyntec has participated in numerous discussions to-date on this issue and is well prepared to make a recommendation on how this sampling can be accomplished. Due to the fact that this information will be critical to confirm that outfall monitoring is accomplished appropriately, this portion of the memorandum may be extracted and presented as a separate memorandum so that items required to be completed prior to sampling won't cause an unnecessary delay.

Task 1.8: The Geosyntec Team has already verified that the laboratories used for this Project are Environmental Laboratory Accreditation Program (ELAP) certified and are fully capable of performing the water quality analyses required. Reporting and quality assurance/quality control (QA/QC) requirements will be finalized following Project initiation, and



requested information will be provided prior to the first sampling event.

Task 1.9: The Geosyntec Team will submit an exceedance notification and action plan to the Beach Cities WMG prior to the first sample event. This plan will consist of at least the following:

- Definition of a sample exceedance, including a summary of water quality standards that samples will be compared to in order to determine if an exceedance as occurred;
- The action steps that will be taken by the Geosyntec Project Manager in case a sample exceedance is identified, including immediate communication with the Beach Cities WMG and City Contact;
- The timeframe for sample analysis, exceedance identification, team communication, and follow-up actions.

Task 1.10: The Geosyntec Team will submit a memorandum that prioritizes outfalls that have previously been identified as having significant non-stormwater discharges. As discussed in Task 5 below, Geosyntec is well equipped to prepare this memorandum, having already conducted a subcatchment prioritization based on land use, receiving water conditions, and other relevant factors as part of the EWMP. Understanding that the outfall prioritization is a pre-requisite to initiate the non-stormwater source investigation, Geosyntec is prepared to provide this memorandum within a week of Project initiation, thereby allowing for maximum time to accomplish the first phase of outfall source investigation.

Task 1.11: The Geosyntec Team will prepare a letter requesting the Regional Board's approval for modifying the Approved Beach Cities CIMP, as directed by City Staff. Modifications may be necessary due to items such as:

- Removing pollutants required to be monitored;
- Modifying sampling methods;

- Altering monitoring frequencies; or
- Relocating monitoring sites.

As the consultant ultimately responsible for preparing the Approved Beach Cities CIMP, which included meetings with the Regional Board to address their comments, Geosyntec is perfectly prepared to continue to support the development of the Beach Cities CIMP.

Task 1 Deliverables

- One detailed schedule. If the schedule is altered during the course of the Project, an updated version of the schedule will also be provided, as necessary.
- Material for up to four Beach Cities WMG meetings per year.
- Material for up to four additional meetings per year.
- One monitoring mobilization plan.
- One monitoring equipment memorandum.
- All requested laboratory information, including ELAP certification and letter from lab manager certifying that protocols will be met.
- One exceedance notification and action plan.
- One outfall prioritization memorandum.
- One letter to Regional Board, at direction of City Staff, requesting approval for modifying the Approved Beach Cities CIMP.

Task 2: Health and Safety Plan, Traffic Control Plan and Encroachment Permits

Safety is a core value for Geosyntec. The Project Manager, Chris Wessel, has completed 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) training, supervisor's training, and additional internal field safety training. Professionals on the Geosyntec Team are committed to the safety of team members, subcontractors, and visitors. We require that subcontractors and visitors to the

project adopt the same commitment to safety. Project subcontractors will comply with the Geosyntec Safety Program. To enforce this policy, subcontractor agreements contain flow-down provisions of the contract requirements. Additionally, our Team will hold daily safety meetings prior to field work in addition to a project kickoff safety meeting covering various phase of field work. These meetings, combined with random safety audits and continuous evaluations, assure that the entire team maintains project safety as their top priority.

We have consistently received outstanding ratings for safety from our clients. Through a proactive approach, Geosyntec has successfully implemented a "safety-first" culture, with no major accidents occurring over the last five years. The Health & Safety Department conducts a root cause analysis of individual incidents and disseminates "lessons learned" throughout the company. This proactive approach is reflected in an Experience Modification Rate (EMR) and Recordable Incident Rate (RIR) well below the national average of 1.0 (EMR) and 2.5 (RIR), respectively. Implementing a large scale monitoring program raises a number of challenges related to the protection of employee health and safety, and the safety of Project personnel will be a top priority for the Geosyntec Team. Considering that a variety of sampling locations (including ocean locations, open channels, and manholes) will need to be accessed during wet weather, a detailed health and safety plan is absolutely critical to the success of the Project and the protection of personnel working on the Project.

Implementing a large scale monitoring program raises a number of challenges related to the protection of employee health and safety, and the safety of Project personnel on the Project will be a top priority for the Geosyntec Team. Considering that a variety of sampling locations (including ocean locations, open channels, and manholes) will need to be accessed during wet weather, a detailed health and safety plan is absolutely critical to the success of the Project

and the protection of personnel working on the Project.

Geosyntec, who requires health and safety plans for projects that include field work, will draft a Site Health and Safety Plan (SHSP), drawing upon the experiences learned from our numerous wet weather sampling events, including ongoing wet weather sampling at a project site with 24 locations. The SHSP will include information such as:

- The location of the nearest hospital and urgent care facility relative to sample sites;
- An emergency contact list;
- Safe sample procedures, including acceptable entry conditions for sample sites;
- Open water sample protocol and boat safety;
- A list of potential Project hazards (e.g. slips, trips, and falls; lifting of heavy objects; cold and heat stress; etc.) and means by which to protect against these hazards;
- As appropriate, procedures and practices for: testing, monitoring, communications, and lighting equipment; barriers and shields; ladders; and retrieval of devices;
- Additional information to confirm that work is performed in accordance with the requirements of California Occupational Health & Safety (Cal-OSHA).

The SHSP will be a "living" document, to be updated as often as is necessary to provide the most helpful and accurate information for field personnel. The Geosyntec Project Manager, who is also the Geosyntec Los Angeles Health and Safety Coordinator, will confirm that field personnel communicate any and health and safety related issues directly to him so that the SHSP can be amended promptly.

The Geosyntec Team will also prepare and submit a traffic control plan that details the

measures that will be taken to prevent sampling conducted in roadways from causing hazardous conditions for both the sampling team and automobile drivers. Geosyntec will rely on California Barricade for this traffic control plan, as well as for traffic control during sampling events. California Barricade has been providing traffic control services for over 30 years, and relies on highly trained ATSSA certified traffic control technicians to provide professional, efficient, and safe traffic control. As previously mentioned, the safety of Project personnel will be a top priority for the Geosyntec Team. California Barricade is well qualified to see that this is the case with respect to traffic hazards.

As part of this task, Geosyntec will obtain an encroachment permit and purchase a business license, if required, as a condition of the encroachment permit.

Task 2 Deliverables

- Three hard copies plus electronic copy of the Site Health and Safety Plan;
- Electronic copy of the traffic control plan.

Task 3: Receiving Water Monitoring

As described in the Permit, the primary objective of receiving water monitoring is to determine whether receiving water limitations are being achieved, to assess trends in pollutant concentrations over time (or during specified conditions), and to determine whether the designated beneficial uses are fully supported as determined by water quality analysis. According to the approved Beach Cities CIMP, sampling will be conducted for the MRP-required suite of analytical parameters to assess the impact of storm drain discharges on water quality in the Santa Monica Bay. Receiving water monitoring locations will include two (2) near-shore locations, sampled during three wet-weather events per year, and seven (7) shoreline locations, sampled weekly.

*Task 3.1: Santa Monica Bay Near-Shore
Receiving Water Monitoring*

Near-shore wet-weather monitoring in the Santa Monica Bay will be conducted at a distance of 1000 feet away from shoreline, in line with the two largest outfalls from the Beach Cities WMG. Using manual grab sampling methods, samples will be collected via boat at the point of initial dilution of the stormwater plume. Geosyntec will utilize the services of The Bay Foundation for sampling via boat, and activities will be conducted in accordance with applicable City of Los Angeles Environmental Monitoring Division (EMD) standard operating procedures. A Team Project Scientist will collect water samples at both locations during a single trip and make decisions where to sample based on surface indications of plume dispersion.

Mobilization for wet-weather monitoring will be triggered by forecasts of at least 0.25 inches of rainfall at a 70% probability at least 24 hours prior to the event and will be conducted three times per reporting year. This monitoring will target the first significant rain event of the storm year and two additional storms during the same season, sampling for parameters shown in Table 6 of the Beach Cities CIMP, including parameters in Table E-2 of the Permit during the first monitored event. Geosyntec understands that for pollutants detected above the lowest applicable water quality objective, future monitoring will be conducted at the frequency specified in the CIMP. In addition, toxicity will be monitored during the first two wet weather events; such that if an additional toxicity sample is needed it would be completed during the third sample event during each year.

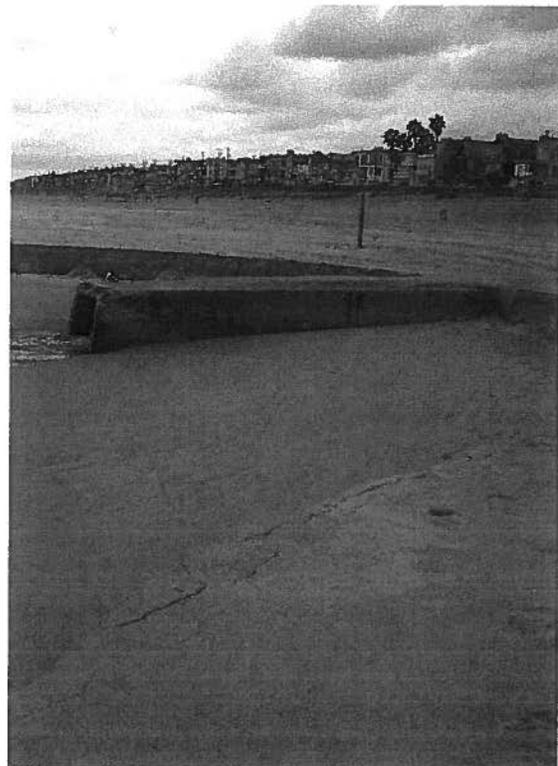
Successful wet-weather sampling is contingent on early identification of and mobilization for storms matching the criteria outlined in the Beach Cities CIMP. The Geosyntec Team will suitably identify such events in advance based on NOAA weather forecasts and will mobilize required equipment and personnel for sampling. To confirm the safety of the samplers, two members of the Geosyntec Team will be mobilized to conduct the receiving water

monitoring. The Geosyntec Team will also mobilize at the same time for stormwater outfall monitoring (Task 4) to confirm that outfall monitoring and receiving water monitoring are conducted contemporaneously.

Based on our close proximity to the Beach Cities, the Geosyntec Team can mobilize rapidly, reducing the potential for (or duration of) a false start.

*Task 3.2: Santa Monica Bay Bacteria TMDL
Shoreline Monitoring*

As per the approved Beach Cities CIMP, weekly monitoring for fecal indicator bacteria (FIB) consistent with the SMBBB TMDL will continue to be conducted at seven (7) coordinated shoreline monitoring locations. The Geosyntec Team will perform weekly bacteria monitoring at these seven sample locations on Monday mornings. Additional accelerated monitoring will be conducted on subsequent days when triggered in response to exceedance of the single-sample bacteria objectives, as described in the SMBBB TMDL Coordinated Shoreline Monitoring Plan



(CSMP). Bacterial parameters analyzed will include Total Coliform, Fecal Coliform, and Enterococcus.

Michelson Laboratories, which has been conducting this monitoring for the past ten years, will continue to provide both sample collection and analysis services as part of the Geosyntec Team. Sampling results, including the field data form, will be provided to Geosyntec by Michelson Laboratories on a weekly basis via and electronic spreadsheet.

Task 3 Deliverables

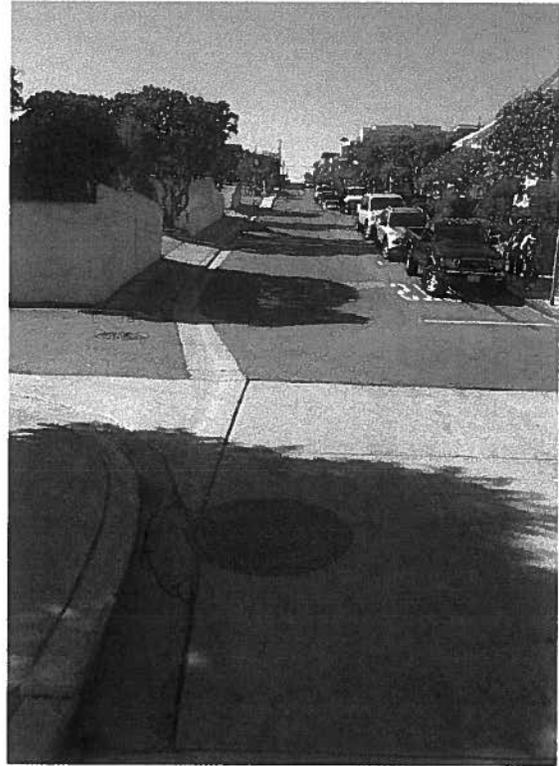
- No Task 3 deliverables, as reporting is handled under Task 6.

Task 4: Stormwater Outfall Monitoring

In addition to receiving water monitoring, stormwater outfall monitoring is a Permit requirement to assess MS4 water quality relative to receiving water quality. Results from stormwater outfall monitoring will be used not only to demonstrate compliance with water quality based effluent limitations, but also to support adaptive management and provide critical information in support of the RAA recalibration.

Seven (7) stormwater outfall monitoring sites have been selected in the CIMP, including four (4) Santa Monica Bay and three (3) Dominguez Channel locations, each representing an individual city that discharges to that watershed. The stormwater outfall monitoring site located at the Torrance Carson Lateral (OF-BCEG-7) will be monitored during the three required wet-weather events on an annual basis, while the remaining six (6) stormwater outfall monitoring sites will be monitored on an alternating annual basis, per Table 9 of the CIMP.

The Geosyntec Team will perform stormwater outfall sampling procedures as discussed in Section 4.3 of the CIMP. To guard the safety of the samplers and the sampling of four outfalls per wet weather event, four teams of two will be



mobilized to conduct manual composite sampling during events. Samples will be collected twenty minutes apart for a total of three hours at each selected monitoring site, resulting in a total of ten discrete samples per site. These ten samples will be combined into a single composite sample for lab analysis.

Monitored constituents at each selected outfall will include those prescribed in Table 17 of the CIMP, as well as additional parameters identified in the paired downstream receiving water sample site. The Geosyntec Team will also monitor for aquatic toxicity, as necessary, in accordance with the Memorandum from Samuel Unger, Executive Officer, Los Angeles Regional Water Quality Control Board, dated August 7, 2015. Five in-situ measurements will also be taken by the sample teams: flow, pH, dissolved oxygen, temperature, and specific conductivity.

Task 4 Deliverables

- No Task 4 deliverables, as reporting is handled under Task 6.

Task 5: Non-Stormwater Outfall Monitoring

Non-stormwater outfall monitoring is critical to dry weather compliance, and the effective demonstration of the elimination of non-stormwater discharges could save significant money related to the implementation of costly BMPs/diversions at some locations. A successful non-stormwater outfall screening, source identification, and monitoring program is therefore a critically important part of the Beach Cities watershed management program.

Non-stormwater outfall monitoring sites that are found to have significant discharges as determined by the Beach Cities WMG screening effort will be investigated for source identification following the CIMP procedures. Outfalls with significant non-stormwater discharge will be prioritized for source identification (as outlined in section 5.4 of the Approved Beach Cities CIMP and described below). Source identification will then be conducted (in accordance with Section 5.5 of the Approved Beach Cities CIMP and described below). Results of the source identification will be interpreted based on the non-stormwater source types outlined in the CIMP, and recommendations will be made accordingly. Significant non-stormwater discharges of unknown origin will be sampled by collection of manual grab samples for two events per year in coordination with downstream receiving water dry-weather monitoring.

The Geosyntec Team will develop a protocol prioritizing outfalls identified as having significant non-stormwater discharge. Outfalls will be ranked for further source investigations based on the following criteria:

- Outfalls discharging directly to a receiving waterbody with water quality based effluent limitations or receiving water limitations for which final compliance deadlines have passed (e.g. Santa Monica Bay Beaches Bacteria TMDL for Dry Weather).

- Major outfalls and other outfalls that discharge to a receiving water subject to a TMDL will be prioritized according to TMDL compliance schedules.
- Outfalls for which monitoring data exist and indicate recurring exceedances of one or more of the Action Levels identified in Attachment G of the Permit
- All other major outfalls identified to have significant non-stormwater discharges.
- Additional criteria that may be incorporated:
 - Rate of discharge based on visual flow observation;
 - Drainage area to outfall and/or size of outfall;
 - Tributary land uses and subcatchment prioritization results from the EWMP;
 - Odor, color, and clarity of discharge;
 - Results of field measurements of pH, temperature, dissolved oxygen, and electrical conductivity;
 - Presence of flow in the receiving water.

This prioritization protocol will be developed and implemented immediately to confirm time remains to implement the source identification protocol. In order to speed this process forward as quickly as possible, the Geosyntec Team will prioritize outfalls within one week of receiving results. Since Geosyntec previously analyzed and prioritized subcatchments in the Beach Cities CIMP Area based on many of the factors above, the Team has a head start on the outfall prioritization.

5.1.1: Conduct Source Investigation of Outfalls with Significant Discharge

Geosyntec will conduct a source investigation of outfalls with significant non-stormwater discharge in accordance with the procedures and schedule approved by the Beach Cities WMG. A successful source investigation program is important since results from the investigation could reduce costs related to implementation and monitoring.



The source investigation will include a desktop screening and field assessments in order to attempt to identify the source(s) of non-stormwater flows.

- The desktop screening will determine the catchment area for each selected outfall and related tributary land uses. Manholes will be identified for potential video investigation.
- The desktop screening will look at previously collected field data, if available, to support the characterization of flow.
- The field component will consist of a visual assessment for outfalls discharging to Dominguez Channel to determine if flows originate within the boundaries of the EWMP group. If an outfall in Dominguez Channel is observed to be discharging but visual observation shows that flows are not present within the Beach Cities WMG, no further investigation should be required.

If this initial screening is inconclusive, additional source identification will be conducted using video investigation tools or other appropriate techniques to track the dry-weather flow upstream until the source can be identified.

Upon completion of the source investigation, flows will be classified into the following types:

- IC/IDs: if the source is determined to be an illicit connection or discharge.
- Authorized or conditionally exempt non-stormwater discharges
- Natural flows
- Unknown sources.

A memorandum identifying the source(s) of the discharge and recommendations for the next step(s) will be submitted by the Geosyntec Team within thirty days of completion of the source investigation. The memorandum will summarize the results of the field screening and source investigation for each selected significant non-stormwater discharge outfall, categorizing the discharge per the categories outlined above. The memorandum will make follow-up action recommendations for the Beach Cities WMG based on the results.

Task 5.1.2: Source Investigation, Phase 1

Geosyntec will complete the first phase of the source investigation for 25% of the outfalls with significant discharge no later than December 28, 2015 (as required by the MS4 Permit). This will include the outfall associated with Observation Site O-7. The memorandum will be submitted to the Beach Cities WMG within 30 calendar days after completion of the source investigation (i.e. January 27, 2016).

Task 5.1.3: Source Investigation, Phase 2

Geosyntec will complete the second phase of the source investigation for 25% of the outfalls with significant non-stormwater discharge no later than December 28, 2016 (as required by the MS4 Permit). The associated memorandum will be submitted to the Beach Cities WMG within 30 calendar days after completion of the source investigation (i.e. January 27, 2017).

Task 5.1.4: Source Investigation, Phase 3

Geosyntec will complete the third phase of the source investigation for the remaining 50% of the outfalls with significant non-stormwater discharge no later than December 28, 2017 (as required by the MS4 Permit). The associated memorandum will be submitted to the Beach Cities WMG within 30 calendar days after completion of the source investigation (i.e. January 27, 2018).

Task 5.1.5: Outfall Site Monitoring

Outfalls with significant non-stormwater discharges that remain unaddressed after the source investigation will be monitored, unless the flow is determined to be authorized or conditionally exempt. Monitoring will seek to begin within 90 days of completing the source identification, but may begin at a later time in order to be coordinated with dry weather receiving water monitoring.

The Geosyntec Team will collect and analyze monitoring data at those non-stormwater outfall sites determined to require monitoring. The monitoring parameters and procedures will follow the Approved Beach Cities CIMP. Geosyntec will submit a post-event memorandum within 30 calendar days of a non-stormwater outfall monitoring event. Significant non-stormwater outfall monitoring sites will be sampled by collection of grab samples for two events per year in coordination with downstream receiving water dry-weather monitoring. Non-stormwater outfalls with significant flow will be monitored for required constituents, per receiving water bodies, as outlined in Part IX.G.1.a-e of Attachment E of the Permit, except toxicity. A summary of the constituents to be monitored by watershed is listed in Table 19 of the CIMP.

Since grab samples are considered sufficient to characterize non-stormwater flows, it is assumed that a single team of two personnel will be able to monitor outfalls required to be monitored.

Task 5.2: Toxicity Monitoring

The Geosyntec Team will conduct toxicity monitoring for non-stormwater outfalls when triggered by external receiving water monitoring data in conformance with the guidance provided by the Regional Board. Toxicity monitoring is only required when triggered by recent receiving water toxicity monitoring where a Toxic Identification Evaluation (TIE) on the observed receiving water toxicity test was inconclusive.

Task 5.3: Database Updating

The Geosyntec Team will incorporate the inventory of MS4 Outfalls with non-stormwater discharges into the GIS database of MS4 storm drains, channels, and outfalls that was prepared as part of the CIMP. Geosyntec helped develop this database and can therefore readily and efficiently maintain the required updates. Updates to this database are required to occur at least annually, prior to June 30th, for reporting purposes. However, Geosyntec will update the database as often as new data, including completed field data sheets from initial outfall screening events along with photographs of outfall conditions at the time of screenings, is received.

Task 5 Deliverables

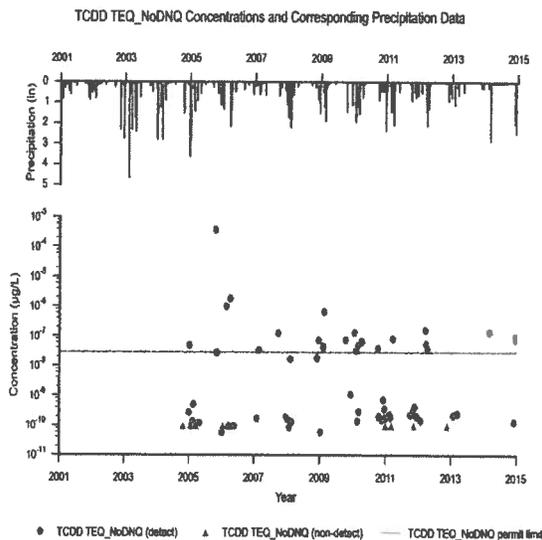
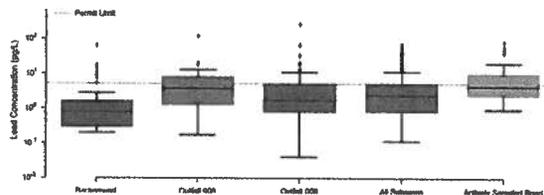
- Three source identification technical memoranda, one per phase of source identification.
- Six post-event sampling memoranda (two per year) summarizing the results of the non-stormwater monitoring.
- Annual updates of the MS4 Outfall GIS database.

Task 6: Data Assessment and Reporting

Task 6.1: Monitoring Records

Through previous and ongoing TMDL monitoring plan implementation projects, Geosyntec has accumulated significant expertise developing automated data management and visualization toolboxes to expedite monitoring record submission processes. These toolboxes will help Geosyntec efficiently generate monitoring records summarizing the chains of custody, monitoring event background information, field measurements, laboratory analyses and associated QA/QC data, and narrative on corrective actions, if deemed necessary.

The Geosyntec Project Manager will keep track of monitoring records, confirming that records are sent to the City Contact within 14 days following the end of a wet-weather sample event. To meet this requested turnaround, lab analyses will be expedited.



Task 6.2: SMBB TMDL Shoreline Monitoring Weekly and Monthly Data Submittal

Geosyntec will take the responsibility of summarizing SMBBB TMDL Shoreline monitoring data received from Michelson Laboratory. Upon receiving the existing Access database from the City of Redondo Beach, Geosyntec will continue importing received data and generating weekly and monthly reports with the same format as the examples provided in Attachments 8 and 9 of the RFP.

Task 6.3: Semi-Annual Data Submission

Geosyntec will lead the effort of preparing a Semi-Annual Data Report in compliance with requirements specified in the Permit. Given our leading role in preparing the Beach Cities CIMP and EWMP, Geosyntec is familiar with applicable water quality objectives associated with the Beach Cities WMG. Consequently, Geosyntec will focus on evaluating monitoring data against municipal and regional water quality objectives for applicable pollutants. Exceedances will be readily identified in semi-annual reports.

Data will be provided in both Stormwater Monitoring Coalition (SMC) and California Environmental Data Exchange Network (CEDEN) formats. Geosyntec is familiar with these data formats, having used them on previous projects.

Task 6.4: External Data Assessment

Three external data sources have been identified in the RFP. The Geosyntec Team will incorporate received data into the existing database for Task 6.2. External data will be analyzed to evaluate the overall water quality of the various receiving water bodies in question, but also to help shed light on the Beach Cities impact on receiving water quality.

External data will be analyzed to evaluate the overall water quality of the various receiving water bodies in question, but also to help shed light on the Beach Cities impact on receiving water quality.

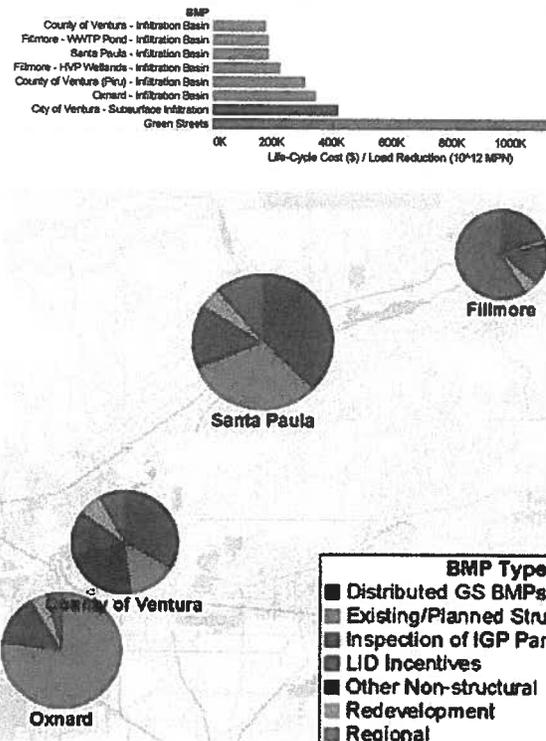
Since receiving water sample results will be used to establish what parameters will be analyzed at the upstream outfalls, coordination with the various external agencies will be required. The Geosyntec Project Manager will initiate this coordination to confirm that sample results are provided to Geosyntec as soon as possible.

Task 6.5: Annual Integrated Monitoring Compliance Report

Geosyntec will lead the effort of preparing the Annual Integrated Monitoring Compliance Report (IMCR) in compliance with requirements specified in the Beach Cities CIMP. An Excel spreadsheet will be prepared to summarize internal and external monitoring analyses and associated meta data collected over the past reporting year. The IMCR will summarize monitoring data and identify exceedances against applicable monthly average permit limitations (MALs), receiving water limitations, WQBELs, non-stormwater action levels, and aquatic toxicity thresholds for dry- and wet-weather receiving water monitoring, and stormwater and non-stormwater outfall monitoring. For any identified exceedance, Geosyntec will recommend corrective actions to control discharges causing exceedances. Given our expertise in implementing monitoring plans and our familiarity with the Beach Cities CIMP and EWMP, Geosyntec will select appropriate corrective actions to address pollutants of concern, and verify the remediation's effectiveness with follow-up monitoring, as necessary. If aquatic toxicity is confirmed based on monitoring data, Geosyntec will conduct a TIE to identify the toxic chemicals, and include relevant data for the Regional Board to review the adequacy and findings of the TIE.

Task 6 Deliverables

- Three wet-weather monitoring record summaries, per year (Note: dry-weather monitoring records are covered by the dry-weather monitoring memorandum detailed in Task 5).

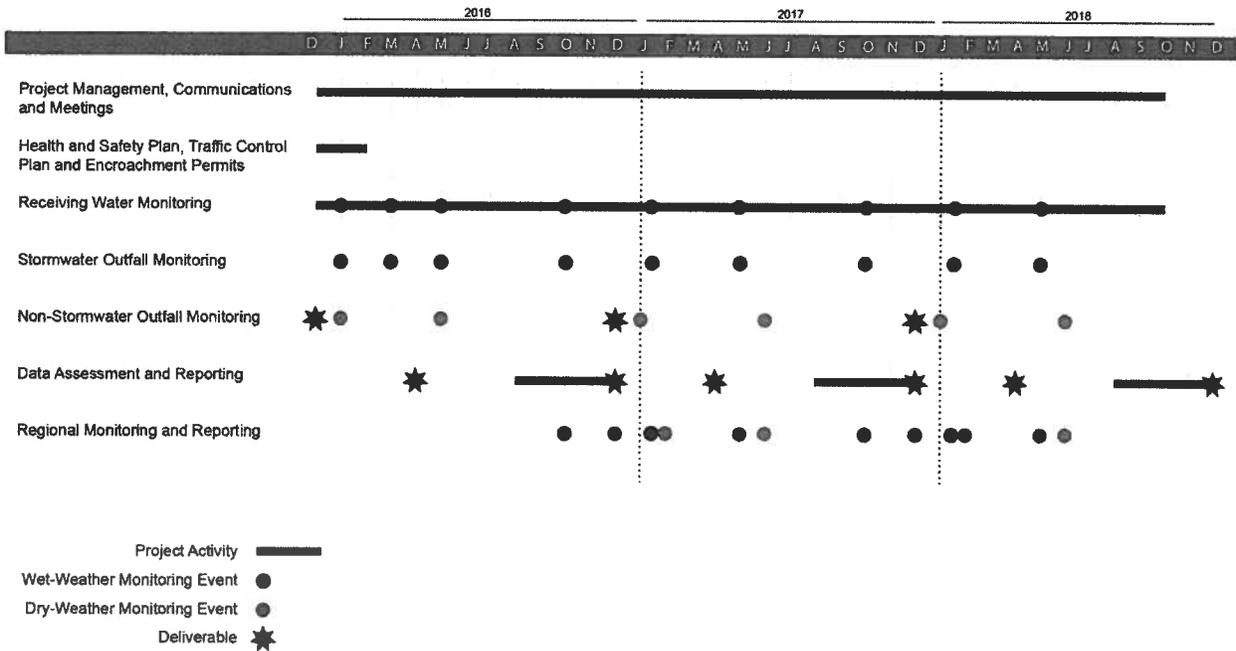


- 52 weekly SMBBB TMDL shoreline monitoring data submittals, per year.
- 12 monthly SMBBB TMDL shoreline monitoring data submittals, per year.
- Two Semi-Annual Data Reports, per year.
- One (draft and final) Annual Integrated Monitoring Compliance Report, including a Municipal Action Level Assessment Report and data summary spreadsheet.

Section 4: Project Timeline

The following schedule assumes project initiation by the end of November 2015 and duration of three years of service. The same schedule has the capability to be extended for an additional two years.

Monitoring events depicted in the schedule should not be interpreted as occurring on the exact date shown. Rather, individual monitoring events shown signify the existence of a monitoring event during the span of months to which it is attached.



Section 5: Assumptions

General

All memoranda and reports, unless otherwise specified, include one round of review from the Beach Cities WMG, with consolidated electronic comments provided to Geosyntec to be incorporated into the final version.

All sampling is assumed to be conducted during daylight hours, Monday – Friday.

Direct costs related to permitting - including permit fees, lane closure fees, traffic plan check fees, and business license fees – are assumed to not exceed \$1,500 per year.

For cost estimation purposes, it is assumed that zero false starts will occur for wet weather monitoring.

Receiving Water Monitoring

Two (2) near-shore receiving water monitoring sites are assumed to be monitored during three (3) wet-weather events, per year.

All Table E-2 parameters are assumed to be analyzed during the first wet-weather monitoring event at each selected near-shore receiving water monitoring location. Following this first event, it is assumed that the Table E-2 parameters analyzed at each selected location will result in a lab cost equivalent to 25% of the cost to analyze Table E-2 parameters.

Three (3) wet-weather aquatic toxicity samples are assumed per year at each selected near-shore receiving water monitoring location.

Two (2) toxicity identification evaluations (TIEs) are assumed per year at each selected near-shore receiving water monitoring location.

Boat captain will be responsible for assessing open ocean water conditions to guard the safety

of Geosyntec Team personnel prior to mobilization from the harbor.

SMBBB TMDL Shoreline Monitoring is assumed at seven (7) sample locations. Labor includes site observations at sample locations as well as eight (8) storm drain outfalls. Collection includes use of a 4x4 vehicle and a trained technician based on City requirements for access and driving on City beach property. No weekend or holiday surcharges are included in the cost proposal.

A total of sixteen (16) repeat sample events are assumed for the SMBBB TMDL Shoreline Monitoring per year.

No permitting is assumed to be required for receiving water monitoring.

Stormwater Outfall Monitoring

Four (4) outfalls are assumed to be monitored during three (3) wet-weather events, per year.

It is assumed that the Table E-2 parameters analyzed at each selected outfall monitoring location during wet-weather will result in a lab cost equivalent to 25% of the cost to analyze Table E-2 parameters.

Three (3) wet-weather aquatic toxicity samples are assumed per year at each of two (2) selected outfall monitoring locations.

No TIE analyses are assumed for outfalls.

Traffic control from California Barricade is assumed at three locations (OF-BCEG-2, OF-BCEG-5, and OF-BCEG-6). Other traffic control is assumed to be minor (i.e., not requiring lane closure), and will be provided by the Geosyntec Team.

A LACFCD encroachment/access permit is assumed to be necessary for monitoring at OF-

BCEG-7. The cost for obtaining this permit assumes a single submittal of relevant data to LACFCD; a re-submittal of data based on LACFCD comments; a single trip to LACFCD field offices; and a permitting fee of \$250. It is assumed that an access key will be provided by LACFCD.

Non-Stormwater Outfall Monitoring

Three (3) outfalls are assumed to require monitoring twice per year due significant non-stormwater discharges.

Of the three outfalls, two (2) are assumed to be within the Santa Monica Bay Watershed and one (1) is assumed to be within the Dominguez Channel Watershed.

It is assumed that the Table E-2 parameters analyzed at each selected outfall monitoring location during dry-weather will result in a lab cost equivalent to 25% of the cost to analyze Table E-2 parameters.

Two (2) dry-weather aquatic toxicity samples are assumed per year at each of two (2) selected outfall monitoring locations.

Due to the numerous unknown variables related to source tracking (e.g. length of storm drain, number of storm drain branches, number of flow sources, etc.), no direct costs related to vendor services for this task have been included in this cost proposal. Given the importance of locating the source(s) of significant non-stormwater discharges, available methodologies will be discussed with the Beach Cities WMG following the desktop screening and initial field screening.

Traffic control by California Barricade is assumed to not be required for non-stormwater outfall monitoring and source investigation.

Section 6: References

1

The Newhall Land and Farming Company
Matt Carpenter, Director of Environmental Resources
661.255.4259
mcarpenter@newhall.com
Newhall Land Monitoring and Reporting
2004-Present
Brandon Steets, PM

2

City of Lawndale
Frank Senteno, Director of Public Works
310.973.3260
N/A
Hermosa Pier Avenue Monitoring
January 2010-September 2014
Megan Otto, PM

3

McGowan Consulting
Kathleen McGowan
310.213.4979
kathleen.enve@verizon.net
South Bay Beach Cities EWMP and CIMP*
December 2013 - Present
Ken Susilo, PM

*Ms. McGowan contributed to the South Bay Beach Cities EWMP and CIMP while an employee of Geosyntec. She now runs a private consulting business.

Geosyntec Consultants has been supporting Newhall on TMDL, monitoring, and NPDES issues since 2003. Under the leadership of Brandon Steets, they have provided high value services that are prompt, within budget, and at an exceptional level of quality. Their work has included strategic regulatory guidance, TMDL and 303(d) review and comment, surface water monitoring planning, water quality sample collection, NPDES permitting, and watershed modeling of the Upper Santa Clara River. We have been extremely satisfied by their technical performance, project management, and professionalism. -Matt Carpenter, Director, Environmental Resources, Newhall Land

Section 7: Management Structure

Geosyntec is an employee owned corporation with over 250 shareholders. Geosyntec's current top shareholders and corporate officers are as follows:

President/CEO and Chairman of the Board

Rudy Bonaparte
2002 Summit Blvd. NE, Suite 885
Atlanta, GA 30319
Phone: 404.267.1101
Fax: 404.267.1102

Executive Vice President

Thierry Sanglerat
2100 Main Street, Suite 150
Huntington Beach, CA 92648
Phone: 714.969.0800
Fax: 714.969.0820

Chief Financial Officer

Jon Dickinson
900 Broken Sound Pkwy NW, Suite 200
Boca Raton, FL 33487
Phone: 561.995.0900
Fax: 561.995.0925

Since its inception in 1983, Geosyntec has employed a classic business management structure organized around a Board of Directors, a President/Chief Executive Officer, a Chief Financial Officer, an Executive Committee, and regional and satellite offices. Each region of the firm is led by a responsible Principal who reports to a member of the Executive Committee. Corporate business support services, including accounting, human resources, and information technology, are primarily concentrated in Boca Raton, Florida.

Board of Directors

Geosyntec's Board of Directors is comprised of eight employee shareholders from within the firm, six of whom are elected by the

shareholders for three-year terms. Elections to the Board occur at the annual Shareholders Meeting each August. In addition, there are two one-year term positions appointed by the Board. Two full term positions are elected each year. The Board also elects its chairman from within its membership annually. The principal functions of the Board are to represent the approximately 250 employee-shareholders of Geosyntec, establish the strategic direction of the firm (through preparation of the firm's strategic plan), appoint the President/CEO, and monitor the performance of the President/CEO and Executive Committee in implementing the strategic plan.

CEO

Each year, the Board of Directors appoints a President/CEO at the Board's annual meeting in August. The President/CEO in turn appoints members of the Executive Committee.

Executive Committee

The Executive Committee, appointed by the CEO, is responsible for implementing the firm's strategic plan, running the day-to-day operations of the business, and achieving the firm's performance goals

Project Management

During each phase of the Beach Cities CIMP, Geosyntec will apply project management and technical skills to control cost and meet schedule milestones. To facilitate effective scheduling and cost control, Geosyntec has an internal project management training program led by a registered project management professional to confirm that project managers have the specialized training required to effectively manage projects, control costs, meet schedule milestones, and to ultimately provide customer satisfaction.

The success of a project rises and falls with communication. Geosyntec prides itself on its ability to maintain effective communication with our clients. Projects rarely run exactly as planned, but effective communication can help to avoid those issues from derailing schedule or budget. Regular status reports during the course of the project (e.g. weekly email, monthly memo, etc.) will be critical to keeping the Beach Cities WMG up to date on project progress and identifying any issues or constraints. The

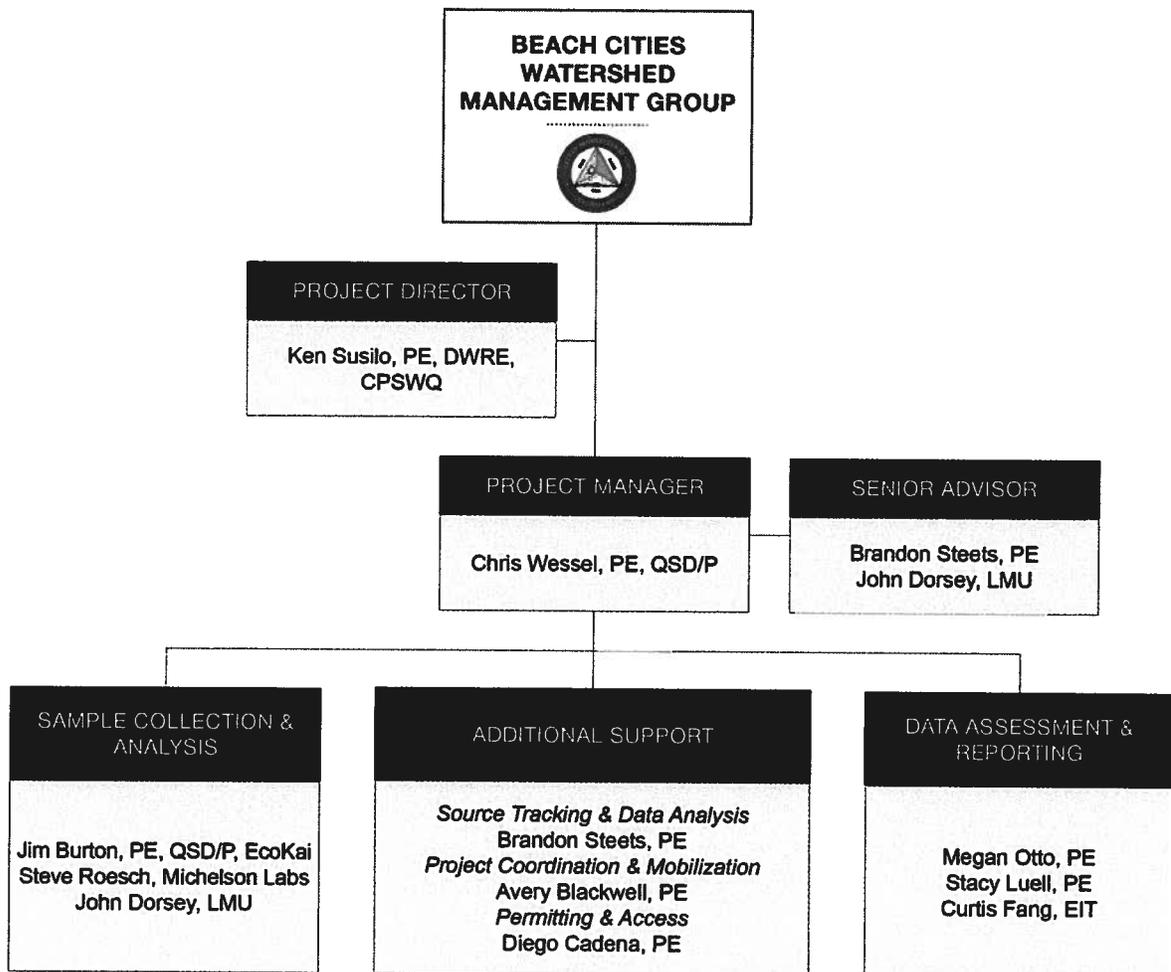
Geosyntec Team will endeavor to provide open communication channels so that the Beach Cities WMG is continuously up to date with project information or updates. Our Project Manager, Chris Wessel, will be the focal point for project communication, coordination, and administration for each component of the contract work. This will give the Beach Cities WMG a consistent contact representing the Geosyntec Team.

Section 8: Consultant Team

The Geosyntec Team is structured to provide the City with unparalleled local leadership and superior expertise in water quality monitoring, sampling, and analysis.

As Project Manager, Chris Wessel, P.E., will act as the primary point of contact for the City. Mr. Wessel will manage personnel on the Geosyntec Team. In order to move the project forward in an expeditious manner, he will personally work to implement the City's project goals, project schedule, and budget. Finally, Mr. Wessel will oversee project scope completion and quality.

Mr. Wessel played a vital role in drafting the Beach Cities EWMP as well as reviewing and finalizing the South Bay Beach Cities CIMP. His project experience also includes dry and wet weather field sampling. As a result, Mr. Wessel is well equipped to provide the City with outstanding leadership.



Availability

The Geosyntec Team brings an undivided commitment to the Beach Cities WMG CIMP Implementation. Geosyntec participated widely in the development of local Enhanced Watershed Management Programs (EWMPs) and CIMPs but has elected to focus exclusively on one CIMP implementation project – the Beach Cities WMG CIMP Implementation. Geosyntec Team members are fully committed to making themselves available to the Beach Cities WMG for the duration of implementation of the CIMP, including the two optional one-year renewal terms. Thus, the Geosyntec Team offers singular focus, flexibility, time, and attention to the Beach Cities WMG.



KEN J. SUSILO, P.E., D.WRE, CPSWQ

**Integrated water resources
watershed management and water quality**

EDUCATION

M.S., Civil Engineering, University of California, Berkeley, CA 1991

B.S., Civil Engineering, University of California, Berkeley, CA 1990

REGISTRATIONS AND CERTIFICATIONS

Professional Civil Engineer, California, No. C51194

Certified Professional in Storm Water Quality, No. 0086

Diplomate, Water Resources Engineer, No. 00281

CAREER SUMMARY

Ken Susilo, PE, D.WRE, CPSWQ is a Professional Engineer, Diplomate Water Resources Engineer, and Certified Professional in Water Quality. He has over 24 years of experience in planning, permitting, engineering design, hydraulics, hydrology, computer modeling, storm water management, and integrated water resources.. He has also served as an Expert Witness in cases involving storm water, hydrology, flooding, sediment fate and transport, and water quality. He served on ASCE Report Card committees for Orange County, Los Angeles County, and the State of California. In 2006, Susilo was recognized as the ASCE Outstanding Civil Engineer in the Private Sector by the Los Angeles Section and ASCE Region 9 (State of California). In addition to his technical and managerial leadership of a wide range of public and private water resources projects, Mr. Susilo has served as a technical reviewer (in progress) for the *Design of Urban Stormwater Controls* (multiple chapters) Manual of Practice MOP 23, 2nd edition Water Environment Federation; is a Peer Reviewer for the *Journal of Irrigation and Drainage* ASCE; and has over 40 technical papers and/or conference presentations/workshops. He recently served on the Water Environment Federation Stormwater Steering Committee, co-chairing the subcommittee for Technical Excellence. Mr. Susilo is the Managing Principal of Geosyntec's Los Angeles office and recently served on Geosyntec Consultants' Board of Directors.

Litigation/Forensic Support

Expert Witness and Litigation Support, Los Angeles County, CA. Principal Investigator and Expert for case involving alleged Clean Water Act and NPDES permit violations (Santa Monica Baykeeper and Natural Resources Defense Council, v. City of

Malibu; US District Court Case No. CV 08-1465; settled). Provided deposition testimony and participated in settlement negotiations.

Watershed Management and Water Quality

Southbay Beach Cities Enhanced Watershed Management Program (EWMP & CIMP). Los Angeles County, CA. Project Manager for the Enhanced Watershed Management Program (EWMP) for the Cities of Redondo Beach, Manhattan Beach, Hermosa Beach, Torrance, and the Los Angeles County Flood Control District. Tasks include identification of priorities and approaches, development of EWMP Work Plan, Comprehensive Integrated Monitoring Plan (CIMP), and final EWMP including a Reasonable Assurance Analysis, in conformance with the December 2012 Los Angeles MS4 Permit and RWQCB technical guidance.

Santa Monica Bay Beaches TMDL Jurisdictional Groups 5&6, Implementation and Monitoring Studies, for Cities of Redondo Beach, Manhattan Beach, Hermosa Beach, and Torrance, CA. Project Director for the Structural BMP Siting and Conceptual Design Study; Dry Weather Source Characterization and Control Summary; and Influence of Sewer Infrastructure on Bacteria Concentrations at SMB-5-2 and SMB-6-1.

Santa Monica Bay Enhanced Watershed Management Program (EWMP). Los Angeles County, CA. Technical Project Manager/Director for the EWMP for the Cities of Los Angeles, El Segundo, and Santa Monica; County of Los Angeles, and Los Angeles County Flood Control District (Jurisdictional Groups 2, 3, and 7). Tasks include identification of priorities and approaches, development of EWMP Work Plan, and final EWMP including an RAA.

North Santa Monica Bay Coastal Watersheds Enhanced Watershed Management Program (EWMP & CIMP). Los Angeles County, CA. Project Manager/Director for the EWMP for the City of Malibu, County of Los Angeles, and Los Angeles County Flood Control District. Tasks include identification of priorities and approaches, development of EWMP Work Plan, CIMP, and final EWMP including RAA.

Peninsula Cities Enhanced Watershed Management Program (EWMP). Los Angeles County, CA. Geosyntec Project Director for the RAA for the EWMP for the Cities of Rancho Palos Verdes, Palos Verdes Estates, Rolling Hills, Rolling Hills Estates, County of Los Angeles, and Los Angeles County Flood Control District. Tasks include CIMP and RAA in conformance with the December 2012 Los Angeles MS4 Permit.

Santa Monica Bay Beaches Bacteria TMDL Implementation Plan, Jurisdictions 1 and 4 Los Angeles, CA. Project Manager for Malibu, Los Angeles County, and Caltrans 18-year TMDL Implementation Plan, which addresses integrated water resources,

Susilo, Ken, P.E. D.WRE, CPSWQ
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Geosyntec[®]
consultants

source controls, structural BMPs, limited monitoring, and implementation cost and budgets.

PROFESSIONAL EXPERIENCE

Geosyntec Consultants, Los Angeles, CA, October 2004-present

Psomas, Los Angeles, CA August 1999-October 2004

URS/Woodward-Clyde Consultants, Oakland, CA, 1991-1999

University of California Berkeley, Expert Witness Support, Berkeley, CA, 1990

AWARDS

Outstanding Civil Engineer, Private Sector, ASCE Region 9 (State of California) – 2006

Outstanding Civil Engineer, Private Sector, ASCE Los Angeles Section – 2006

Outstanding Civil Engineer, Private Sector, ASCE Metro LA Branch – 2006

Legacy Park Project Awards:

Water Quality Improvement Award, Water Environment Federation 2012

Outstanding Sustainable Project – Metropolitan Los Angeles Branch, ASCE, 2011

Project of the Year – Los Angeles Section & Region 9 (California) ASCE, 2011

Outstanding Stormwater Regional BMP Project – California Stormwater Quality Association (CASQA), 2011

Engineering Achievement Award– CA Water Environment Association LABS 2011

Project of the Year, APWA , Southern California Chapter, 2011

Mill Creek Wetlands Awards:

Outstanding Stormwater Regional BMP Project – CASQA , 2014

Outstanding Public Civil Engineering Proj., San Bernardino & Riverside, ASCE
2014

Outstanding Stormwater BMP Program – *OCTA Measure M2 Environmental Cleanup Program*, CASQA, 2014

Outstanding Public/Private Civil Engineering Project – Metro LA Branch – Los Angeles County-wide Structural BMP Prioritization Methodology, ASCE, 2006

Outstanding Research Project – Cienega Filtration Project, CASQA, 2007

CHRISTOPHER WESSEL, P.E., QSD/QSP

**environmental planning
NPDES permitting
surface water management and monitoring
stormwater BMPs**

EDUCATION

M.S., Hydrology and Water Resources Engineering, University of California, Los Angeles, 2009

B.S., Civil and Environmental Engineering, University of California, Los Angeles, 2007

REGISTRATIONS AND CERTIFICATIONS

Registered Professional Engineer, Civil, State of California, No. C78522
California Construction General Permit Qualified SWPPP Developer/Practitioner,
California, No. 20321

CAREER SUMMARY

Chris Wessel, PE, QSD/QSP, is a Professional Engineer and Qualified SWPPP Developer and Practitioner. He has over six years' experience in stormwater management, best management practice (BMP) design and implementation, and hydrologic and hydraulic computer modeling. In his five-plus years at Geosyntec, Chris has been involved in a variety of projects. His project experience has included topics such as environmental planning for MS4 Permit compliance; stormwater pollution prevention plan development and NPDES permitting under the California Construction General Permit; compliance with water quality objectives including Total Maximum Daily Loads (TMDLs), Basin Plan Objectives, and NPDES effluent limits; stormwater planning and BMP design; hydraulic and hydrologic modeling, with an emphasis on BMP design and evaluation; and dry and wet weather field sampling. He is also a QSD/QSP training instructor for various clients in both the private and public sector.

Southbay Beach Cities Enhanced Watershed Management Program (EWMP) and Coordinated Integrated Monitoring Program (CIMP) Development, Cities of Manhattan Beach, Hermosa Beach, Redondo Beach, Torrance, and County of Los Angeles, CA. Responsible for the drafting of the Southbay Beach Cities (Beach Cities) EWMP to meet requirements set forth in the Los Angeles Phase I MS4 Permit. Project work included data compilation and analysis to prioritize water body-pollutant combinations within the watershed; water quality and quantity modeling using the Structural BMP Prioritization and Analysis Tool (SBPAT) in support of performing a reasonable assurance analysis for the identified water quality priorities; writing of

Christopher Wessel, P.E., QSP/QSD
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numerous technical reports; and project management tasks. Additionally, Mr. Wessel was responsible for reviewing and finalizing the Beach Cities CIMP, which established a large-scale coordinated monitoring program throughout the entire watershed to meet MS4 Permit requirements.

Environmental Consulting Services for MS4 Permit Compliance, Various Clients. Providing on-call environmental consulting services to assist eight different cities with the implementation of the requirements of the Los Angeles County MS4 Permit. Ongoing Municipal Stormwater Permit assistance has included: revisions of city's municipal codes to reflect requirements of the MS4 Permit, training presentations to city staff on the Planning and Land Development requirements set forth in the Permit, implementation planning, commercial facility inspections, and illicit connection and illicit discharge program planning. Cities served include El Segundo (project manager), Hermosa Beach, Manhattan Beach, Rolling Hills, Rolling Hills Estates, Palos Verdes Estates, and Monrovia.

Jurisdictional Groups 5 and 6, Santa Monica Bay Beaches Bacteria TMDL Implementation Plan, Cities of Torrance, Redondo Beach, Hermosa Beach, and Manhattan Beach, California. Responsible for EPA SWMM modeling of the Herondo and 28th St. watersheds. The modeling was used as part of the quantitative assessment for the project, which analyzed the impact of various BMPs on meeting the Bacteria TMDL. Modeling was also conducted for the design of a large infiltration BMP at the Herondo watershed outfall to meet the Bacteria TMDL discharge requirements while seeking to minimize costs.

Manhattan Beach Greenbelt Infiltration System Monitoring, City of Manhattan Beach, California. Assistant project manager overseeing the drafting of the monitoring plan and project effectiveness report for the Greenbelt Infiltration System in Manhattan Beach. Both the monitoring report and effectiveness report were submitted to the State Water Resources Control Board in support of the project being funded by the Prop 84 Grant Program. Also conducted the field monitoring, which consisted of water quality sampling and high-resolution flow monitoring.

Pier Avenue Storm Drain and Infiltration Basin Monitoring, City of Hermosa Beach, California. Responsible for writing draft monitoring plan for storm drain and infiltration basin monitoring, intended to assist with LARWQCB designation as full capture system for trash. Content included recommendations on sampling frequency, equipment and procedures, and quality control/assurance procedures. Assisted with equipment design and vendor coordination. Also led effort for the collection of field data and the analysis of retrieved flow data, and helped draft the final certification report for the project.

City of Los Angeles Argo Drain Stormwater BMP Project, Los Angeles, CA. Assistant Project Manager (as subconsultant to AECOM) for the Stormwater BMP Project (Proposition O) involving stormwater diversion, treatment, and infiltration for compliance with the Santa Monica Bay Bacteria TMDL, Enhanced Watershed Management Program, and Los Angeles Phase I MS4 Permit. Project scope includes concept design validation, pre-design, geotechnical investigations, survey, environmental clearance, permitting, final design, and construction-phase support.

NPDES Monitoring and Reporting, Newhall Land and Farming Company Water Reclamation Plant, Newhall, California. Assists with on-going NPDES baseline receiving water monitoring program to satisfy the requirements of the Regional Water Quality Control Board. Duties include field sampling, data compilation, and technical writing of the required NPDES reports.

Los Angeles River Real-Time Conditions Monitoring and Reporting, Arts District Community Council of Los Angeles, Los Angeles County, California. Project manager and civil engineer installing a pilot network of real-time monitoring stations along the LA River in support of the Los Angeles River In-Channel Bikeway Project. The wireless monitoring network is currently being installed along strategic locations in the Los Angeles River and its tributaries, and will also be collecting real-time weather forecasts, rain gages, and existing stream gage data to provide a decision support system for automatically controlled notifications and operations.

Los Angeles World Airports (LAWA) CGP SWPPP Review, Los Angeles, California. Mr. Wessel is providing third party review of SWPPPs prepared by others for construction projects at LAX. SWPPP comments are submitted to the Los Angeles World Airports Environmental staff.



BRANDON STEETS, P.E.

**water quality monitoring
strategic regulatory support
TMDL implementation planning and special studies
microbial source investigation**

EDUCATION

M.S., Environmental Engineering, University of California, Santa Barbara, 2000
B.S., Environmental Engineering, Rensselaer Polytechnic Institute, Troy, New York,
1998

REGISTRATIONS AND CERTIFICATIONS

Registered Professional Engineer, Chemical, State of California, No. CH6132

CAREER SUMMARY

Mr. Steets has significant experience in conducting and managing large water quality monitoring and modeling projects to support NPDES permit compliance, TMDL implementation, and stormwater quality management planning. His experience includes bacteria source investigations; MS4 Water Quality Improvement Plans and Reasonable Assurance Analysis modeling; bacteria fate and transport modeling in coastal lagoons; water quality monitoring plan development, implementation, data analysis, and reporting; and BMP selection, performance evaluation, and design. He was a lead developer of the ASCE-award winning model, the Los Angeles County-wide Structural BMP Prioritization and Analysis Tool (SBPAT), and he manages the Stormwater Expert Panel for the Boeing Santa Susana Field Laboratory, including design of an innovative biofilter that won the 2013 CASQA award for outstanding BMP implementation project.

He is an expert on bacteria issues, being a member of the State Board's Clean Beaches Task Force and Beach Water Quality Workgroup, co-editor of the 2014 EWRI report *Pathogens in Urban Stormwater Systems*, Technical Advisory Committee member for the Stanford predictive beach modeling project, reviewer for the 2010 WERF/ASCE International Stormwater BMP Database performance summary for bacteria, and peer reviewer on coastal bacteria topics for the journal *Water Research*. He has published articles in *Stormwater* magazine and the journal *Water Research* on topics of bacteria treatment and modeling. His project specific management and technical experience includes the following:

Santa Monica Bay (SMB) Enhanced Watershed Management Plans (EWMPs), Multiple Cities, Los Angeles County, California. Development of Coordinated

Integrated Monitoring Plans (CIMPs), for compliance with new MS4 Permit receiving water and outfall monitoring requirements, and development of Work Plans and EWMPs, including BMP identification and Reasonable Assurance Analysis modeling to demonstrate compliance with TMDL-based limits and other Water Quality Standards, using the SBPAT and WMMS/LSPC models. The four SMB EWMP Groups include North Santa Monica Bay (led by City of Malibu), Santa Monica Bay J2/3 (led by City of Los Angeles), Southbay Beach Cities (led by Redondo Beach), and Peninsula Cities (led by Rancho Palos Verdes).

Microbial Source Tracking, Santa Monica Bay (SMB) Beaches, Cities of J5/6, California. Senior review of design and implementation of a dry weather urban MS4 MST investigation for the jurisdictional group 5 and 6 (J5/6) cities, to support TMDL implementation planning. Included work with UC Irvine researchers on sampling and analyses for FIB and human markers, and siting, prioritization, modeling, and conceptual design of treatment BMPs.

WDR and NPDES Water Quality Monitoring and Reporting for Newhall Ranch, Valencia, California. Development and implementation of a receiving water and stormdrain outfall Water Quality Monitoring Plan to comply with the Newhall Ranch Specific Plan and Waste Discharge Requirements (WDR) Order/401 Certification. Also monitoring and reporting for the Newhall Ranch Wastewater Reclamation Plant (WRP) NPDES permit, which includes groundwater and receiving surface water sampling, quarterly compliance reporting, and coordination with Regional Board NPDES permit staff.

Microbial Source Tracking Investigation, San Diego County, California. Design and implementation of a study plan to investigate human waste contamination of MS4 outfalls and networks in two watersheds using novel DNA markers from the USEPA-recognized California Microbial Source Identification Manual (Manual), CCTV, field observations, GIS, a new tablet app, and other forensic tools. This was the first plan in the country to implement the Manual-recommended methodology in a MS4 network.

Microbial Source Tracking Investigation, Santa Barbara, California. In collaboration with UC Santa Barbara researchers, investigation of bacteria and human fecal sources at three high-use beaches and their watersheds and MS4 outfalls. Includes dye testing, MST sampling support, study planning, review of results, and remedial recommendations.

Dry Weather Pathogen Source Tracking and Load Estimation, City of Santa Barbara, California. Project included: (1) survey of MS4 networks to identify sources of dry weather flow and continuously measure flows; (2) coordination with UC Santa Barbara researchers for monitoring of bacteria and human waste markers, and quantification of loads within the watershed; and (3) evaluation and feasibility assessment of dry weather treatment system alternatives, including diversion to sewer

Brandon Steets, P.E.

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and disinfection. This was the first published, peer reviewed study in the country to document the linkage between leaking sewers and stormdrain contamination.

Malibu Creek Bacteria and Nutrient TMDL Implementation and Monitoring Plans, Ventura County, California. Development of Implementation Plans for unincorporated County portions of Malibu Creek watershed, including identification and prioritization of structural and non-structural BMPs, and recommendations for future special studies. In addition: presentation to Regional Water Board staff, comment on the draft Malibu Creek Bacteria TMDL reopener, 30% design and modeling of an innovative biofilter to treat for bacteria, grant application support (resulting in a \$1.5M state grant), development of bacteria-specific filter media specifications and review of 60%/90% design plan sets, development of a TMDL Outfall Compliance Monitoring Plan, and (ongoing) design and implementation of a special monitoring study for FIB and MST markers in MS4 outfalls.

San Luis Rey and San Diego River Combined Load Reduction Plans (CLRPs) and TMDL Monitoring Plans, San Diego County, California. Development of MS4 CLRPs and TMDL Compliance Monitoring Plans for the San Luis Rey and San Diego River watersheds, including collaboration with multiple co-permittees. CLRPs include prioritization, cost, and quantitative evaluation of both nonstructural and structural (retrofit) BMPs, to comply with the San Diego Region Bacteria TMDL for 20 Creeks and Beaches.

Bacteria TMDL Implementation Planning and Source Tracking Support, Denver Metropolitan Agencies. Guidance on MST study design and implementation, strategic regulatory planning for TMDL modification, and development of bacteria-focused BMP fact sheets, including source controls and state of the art treatment options for bacteria, to guide municipal agency decision-making and implementation.

Stormwater Monitoring Plan for Redevelopment Project, Orange County, California. Implemented a wet and dry weather post-development monitoring program for a confidential coastal redevelopment project, as required by the California Coastal Commission (CCC). Includes water quality and aquatic toxicity monitoring at ocean sampling locations near stormdrain outfalls; BMP implementation site inspections; development of annual monitoring reports; and interface with CCC staff.

AVERY BLACKWELL, P.E.

**water quality monitoring
pollutant source investigations
TMDL implementation/compliance
planning and reporting**

EDUCATION

M.S., Water Resources Engineering, Colorado State University, Fort Collins, 2015

B.S., Civil Engineering, California State Polytechnic University, San Luis Obispo, 2002

REGISTRATIONS AND CERTIFICATIONS

Registered Professional Engineer, Civil, State of California, No. 83,866

CAREER SUMMARY

Avery Blackwell has diverse water related experience in California's public and private sectors and internationally in England. Extensive planning, monitoring, analysis, design and drafting experience in municipal and private stormwater quality, residential development, and recycled water. He has significant management and field experience, while being detailed orientated with strong computer skills and excellent verbal and written communication. Experienced with ArcGIS, Microsoft Access, SWMM, SBPAT, CEDEN, and CIWQS.

Water Quality Monitoring and Pollutant Source Investigations

WDR and NPDES Water Quality Monitoring and Reporting for Newhall Ranch, Valencia, California. Assistant Project Manager (2011-Present). Development and implementation of a receiving water and stormdrain outfall Water Quality Monitoring Plan to comply with the Newhall Ranch Specific Plan and Waste Discharge Requirements (WDR) Order/401 Certification. Also monitoring and reporting for the Newhall Ranch Wastewater Reclamation Plant (WRP) NPDES permit, which includes groundwater and receiving surface water monitoring, quarterly compliance reporting, and coordination with Regional Board NPDES permit writing staff. Preparation and submission of monitoring data to the Stormwater Monitoring Coalition (SMC), the California Environmental Data Exchange Network (CEDEN), and the California Integrated Water Quality System (CIWQS). Conducted receiving water Reasonable Potential Analysis for monitoring data from 2008 to 2011 in order to renew NPDES Permit.

Microbial Source Tracking Investigation, San Diego County, California. Assistant Project Manager (2013-2015). Design and implementation of a novel study plan to investigate human waste contamination of MS4 outfalls and networks in within the unincorporated County portions of the San Luis Rey and San Diego River watersheds using latest DNA markers from the California Microbial Source Identification Manual, CCTV, field observations, GIS, a custom developed tablet app, and other forensic tools.

Avery Blackwell, P.E.
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Confidential Litigation Monitoring Support, Southern California. Assistant Project Manager (2013-Present). Development and implementation of a Water Quality Monitoring Plan capable of detecting project site influences on water quality between 22 upstream and downstream monitoring locations. Tasks include wet weather event planning, equipment preparation, storm tracking, staff and lab coordination, health and safety oversight, and in-field training and guidance of up to fourteen field staff per event.

Malibu Creek Watershed Bacteria TMDL Source Investigation, Ventura County, California. Assistant Project Manager (2015). Development and implementation of a study plan for dry weather monitoring and storm drain network investigations to identify sources of flow and bacteria to Malibu Creek, using latest DNA markers from the California Microbial Source Identification Manual, CCTV, field observations, and GIS.

Malibu Creek Watershed Bacteria TMDL Outfall Monitoring Plan, Ventura County, California. Assistant Project Manager (2014). Development of an outfall monitoring plan capable of assessing Waste Load Allocations in accordance with the Malibu Creek watershed Bacteria TMDL.

TMDL Implementation/Compliance Planning And Reporting

San Luis Rey and San Diego River Water Quality Improvement Plans (WQIPs), San Diego County, California. Senior Staff Engineer (2014). Development of WQIPs for the San Luis Rey and San Diego River watersheds according to the San Diego regional MS4 permit; tasks including setting interim and final numeric goals, identification of non-structural strategies based on reasonable assurance analysis modeling (including load reduction quantification and costs), and collaboration with multiple co-permittees.

INVITED PRESENTATIONS

CASQA Stormwater Conference, 2015. San Diego County, Quantitatively tracking and assessing BMP implementation. Monterey, CA. October 20.

DIEGO CADENA, P.E.
Senior Consultant

**operations & maintenance
federal & state agency coordination
integrated watershed planning**

EDUCATION

B.S., Civil Engineering, Cal State University Los Angeles, Los Angeles, CA, 1981

REGISTRATIONS AND CERTIFICATIONS

Professional Civil Engineer, California, No. CE039440

CAREER SUMMARY

During Diego Cadena's 30-year professional career at the Los Angeles County Department of Public Works (LACDPW), his exposure and responsibilities have touched virtually every departmental function within land development, flood, road, capital projects, sewers, and solid waste. As the original Project Manager for the LA River Master Plan, Mr. Cadena helped lead the Department to a new environmental approach to public works. He led cooperative efforts with multiple local, state, and federal agencies to obtain funding, deliver multiple purpose projects, and garner beneficial partnering. Mr. Cadena managed the Los Angeles County Drainage Area (LACDA) Project during feasibility and design phases. Finally, he served as Chair of the Leadership Committee for the adoption of the Integrated Regional Water Management Plan (IRWMP) that will lead the entire region to a new approach in integrated watershed planning.

REPRESENTATIVE EXPERIENCE

Los Angeles County Flood Control District Direction, Management & Administration, Los Angeles County, CA. As Deputy Director, managed the planning, operation, and maintenance of the LACDA Project for the Los Angeles County Flood Control District. Prepared and administered the District's \$229M budget, as well as the Los Angeles County Waterworks Districts' \$121.4M budget. Represented LACDPW at public meetings, conferences, committee meetings, and negotiations with local, regional, State, and Federal agencies. Formulated plans, policies, and procedures for the Districts and directed special studies, investigations, and reports concerning departmental activities. Oversaw a staff of ± 750 employees.

Diego Cadena, P.E.
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Stormwater Capture Master Plan, LADWP, Los Angeles, California. Senior review and coordination for the comprehensive planning and modeling process using the Los Angeles County LSPC hydrology model where hundreds of alternatives can be analyzed in the preparation of a Stormwater Capture Master Plan.

Flood Maintenance Division Operations & Maintenance, Los Angeles County, CA. Managed the operation and maintenance of the LACDPW's flood control system and water conservation facilities, including stormwater BMPs, dams, storm drains, spreading grounds, and channels. Coordinated multiple and diverse project activities, such as Sun Valley Percolation Basin and Dominguez Gap Wetlands. Regularly negotiated with environmental regulatory agencies, including negotiating permits with the LA Regional Water Quality Control Board, California Department of Fish and Game, and United States Army Corps of Engineers for the operation and maintenance of the flood control system.

Road Maintenance Division Operations & Maintenance, Los Angeles County, CA. Oversaw the operation and maintenance of the LACDPW's highways, roads, and bridges. Directed the recovery from over \$100M in damages caused by the 2005 storms, including construction repairs to damaged roads as well as the construction of the new San Francisquito Canyon Road.

Operational Services Division Operations & Maintenance, Los Angeles County, CA. Managed the operation and maintenance of the LACDPW's traffic lighting and signs. Responsible for LACDPW trades. Directed the competitive procurement of quality supplies for all divisions of LACDPW.

South Area Flood Control and Water Conservation Operations & Maintenance, LACDPW Flood Maintenance Division, Los Angeles County, CA. Coordinated the operations and maintenance of the South area flood control and water conservation system, including the Rio Hondo and San Gabriel Coastal Spreading Grounds, seawater barriers, channels, drains, and 44 pump plants.

Los Angeles County Drainage Area Project, Los Angeles County, CA. Acted as project manager for the \$364M Los Angeles County Drainage Area Project to enhance the hydraulic capacity of the Lower Los Angeles River and Rio Hondo Channel.

Jim Burton, P.E.
Principal Environmental Engineer
EcoKai Environmental, Inc.

(424) 241-3524
jburton@ecokai.com

EDUCATION

University of California at Irvine B.S. Civil Engineering 1989
University of Southern California Environmental Engineering 1992-1994

PROFESSIONAL LICENSES

Professional Civil Engineer	No. 53976	(California)
Certified Stormwater QSD/P	No. 23633	(California)
Professional Civil Engineer	No. 14313	(Hawaii)
Professional Civil Engineer	No. 47317	(Washington)
Professional Civil Engineer	No. 108092	(Texas)

PROFESSIONAL HISTORY

Organization and Location(s)	Position	Dates
EcoKai Environmental, Inc. Playa del Rey, CA	Senior Water Resource Specialist / EcoKai President & CEO	2009 – Present
Psomas Los Angeles, CA	Vice President / Group Manager	2007 – 2009
	Associate / Team Leader	2005 – 2007
	Senior Project Manager	2001 – 2005
Metropolitan Water District Los Angeles, CA	Associate Engineer	1996 – 2001
	Assistant Engineer	1994 - 1996
	Junior Engineer	1991 - 1994
Willdan Associates Anaheim, CA	Assistant Civil Engineer	1988 – 1990
	Intern	1988 - 1988

BACKGROUND

Mr. Burton has over 25 years of experience in water resource evaluation, water sampling and analysis, regulatory compliance and environmental permitting, and hydrogeologic investigations. He has extensive field experience with the collection of scientific data in sensitive environmental areas and within pristine ecosystems. He has managed multi regulatory compliance projects with large volumes of water quality data and directed the development of weekly and monthly reports.

Mr. Burton has participated in the evaluation, planning, and implementation of projects balancing hydrologic and biologic resources in compliance with local, State and Federal regulatory permit requirements and has field experience on large groundwater and surface water monitoring programs, groundwater control for underground construction, and hydrologic assessments in several US Forests and marine coastal locations. These include the installation of dozens of automatic dataloggers and the evaluation of hundreds of springs, mountain streams, monitoring wells, and urban river channels.

Jim Burton, P.E.

Mr. Burton's regulatory experiences include the development and review of CEQA/NEPA documentation, Clean Water Act and State Fish & Wildlife Code (ACOE §404, RWQCB §401 & 402, and CDFW §1600.). In addition, he has worked with the Federal Energy Regulatory Commission requirements regarding and US Forest 4(e) conditions.

SELECTED EXPERIENCE

Southern California Edison – Bishop Creek

Mr. Burton is responsible for hydrologic data collection as part of a larger biologic resource management program for several locations along Bishop Creek, Birch Creek, and McGee Creek in the Inyo National Forest. This mitigation, monitoring and reporting program for both hydrological and biological data is a requirement of the U.S. Forest Service and the Federal Energy Regulatory Commission (FERC) permits and a condition of licenses issued for various local power generating facilities and applicable stream diversions. Mr. Burton has designed, programmed, and installed automated data monitoring equipment at over 17 locations that collect information such as flow, stream stage, soil moisture and climatic data.

Southern California Edison – Rush Meadow / Ansel Adams Wilderness:

This remote mountain meadow in the within the Ansel Adams Wilderness of the Eastern Sierra Nevada Mountains supports a variety of vegetation and wildlife. As part of a larger ecological monitoring and reporting program, Mr. Burton is the responsible for the collection of hydrologic data and has installed, programmed, and maintained several automated data loggers that record groundwater levels, stream stage, soil moisture and climatic data. This solar and battery powered equipment has been in operation since the late 1990's and, as of October 2015, continues to operate providing data for technical studies for evaluation of regulatory compliance the project's environmental documentation and operating permits.

Val Verde County / Del Rio - Hydrologic Data Collection and Groundwater Model

Mr. Burton was responsible for the installation of automated data logging equipment for client consideration of the potential development of a larger comprehensive groundwater monitoring program.

Kinney County Groundwater Conservation District – Groundwater Monitoring Network

Mr. Burton completed the design and implementation a comprehensive groundwater monitoring network across the County that record depth to water in wells and include surface water streams. Automated equipment is installed at each of the 14 stations on this network.

Southern California Edison – Lee Vining Creek

This hydrologic resource management and regulatory permit compliance project is located approximately one mile east of the Yosemite National Park boundary. Mr. Burton is responsible for the collection of hydrologic data, including installation and programming of remote Campbell Scientific data logging equipment for soil moisture, depth to groundwater, and stream flow. The effort is being completed in compliance of the project's U.S. Forest Service and Federal Energy Regulatory Commission's (FERC) requirements for hydroelectric generating facilities.

Jim Burton, P.E.

Metropolitan Water District - Arrowhead Tunnels Groundwater Monitoring Program

Mr. Burton was the responsible for the initial design and implementation of a comprehensive groundwater monitoring program for Metropolitan's billion-dollar Inland Feeder Project Tunnels. The program collected monthly hydrologic data from almost 150 sites in the San Bernardino Mountains, many only accessible by helicopter. As part of this program, Mr. Burton completed a comprehensive water quality sampling program to evaluate the tunnel excavation water quality water quality. Mr. Burton's responsibility was to ensure compliance with regulatory agencies sampling and reporting requirements including public/client relationships, legal positions, executive management briefings, and project technical criteria. He was responsible for the preparation of monthly reports related to tunnel groundwater infiltration and its potential to impact groundwater levels, spring flow rates, and/or threatened or endangered species within the San Bernardino National Forest. Mr. Burton also reviewed the merits of contractor claims related to ground water and reported all RWQCB NPDES discharge exceedances, if any. Project data was stored in a Microsoft Access Database that was developed under Mr. Burton's direction.

Dominguez Channel Water Quality Sampling Program, Carson, CA:

Mr. Burton was the project manager of a water quality and sediment sampling program along a portion of the Dominguez Channel that required sampling of approximately 112 water samples per day that needed were then transported to an analytical laboratory following strict Chain-of-Custody procedures. These daily water samples were analyzed for a variety of water quality parameters including semi-volatile organic compounds, pesticides, PCB's, heavy metals, bacteriological organisms and BOD. Additional water quality field parameters (including temperature, pH, electrical conductivity, oxidation-reduction potential, DO) were measured daily by a field team directed by Mr. Burton. In addition, Mr. Burton directed the development of a customized MS Access data base with a project specific statistical analysis tool and graphing application program (developed in Visual Basic) for ease of presenting and reporting water quality trends.

Ahmanson Ranch Water Monitoring Project

Mr. Burton directed the design, installation, and development of a sensitive water quality sampling program for a proposed residential development project near the Santa Susanna Field Laboratory. Because of concerns about potential perchlorate levels in the groundwater, monthly static water level measurements, water quality samples, and field parameters were tested in six well locations and monthly surface water measurements of streamflow, stream depth and width, temperature, pH, and electrical conductivity were collected at various locations along Las Virgenes and East Las Virgenes Creeks. In addition there was an additional bi-annual collection of water samples for laboratory analysis in general accordance with U.S. Environmental Protection Agency (EPA) methodology, including the strict use of Chain-of-Custody forms and procedures, labeled containers, and appropriate preservatives. Mr. Burton developed and implementation of customized groundwater monitoring program Microsoft Access database and the preparation of quarterly and annual summary reports

John H. Dorsey, Ph.D.

Professor at Loyola Marymount University
Co-Director Center for Santa Monica Bay Studies
Dept. Of Civil Engineering & Environmental Science
SENIOR SCIENTIST & FIELD QA/QC
(310) 338-7817
jdorsey@lmu.edu

EDUCATION

Ph.D. 1982. Zoology, University of Melbourne (Australia).
MA 1975. Biology, California State University, Long Beach.
B.S. 1972. Marine Biology, California State University, Long Beach.

SUMMARY OF QUALIFICATIONS

- Professor at Loyola Marymount University since 2002 (part-time since 1985); teaches courses in environmental and marine science, laboratory wastewater and environmental analyses.
- Senior Fellow, Center for Urban Resilience at LMU.
- Co-Director of the Center for the Study of Santa Monica Bay
- Present research on wetland and coastal water quality.
- Board Certified Environmental Scientist (by eminence) by the American Academy of Environmental Engineers & Scientists.
- Experience with monitoring and research of coastal marine habitats, water quality, monitoring and control of polluted runoff.
- Experience with development of marine monitoring programs, regulatory policy.
- Extensive working relationships with scientific, academic, regulatory, and environmental communities.

SELECTED EXPERIENCE

Teaching

- Developed and implemented new environmental and ocean science courses.
- Established new Environmental Science major at LMU.
- Focuses on effectively communicating technical information and issues to students, agency personnel, environmental activists, and the general public.

Research

- Post-graduate research on effects of sewage disposal on rocky subtidal polychaete assemblages (MA) and synecology of nereid polychaetes in soft sediments exposed to wastewater effluents (Ph.D.).
- Impacts of wastewater disposal on marine benthic communities.
- Bacterial contamination of urban runoff entering coastal waters.
- Transport and fate of fecal bacteria in wetland systems.

Technical

- Board Certified Environmental Scientist (American Academy of Environmental Engineers & Scientists)

J. Dorsey Resume
Revised July 8, 2015

- Assisted in developing a comprehensive Bay monitoring plan for the Santa Monica Bay Restoration Project.
- Developed statistical and graphical assessment techniques and reporting formats for City of Los Angeles' marine monitoring programs.
- Worked with City of LA, EPA Region 9, and State regulatory staffs to develop a comprehensive NPDES marine monitoring program for the Hyperion Treatment Plant.
- Worked with municipal, health, regulatory and environmental activist scientists in developing a microbiological shoreline monitoring program for Santa Monica Bay.
- Worked with regulatory scientists (EPA, RWQCB, SWRCB) on revamping marine monitoring techniques around marine outfalls.
- Designed and implemented storm water studies to determine pollution "hot spots"; wrote technical reports recommending mitigating actions.
- Assessed effectiveness of pollution removal strategies done by municipalities so shoreline marine waters meet State bathing water standards (for the California state Water Resources Control Board).
- Now conducting water quality research in the Ballona Wetlands and Estuary, Del Rey Lagoon.

Policy Development

- Chaired technical committees in developing flexible monitoring strategies for the Santa Monica Bay Restoration Project.
- Key player in developing a regional shoreline monitoring program; chaired the Microbiology subcommittee for the Bight'98 Regional Shoreline survey.
- Used data from technical assessments to implement policy of diverting polluted runoff from storm drains into the sanitary sewers.

Communication

- Numerous technical articles in peer-reviewed journals; other reports.
- Training in media relations and interviews – with Jack Popejoy (KFWB News), Gail Choice (Gail Choice Productions, Channel 35).
- Numerous presentations to community, environmental, technical and scientific groups, government officials, and the media (radio, television, newspaper).

Peer-Review of Manuscripts for Journals

- Environmental Monitoring & Assessment
- Bulletin of the Southern California Academy of Sciences
- Marine Pollution Bulletin
- Water Research
- Journal of Regional Studies in Marine Science

PROFESSIONAL AFFILIATIONS

- American Academy of Environmental Engineers & Scientists (2012-present)
- American Association for the Advancement of Science.
- Santa Monica Bay Restoration Commission, Technical Advisory Committee (Past Chair, 2011-present).
- Southern California Academy of Sciences (Board of Directors, 2000-present; Secretary, 2002-04; President, 2004-2006; Mentor, HS Research Training Program).

J. Dorsey Resume
Revised July 8, 2015

- USC Sea Grant Advisory committee
- Science Advisory Committee (SAC) for the Ballona Wetlands Restoration Project
- Sigma Xi
- Southern California Society of Environmental Toxicologists and Chemists (Bd. Directors, 2009-Present)
- Aquarium of the Pacific, Marine Conservation and Research Institute (Board of Directors, 2013-present).
- King Harbor Boating Foundation, Waterfront Education Program (Board member, Advisory Committee; 2014).

RECENT WORK HISTORY

2002 – Present

Loyola Marymount University, Los Angeles

- Professor, Department of Civil Engineering & Environmental Science
- Chair -- Department of Natural Science (2007-2011)
- Teaches courses in environmental science, wastewater testing, oceanography, honors science.
- Research focus on wetland and beach water quality associated with fecal indicator bacteria.

1985-2002 – Part-time Lecturer

Loyola-Marymount University, Los Angeles

- Taught one night class per semester.
- Courses included Survey of Marine Pollution (Sp, Fall), Environmental Science (two semesters only), Environmental Laboratory (Summer semesters).

1997-2002 -- Wastewater Treatment Laboratory Manager II

City of LA, Bureau of Sanitation, Watershed Protection Division

- Assistant Division Manager planning and directing operations of the Enforcement, Stormwater Assessment, and Public Outreach sections.
- Works with regulatory, environmental, and city staff in developing, implementing, and meeting storm water regulations and requirements.
- Development of science and regulatory policy.

1992-1997 -- Wastewater Treatment Laboratory Manager II

City of LA, Bureau of Sanitation, Environmental Monitoring Division

- Assistant Division Manager overseeing Chemistry operations.
- Coordinated and managed projects among biology and chemistry sections.
- Developed, implemented marine monitoring programs.

1988-1992 -- Wastewater Treatment Laboratory Manager I

City of LA, Bureau of Sanitation, Environmental Monitoring Division

- Managed wastewater biological testing, marine monitoring, some chemical testing operations.
- Produced marine monitoring assessments of Santa Monica Bay.

MEGAN M. OTTO, P.E., QSD/QSP

**NPDES permit compliance
stormwater engineering feasibility studies
surface water management and monitoring**

EDUCATION

M.S., Environmental Engineering, University of Massachusetts, Amherst, MA, 2007
B.S., Environmental Engineering, California Polytechnic State University, San Luis
Obispo, CA, 2005

REGISTRATIONS AND CERTIFICATIONS

Professional Civil Engineer, State of California, No. C74745
California Construction General Permit Qualified SWPPP Developer/Practitioner, No.
22153

CAREER SUMMARY

Megan Otto has eight years of experience in stormwater planning, municipal and industrial NPDES permit compliance, hydrologic and water quality monitoring and reporting, engineering feasibility studies, hydrologic and hydraulic modeling, and litigation support. Ms. Otto has managed or assisted with several large-scale water quality monitoring projects which have required significant inter-agency cooperation and logistical planning. Notable project work includes the development of multiple Enhanced Watershed Management Programs (EWMPs) under the Los Angeles County Municipal Separate Storm Sewer System (MS4) Permit, including the Santa Monica Bay EWMP and the Beach Cities EWMP, development of large-scale regional project concepts for the City of Los Angeles, and various stormwater quality monitoring projects throughout the Santa Monica Bay region. Ms. Otto is also a certified Qualified Storm Water Pollution Prevention Plan (SWPPP) Practitioner (QSP) and Qualified SWPPP Developer (QSD).

Santa Monica Bay (SMB) Enhanced Watershed Management Program (EWMP). Los Angeles County, California. Project Manager/Assistant Project Manager for the EWMP for the Cities of Los Angeles, El Segundo, and Santa Monica; County of Los Angeles, and Los Angeles County Flood Control District (Jurisdictional Groups 2, 3, and 7). Tasks included identification of priorities and approaches, public workshops, development of EWMP Work Plan, final EWMP including a reasonable assurance analysis (RAA), and assistance with the development of the Coordinated Integrated

Megan M. Otto, P.E.
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Geosyntec[®]
consultants

Monitoring Program (CIMP) (2012 Los Angeles MS4 Permit).

Beach Cities EWMP. Los Angeles County, CA. Assistant Project Manager for EWMP for the Cities of Redondo Beach, Manhattan Beach, Hermosa Beach, Torrance, and the Los Angeles County Flood Control District (Santa Monica Bay and Dominguez Channel Watersheds). Tasks included identification of priorities and approaches, public workshops, development of EWMP Work Plan, final EWMP including an RAA, and development of the CIMP (2012 Los Angeles MS4 Permit).

City of Los Angeles Stormwater BMP Concept Design, Los Angeles, CA. Project Manager for development of four stormwater BMP concepts, supporting EWMP implementation in Ballona Creek, Marina Del Rey, and Santa Monica Bay watersheds.

Pier Avenue Improvement Project, City of Hermosa Beach, Hermosa Beach, California. Project Manager for activities related to wet and dry weather monitoring of a low-flow green streets stormwater treatment system. Scope included preparation of a Monitoring and Reporting Plan, monitoring equipment procurement, installation coordination, periodic inspection and maintenance, and summarizing monitoring results in a Project Report for review by the State Board.

Manhattan Greenway Infiltration Project, City of Manhattan Beach, Manhattan Beach, California. Project Manager for the flow and water quality monitoring of an infiltration trench constructed under the existing City Greenway. Responsible for the Monitoring and Reporting Plan, Quality Assurance Project Plan, procuring monitoring equipment and coordinating installation, remote monitoring of the flow rate webcast, and summarizing monitoring results in a Project Report for review by the State Board.

Jurisdictional Groups 5 and 6, Santa Monica Bay Beaches Bacteria TMDL Implementation Plan, Cities of Torrance, Redondo Beach, Hermosa Beach, and Manhattan Beach, California. Task Manager for field reconnaissance and storm drain sampling of selected high priority drainage areas. This includes a drainage area study to identify the most critical sampling locations based on land use, business types, storm drain configuration, and past evidence of dry weather flows and contamination based on interviews with NPDES inspectors. Sampling results served as basis for selection of the most effective locations for stormwater capture and treatment.

Jurisdictional Groups 1 and 4, Santa Monica Bay Beaches Bacteria TMDL Implementation Plan, Los Angeles County, California. Analyzed bacterial shoreline monitoring data to re-evaluate, based on recent data, previously identified high priority watersheds. Produced technical memorandum summarizing analysis methodology and

prioritization recommendations, which will guide the source control and BMP siting and selection recommendations.

Proposition O, Westchester Stormwater Best Management Practices (BMP) Project, City of Los Angeles, Los Angeles, California. Project objective was to meet the Santa Monica Bay Beaches Wet-Weather Bacteria TMDL, while also removing other pollutants such as trash, oil, and grease from stormwater runoff. Provided technical assistance and support in the assessment of several project design alternatives, as well as a significant level of vendor coordination with respect to trash-capture devices. Also evaluated system hydraulics using Los Angeles County's hydraulic modeling program, Water Surface Profile Gradient (WSPG).

Low-Flow Infiltration Trench Monitoring for Dry-Weather TMDL Compliance, City of Hermosa Beach, California. Responsible for writing draft monitoring plan for proposed dry-weather infiltration trench, intended to assist in compliance with the Santa Monica Bay Beaches Bacteria TMDL. Content included recommendations on sampling frequency, monitoring points, equipment and procedures, constituents of concern, and quality control/assurance procedures.

NPDES Monitoring and Reporting, Newhall Land and Farming Company Water Reclamation Plant, Newhall, California. Assists with on-going NPDES baseline receiving water monitoring program to satisfy the requirements of the Regional Water Quality Control Board. Responsibilities include field sampling support, data management, and preparation of annual NPDES reports for the Regional Board.

Engineered Natural Treatment Systems for NPDES Water Quality Compliance for Confidential Client, Ventura County, California. Project involves the use of natural treatment systems designed to improve receiving water quality to meet NPDES effluent limits. Responsible for managing the hydraulic model MODRAT to simulate existing and proposed watershed conditions incorporating water quality improvement BMPs. Technical lead on Hydrology Report for CEQA evaluating potential project-related impacts to flood control, long-term water balance, and hydromodification. On-going support of conceptual BMP designs, water quality monitoring and reporting, and prioritization of monitoring locations for future BMP implementation based on a statistical comparison of monitoring results and compliance thresholds.



STACY K. LUELL, P.E.

**surface water management & monitoring
watershed & stormwater management
hydraulic and hydrologic modeling
industrial & municipal NPDES permit compliance**

EDUCATION

M.S., Biological and Agricultural Engineering, North Carolina State University,
Raleigh, North Carolina, 2011
B.S. (summa cum laude), Biosystems Engineering, Clemson University, Clemson,
South Carolina, 2009

REGISTRATIONS AND CERTIFICATIONS

Registered Professional Engineer, Civil, State of California, No. 82919
OSHA 40-Hour Hazardous Waste Operations Worker, No 31715

CAREER SUMMARY

Stacy Luell, P.E. has over six years of experience in hydrology, stormwater management, and surface water and BMP modeling. Stacy's graduate research work focused extensively on bioretention cells and swales, particularly in the linear highway environment. Her experience also includes conceptual BMP design and monitoring design development, synthesis of stormwater quality and hydrology data, technical report writing and QAPP development, dry and wet weather field sampling, and stormwater BMP performance evaluation. Her project experience has included topics such as environmental planning and municipal code revisions for MS4 Permit compliance; compliance with water quality objectives including Total Maximum Daily Loads (TMDLs), Basin Plan Objectives, and NPDES effluent limits; BMP design and evaluation; hydraulic and hydrologic modeling; industrial and commercial facility inspections; and dry and wet weather field sampling. Recent, relevant project experience is presented below.

Surface Water Management and Monitoring

Pier Avenue Improvement Project, Hermosa Beach, California. Periodically conducted in-field flow monitoring and maintenance tasks to assess the hydrologic benefits of a streetscape improvement project with the goal of capturing and treating stormwater/urban runoff from residential and commercial areas along Pier Avenue. Also assisted in data processing for monthly delivery to the client and helped create GIS figures and analyze data for the final certification report to the client.

Watershed and Stormwater Management

Southbay Beach Cities Enhanced Watershed Management Program (EWMP), Cities of Manhattan Beach, Hermosa Beach, Redondo Beach, Torrance, and County of Los Angeles, CA. Helped co-author and prepare the Southbay Beach Cities (Beach Cities) EWMP to meet requirements set forth in the Los Angeles Phase I MS4 Permit. Project work included data compilation and analysis to prioritize water body-pollutant combinations within the watershed; spatial analysis using GIS; data preparation for water quality and quantity modeling using the Structural BMP Prioritization and Analysis Tool (SBPAT) in support of performing a reasonable assurance analysis for the identified water quality priorities; co-authoring and preparing the Reasonable Assurance Analysis technical memorandum; and project management tasks.

OCTA Measure M Environmental Cleanup Program, Orange County Transit Authority, Orange County, California. Assisted in data management and data preparation for use in the Structural BMP Prioritization and Analysis Tool (SBPAT), a GIS application used to prioritize potential regional and multi-jurisdictional BMP siting locations to improve water quality throughout Orange County. Helped manage and perform the SBPAT analyses to obtain site ranking results and performed BMP evaluations for each grant program applicant. Created the monitoring plan approach for trash capture systems (Tier 1 funding) and regional, structural BMPs (Tier 2 funding) to assess the water quality benefits provided by the funded projects, per the requirements of Measure M Ordinance 3. Performed quantitative analyses to estimate expected trash load removal and water savings achieved by funded Tier 1 and Tier 2 projects, per funding year. Made numerous field visits to meet with grant program applicants, discuss their project designs and costs, provide an expert opinion about their proposed project, and make recommendations for project improvement. Serves as the point of contact for the client and grant applicants to provide project support and task management. Revised the Tier 2 Grant Program Planning Study in accordance with applicable water quality standards.

San Diego Green BMP Feasibility Study, San Diego County, California. Performed initial desktop characterization of a candidate catchment selected for the study. Characterization included gather source data and screening for soil types, slopes, land uses, right-of-ways, and potential site infrastructure interference. Developed thematic BMP concepts and created a spreadsheet model to preliminarily size these BMPs based on the site characterization and available right-of-way. This study is part of an effort to estimate bacteria and TSS load reduction performance in wet weather of various Green BMP concepts implemented in urbanized areas of San Diego County to address the Bacteria TMDL WQBELs.

Stacy K. Luell
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Hydraulic and Hydrologic Modeling

Los Angeles River Bike Path Feasibility Study, Los Angeles, California. Responsible for determining the number of usable days of a proposed bike path within a section of the Los Angeles River by performing hydrologic analyses on alternative bike path designs. Co-authored the subsequent technical memorandum which discussed hydrologic analyses, hydraulic analyses, and potential permitting issues for the project.

Industrial and Municipal NPDES Permit Compliance

Los Angeles Unified School District Stormwater Technical Manual Revisions, Los Angeles, California. Worked with the District to collectively develop a revised Stormwater Technical Manual based on updated County of Los Angeles LID standards and driven by the Los Angeles Phase 1 MS4 Permit standards. The Manual guides design architects, engineers, and the District's supervising design management staff during planning and design stages of new and redevelopment school planning to ensure appropriate stormwater reduction and treatment elements are included. Revisions included updates to the chapters and technical appendices of the Manual, as well as incorporation of LAUSD's existing BMP Selection White Paper, on which the District heavily relies.

NPDES Support for Field Laboratory Testing Facility, Southern California. Performed data analyses and generated analytical figures for a complex, high profile industrial stormwater NPDES permit. Data analyses were performed in contribution to an annual report and several memos to rank the effectiveness of various BMPs and potential BMP locations. Managed, and was lead author of, the 2013 and 2014 BMP ranking analysis memo. Performed multiple site visits to analyze stream stability and BMP performance and to conduct pebble counts and Facies mapping. Co-managed the SQL Server water quality database. Currently helping to manage and coordinate staff for a special monitoring study and synthesize input from the client and an independent Expert Panel to create the study's monitoring plan.

PROFESSIONAL EXPERIENCE

Geosyntec, Los Angeles, California, June 2011 – Present
Graduate Research Assistant, NC State University, Raleigh, NC, 2009 – 2011
McGill Associates, Greenville, South Carolina, 2008

CURTIS FANG, E.I.T

stormwater management
watershed management planning
water quality modeling
hydrologic and hydraulic analysis
data processing and assessment

EDUCATION

M.S., Environmental Engineering, University of Illinois at Urbana-Champaign, Urbana, IL. 2014
B.S., Environmental Engineering, University of Waterloo, Waterloo, ON, Canada. 2013

REGISTRATIONS AND CERTIFICATIONS

Engineer in Training, California Board for Professional Engineers, Land Surveyors, and Geologists, 154870

CAREER SUMMARY

Curtis Fang has two years of professional experience in industrial wastewater treatment design and stormwater BMP design. Curtis' graduate research work focused on the application of biological treatment to recover energy from industrial wastewater. Prior to graduate school, Curtis had internship experiences in various civil and environmental engineering public agency and consulting firms. He has working experience in SBPAT, ArcGIS, AutoCAD, HEC-RAS, SWMM, and EPANET.

Watershed Management Planning

Enhanced Watershed Management Program (EWMP) for Beach Cities Watershed Management Area, Beach Cities EWMP Group, City of Manhattan Beach, CA. Technical assistant for the completion of the Beach Cities EWMP to meet requirements set forth in the Los Angeles Phase I MS4 Permit. Project work included data compilation and analysis to prioritize water body-pollutant combinations within the watershed; water quality and quantity modeling using the Structural BMP Prioritization and Analysis Tool (SBPAT) in support of performing a reasonable assurance analysis for the identified water quality priorities; and conducting preliminary BMP design.

Hydromodification and Water Quality Data Analysis

Centennial Project Water Quality and Hydromodification Impact Analysis, Los Angeles County, CA. GIS data analyst supporting water quality and hydromodification impact analysis of a private land development site in Unincorporated Los Angeles County, CA. The objective of the project is to conduct project level impact analysis in support of preparing Project Environmental Impact Report. Primary responsibilities include performing field reconnaissance to characterize channel morphology and sediment supply, validating external data source, conducting GIS desktop analysis to acquire model input and quantify sediment supply, hydromodification model

Curtis, Fang, E.I.T
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development and execution, and technical report preparation

Stormwater Management

Malibu Sycamore Village Stormwater Capture System Design, Malibu Bay Company, Malibu, CA. Layout designer, modeler, and report writer for a stormwater capture system at a private redevelopment project site in Malibu, CA. The project is being designed to capture and re-use stormwater runoff for irrigation while demonstrating compliance with the Los Angeles Phase I MS4 Permit and the City of Malibu Local Coastal Program. Primary responsibility includes developing event-based SWMM v5.1 hydrological model to identify a preferred design alternative. Design elements include diversion, pumping, treatment, equalization and storage, and infiltration. Additional responsibilities include preparing site layout drawing, integrating design elements with landscaping design, and report writing.

Hydraulic and Hydrologic Modeling

City of Los Angeles Argo Drain Stormwater BMP Project, Los Angeles, CA. Hydraulic and hydrologic modeler for the Stormwater BMP Project (Proposition O) involving stormwater diversion, treatment, pumping, and infiltration for compliance with the Santa Monica Bay Bacteria TMDL, Enhanced Watershed Management Program, and Los Angeles Phase I MS4 Permit. Continuous simulations were performed using SWMM v5.1 to evaluate the design and long-term performance of the Project. Project scope included concept design validation, pre-design, geotechnical investigations, survey, environmental clearance, permitting, final design, and construction-phase support.

AWARDS AND RECOGNITIONS

Sandford Fleming Foundation Co-op Proficiency Award, University of Waterloo, 2013

TEACHING EXPERIENCE

University of Waterloo – 2011 – 2012. Teaching assistant and laboratory supervisor for: 1) *Introduction to Civil Engineering* - Responsible for designing and organizing topography field surveying lab on total station operation, and AutoCAD tutorial that introduced students to the dimensioning and plotting requirements for professional civil engineering drawings; 2) *Digital Computation in Civil Engineering* - Prepared and taught lectures on data processing and visualization techniques using Microsoft macros and Matlab.

Section 9: Sub-Consultants

Geosyntec is teaming with EcoKai Environmental, Inc. to provide the Beach Cities WMG with a proven team of local experts committed to successful implementation of the approved CIMP.

EcoKai Environmental, Inc. (EcoKai) is a southern California based environmental consulting firm dedicated to the conservation and responsible management of natural ecosystems. EcoKai specializes in the study and assessment of hydrological and biological resources and the application of solutions to environmental challenges. EcoKai's expertise includes water quality sampling and analyses, resource mitigation monitoring and reporting, aquatic and biological impact assessments, vegetation management, native habitat restoration, and regulatory permitting for the Clean Water Act and State Fish & Wildlife Code (ACOE §404, RWQCB §401 & 402, and CDFW §1600). The foundation of EcoKai's experience



is in southern California and the Santa Monica Bay. EcoKai is a certified small business enterprise (SBE), Regional Business Enterprise (RBE), and a state and federally recognized Small Business Set-Aside registered to practice professional engineering in California, Texas, Hawaii, and Washington.

EcoKai will lead the team's sample collection and analysis efforts, including Subtask 3.1, Santa Monica Bay Near-Shore Receiving Water Monitoring, and Task 4, Stormwater Outfall Monitoring. To accomplish these goals, EcoKai will utilize the services of the Center for Santa Monica Bay Studies, a joint program of Loyola Marymount University and The Bay Foundation.

EcoKai is not facing any financial condition that will impede its ability to complete the City's work.

Dominguez Channel Water Quality Sampling

Lead Staff: Jim Burton, Water Sampling Manager
Duration: March 2003
Location: Los Angeles, California
Budget: \$500,000

The Dominguez Channel Water Quality Sampling project was a water quality and sediment sampling program in a portion of the Dominguez Channel mandated by the Los Angeles Regional Water Quality Control Board. Over a five week period, EcoKai's sampling team collected approximately 112 water samples per day and transported them to an analytical laboratory following strict Chain-of-Custody procedures. These water samples were

analyzed for a variety of water quality parameters including semi-volatile organic compounds, pesticides, PCB's, heavy metals, bacteriological organisms and BOD. Additional water quality parameters (including temperature, pH, electrical conductivity, oxidation-reduction potential, DO) were measured during each daily sample event utilizing a multi-parameter water quality monitoring equipment. In addition,

Project Manager Jim Burton directed and participated in the development of a customized Microsoft Access data base with a project specific statistical analysis tool and graphing application program for ease of presenting and reporting water quality trends. The database was essential in the preparation of a final report that was prepared for RWQCB mitigation requirements.

Section 10: Contract Comments

8(A)(1): Indemnification. Please add the word “negligent” in front of “acts or omissions,” and remove the words “active or” in front of “passive” and replace the word “sole” with “active”.

This revision is intended to align these terms with California Civil Code Section 2782, and the risks and liabilities normally undertaken for consulting, engineering or similar professional services.

Section 11: Cost Proposal

The following tables detail a breakdown of cost by task and labor class using the provided Excel spreadsheet.

Prime Consultant: Geosyntec

Beach Cities CIMP Implementation Annual Cost Breakdown

Task #	Description	PRIME CONSULTANT LABOR										Total Prime Consultant Hours	Prime Consultant Labor Cost	Sub-Consultant(s) Cost	Analytical Laboratory Charges	Equipment & Other Direct Costs	FY 2016 Total Cost	FY 2017 Total Cost	FY 2018 Total Cost	FY 2019 Total Cost	FY 2020 Total Cost			
		Rate	Principal	Assistant	Project Engineer	Professional	Senior Professional	Staff Professional	Technician	Admin. Staff	Classical													
Project Management, Communications, Meetings																								
1.1	Schedule				2							18	\$	2,514	\$	990	\$0	\$3,504	\$0	\$0	\$0			
1.2	Project Kickstart	36			180						36	\$	752	\$	42,480	\$	23,024	\$0	\$21,838	\$21,838	\$21,838			
1.3	1.3.1 Meeting Preparation and Attendance	24			120						24	\$	350	\$	19,054	\$	5,413	\$1,420	\$24,922	\$21,912	\$21,912			
1.3	1.3.2 Meeting Preparation and Attendance											\$	48	\$	8,388	\$	27,456	\$24,952	\$13,788	\$13,788	\$13,788			
1.4	1.4.1 Permitting											\$	17	\$	2,560	\$	693	\$0	\$3,256	\$0	\$0	\$0		
1.4	1.4.2 Permitting											\$	0	\$	0	\$	0	\$0	\$0	\$0	\$0	\$0		
1.5	1.5.1 Sampling Team Activation Memo											\$	2	\$	8	\$	16	\$0	\$0	\$0	\$0	\$0		
1.5	1.5.2 Sampling Team Activation Memo											\$	2	\$	8	\$	16	\$0	\$0	\$0	\$0	\$0	\$0	
1.6	1.6.1 Monitoring Equipment and DDT/PCBs Sampling Memo											\$	1	\$	4	\$	12	\$0	\$0	\$0	\$0	\$0		
1.6	1.6.2 Monitoring Equipment and DDT/PCBs Sampling Memo											\$	1	\$	4	\$	12	\$0	\$0	\$0	\$0	\$0	\$0	
1.7	1.7.1 Laboratory Documentation											\$	1	\$	4	\$	12	\$0	\$0	\$0	\$0	\$0		
1.7	1.7.2 Laboratory Documentation											\$	1	\$	4	\$	12	\$0	\$0	\$0	\$0	\$0	\$0	
1.8	1.8.1 Exceedance Notification and Action Plan											\$	1	\$	4	\$	12	\$0	\$0	\$0	\$0	\$0		
1.8	1.8.2 Exceedance Notification and Action Plan											\$	1	\$	4	\$	12	\$0	\$0	\$0	\$0	\$0	\$0	
1.9	1.9.1 Source Investigation Memo											\$	1	\$	4	\$	12	\$0	\$0	\$0	\$0	\$0		
1.9	1.9.2 Source Investigation Memo											\$	1	\$	4	\$	12	\$0	\$0	\$0	\$0	\$0	\$0	
1.10	1.10.1 CIMP Modification Letter (if needed)											\$	4	\$	708	\$	0	\$0	\$708	\$0	\$0	\$0		
1.10	1.10.2 CIMP Modification Letter (if needed)											\$	4	\$	708	\$	0	\$0	\$708	\$0	\$0	\$0	\$0	
SUBTOTAL TASK 1:		64	17	0	434	0	180	0	0	0	30	0	758	\$	125,254	\$	60,159	\$	\$6,270	\$76,547	\$57,568	\$57,568	\$57,568	
Health and Safety Plan/Traffic Control Plan/Encroachment Permits																								
2.1	2.1.1 Health and Safety Plan/Traffic Control Plan/Encroachment Permits	0	0	0	60	72	0	0	0	0	0	0	142	\$	23,960	\$	7,832	\$719	\$17,891	\$7,288	\$7,288	\$7,288		
Beach Wave Monitoring																								
3.1	3.1.1 SMB Near Shore RW Monitoring	0	0	0	0	0	0	0	0	0	0	0	0	\$	-	\$	11,786	\$	113,111	\$9,216	\$45,316	\$44,084	\$44,716	\$44,716
3.2	3.2.1 SMB TRM Shoreline Monitoring	0	0	0	0	0	0	0	0	0	0	0	0	\$	-	\$	137,670	\$	113,111	\$0	\$45,897	\$45,897	\$45,897	\$45,897
SUBTOTAL TASK 3:		0	0	0	0	0	0	0	0	0	0	0	0	\$	-	\$	148,856	\$	113,111	\$9,216	\$91,173	\$90,941	\$90,973	\$90,973
Beach-Stromometer Outfall Monitoring																								
4.1	4.1 & 4.2 Outfall Monitoring	0	0	0	0	0	0	0	0	0	0	0	0	\$	-	\$	93,595	\$	74,974	\$27,488	\$73,181	\$33,649	\$43,109	\$43,109
4.3	4.3.1 Toxicity Monitoring	0	0	0	0	0	0	0	0	0	0	0	0	\$	-	\$	2,925	\$	19,888	\$0	\$4,925	\$4,925	\$4,925	\$4,925
SUBTOTAL TASK 4:		0	0	0	0	0	0	0	0	0	0	0	0	\$	-	\$	96,080	\$	85,663	\$27,498	\$78,106	\$38,574	\$48,034	\$48,034
Beach-Stromometer Outfall Monitoring																								
5.1	5.1.1 Source Investigations	12			54		140					\$	208	\$	31,672	\$	29,326	\$0	\$390	\$17,394	\$17,394	\$26,598	\$26,598	
5.2	5.2.1 Monitoring of Significant Outfalls	0			18		120					\$	158	\$	23,916	\$	8,838	\$48,820	\$1,628	\$28,964	\$27,484	\$27,484	\$27,484	
5.3	5.3.1 Toxicity Monitoring	0			0		0					\$	0	\$	-	\$	3,111	\$7,324	\$0	\$3,146	\$3,146	\$3,146	\$3,146	
5.4	5.4.1 Prepare/update a GIS database	0			48		0					\$	48	\$	7,440	\$	-	\$0	\$0	\$2,480	\$2,480	\$2,480	\$2,480	
SUBTOTAL TASK 5:		18	0	0	104	48	244	0	0	0	0	0	414	\$	63,018	\$	41,952	\$56,627	\$1,980	\$51,524	\$50,444	\$58,708	\$58,110	\$58,110
Data Assessment and Reporting																								
6.1	6.1.1 Monitoring Records				30		72					\$	15,000	\$	4,642	\$0	\$0	\$6,726	\$6,483	\$6,483	\$6,483	\$6,483		
6.2	6.2.1 SWMB TRM Shoreline Monitoring Weekly and Monthly Data Submittal						84					\$	84	\$	11,610	\$	-	\$0	\$5,130	\$3,240	\$3,240	\$3,240	\$3,240	
6.3	6.3.1 Semi-annual Data Submission	5			24	24	132					\$	185	\$	26,963	\$	-	\$0	\$15,491	\$5,796	\$5,796	\$5,796	\$5,796	
6.4	6.4.1 External Data Assessment				24		124					\$	148	\$	20,888	\$	-	\$0	\$8,236	\$6,276	\$6,276	\$6,276	\$6,276	
6.5	6.5.1 Annual INCR	24			84		208					\$	328	\$	50,712	\$	18,928	\$0	\$29,738	\$20,516	\$20,516	\$20,516	\$20,516	
SUBTOTAL TASK 6:		29	0	0	174	24	622	0	0	0	0	0	849	\$	125,307	\$	18,700	\$0	\$58,501	\$44,251	\$44,251	\$44,251	\$44,251	
Total Annual Monitoring Cost (Tasks 1 thru 6)												\$	237,635	\$	972,678	\$	254,400	\$	48,881	\$74,360	\$311,637	\$294,488	\$298,612	\$298,612
																		Total 5 Years						
																		\$1,053,498						

* Adjust labor classes to fit firm's classes and utilization on the project
 ** This reflects labor effort. Sub-consultant direct costs are included in column "3"
 *** Roll up laboratory cost from detail on one or more Lab Cost sheets

Sub-Consultant: EcoKai

Sub-Consultant Cost Breakdown

Task #	Description	SUB-CONSULTANT LABOR										Total Sub-Consultant Hours	Sub-Consultant Labor Cost	Equipment & Other Direct Costs	FY 15/16 Total Cost	FY 16/17 Total Cost	FY 17/18 Total Cost	
		Class #:	Principal Engineer	Senior Scientist & QA/QC	Project Scientist	Senior Field Coordinator	Field Leaders (City 2-5)	Field Technicians (City 4-6)	Admin. Staff	Buy Foundation Scientist								
		Rate	\$125	\$115	\$95	\$75	\$65	\$55	\$45	\$35								
		Hours	108	139	118	101	98	136	20	54								
Project Management, Communications, Meetings																		
1.1	Schedule		2	4	2						8	\$900		\$900	\$0	\$0		
1.2	Project Management		40	12		8					60	\$6,980		\$6,980	\$6,980	\$6,980		
1.3 & 1.4	Meeting Preparation and Attendance		8	4							16	\$1,640	\$250	\$1,890	\$1,890	\$1,890		
1.5	Permitting		8	8	32	40				8	96	\$8,320	\$1,500	\$9,820	\$9,820	\$9,820		
1.6	Sampling Team Activation Memo		2		4						6	\$630		\$630	\$0	\$0		
1.7	Monitoring Equipment and DDT/PCBs Sampling Memo		2	10							12	\$1,400		\$1,400	\$0	\$0		
1.8	Laboratory Documentation										0	\$0		\$0	\$0	\$0		
1.9	Exceedance Notification and Action Plan		2	6							8	\$940		\$940	\$0	\$0		
1.10	Source Investigation Memo										0	\$0		\$0	\$0	\$0		
1.11	CMP Modification Letter (if needed)										0	\$0		\$0	\$0	\$0		
	SUBTOTAL TASK 1:		64	44	38	48	0	0	12	0	206	\$20,810	\$1,750	\$22,560	\$18,680	\$18,680		
Health and Safety Plan/Traffic Control Plan/Encroachment Permits																		
2.1	Health and Safety Plan/Traffic Control Plan/Encroachment Permits		8	12	12	4					36	\$4,720	\$650	\$5,370	\$1,200	\$1,200		
Receiving Water Monitoring																		
3.1	SMB Near Shore RW Monitoring			3						30	36	\$3,420	\$3,500	\$6,920	\$5,800	\$6,000	\$6,000	
3.2	SMB8 TMDL Shoreline Monitoring				3					0	0	\$0		\$0	\$0	\$0	\$0	
	SUBTOTAL TASK 3:		0	3	0	3	0	0	0	30	36	\$3,420	\$3,500	\$6,920	\$5,800	\$6,000		
Summer Outfall Monitoring																		
4.1 & 4.2	Outfall Monitoring (3 events, 4 sites; safety meetings, mob-demob, & coordination)		24	24	24	30	90	120	8		320	\$23,100	\$14,500	\$37,600	\$28,440	\$28,000	\$28,000	
4.3	Toxicity Monitoring				4	4				8	8	\$640	\$125	\$765	\$765	\$765		
	SUBTOTAL TASK 4:		24	24	28	30	94	120	8	0	328	\$23,740	\$14,625	\$38,365	\$29,205	\$28,765		
Non-Summer Outfall Monitoring																		
5.1	Source Investigations			24	24					24	72	\$7,320	\$100	\$7,420	\$7,420	\$12,000	\$12,000	
5.2	Monitoring of Significant Outfalls			4	4	16		16		40	40	\$2,920	\$900	\$3,820	\$3,500	\$3,500	\$3,500	
5.3	Toxicity Monitoring				4	4				8	8	\$640	\$125	\$765	\$765	\$765		
5.4	Prepare/Update GIS database									0	0	\$0		\$0	\$0	\$0		
	SUBTOTAL TASK 5:		0	28	32	16	4	16	0	24	120	\$10,880	\$1,125	\$12,005	\$11,685	\$16,265		
Data Assessment and Reporting																		
6.1	Monitoring Records			4	8					12	12	\$1,220		\$1,220	\$1,500	\$1,500		
6.2	SMB88 TMDL Shoreline Monitoring Weekly and Monthly Data Submittal									0	0	\$0		\$0	\$0	\$0		
6.3	Semi-annual Data Submission									0	0	\$0		\$0	\$0	\$0		
6.4	External Data Assessment									0	0	\$0		\$0	\$0	\$0		
6.5	Annual IMCA		12	24						36	36	\$4,260		\$4,260	\$4,260	\$4,260		
	SUBTOTAL TASK 6:		12	28	8	0	0	0	0	0	36	\$4,260		\$4,260	\$4,260	\$4,260		
Total Annual Monitoring Costs (Tasks 1 thru 6)																		
														\$90,800	\$72,840	\$76,680	\$76,680	
																	\$239,320	

* Adjust labor classes to fit firm's classes and utilization on the project

Lab Cost

Task #	Description	Parameter/Constituent Groups by Analysis*													
		Hardness	Alkalinity (as CaCO3)	Ammonia-N	Dissolved Oxygen (Dissolved)	Chemical Oxygen Demand	Chloride, Nitrate	Chloride, Nitrate, Sulfate	Cyanide Total	Dissolved Oxygen (40000 G)	Calcium by Electrode (80001 F)	Enterococci, E. coli	EPA 825 - 200 MIBL - Cyanide	EPA 825 - Organophosphorus Pesticides	EPA 827 - Organics
	Unit Price	\$16.00	\$16.30	\$45.00	\$40.00	\$70.00	\$75.00	\$100.00	\$35.00	\$0.00	\$20.00	\$35.00	\$160.00	\$193.00	\$100.00
	Quantity**	75.00	1.50	15.00	9.50	9.50	9.50	15.50	24.00	15.50	17.00	1.50	24.00	9.50	
Receiving Water Monitoring															
3	3.1 SMB Near Shore RW Monitoring		3	3	3	3	3	3	6	3	3	3	3	3	
	QA/QC		0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	
	SUBTOTAL TASK 3		3.67	3.67	3.67	3.67	3.67	3.67	3.67	6.67	3.67	3.67	3.67	3.67	
Shorewater Outfall Monitoring															
4	4.1 & 4.2 Outfall Monitoring		12.00	3.00	7.50	3.00	3.00	3.00	3.00	7.50	12.00	7.50	3.00	3.00	
	QA/QC		3.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	
	SUBTOTAL TASK 4		12.67	3.67	8.17	3.67	3.67	3.67	3.67	8.17	12.67	8.17	3.67	10.50	
Non-Shorewater Outfall Monitoring															
5	5.2 Monitoring of Significant Outfalls		6.00	1.50	3.00	1.50	1.50	1.50	3.00	6.00	3.00	4.50	1.50	4.50	
	QA/QC		0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	
	SUBTOTAL TASK 5		6.67	2.17	3.67	2.17	2.17	2.17	3.67	6.67	3.67	5.17	2.17	7.50	
Total Annual Monitoring Cost (Tasks 3 thru 6)															

* Expand or Adjust to meet all required analyses as per OMP, may provide additional roll-up sheets as needed
 ** include QA/QC samples, e.g., duplicates, field blanks, etc. in the number of samples

Notes:
 The cost of analytical procedures for Task 3.2 (Shoreline monitoring) is included in the total cost for Michelson labs to conduct the sampling, analysis, and reporting. Laboratory costs for this task have not been provided.
 The quantity of analytes cannot be accurately known in most cases, since the sample analyses will depend on the initial receiving water sample results.
 Total analytical costs are based on the assumption that, following the first receiving water sample event, the cost of constituents will be 25% of the total cost to analyze all of Permit Table E-2

Assumptions:
 3 ww toxicity samples per year at 2 outfalls
 3 dr outfalls monitored twice per year (assume 2 in SMB, one in DC)
 two dr toxicity samples per year at two outfalls
 2 RW sites
 WW outfalls: 2 in SMB each-year + 2 in DC each year

Task #	Description	Unit Price	Parameter/Constituent Groups by Analysis*															
			CP1601	CP1602	CP1603	CP1604	CP1605	CP1606	CP1607	CP1608	CP1609	CP1610	CP1611	CP1612	CP1613	CP1614	CP1615	
3	Monitoring Water Monitoring	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87		
	3.1 5488 near shore 876 monitoring	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87		
	QA/QC	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67		
	SUBTOTAL TASK 3	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67		
4	Monitoring Outfall Monitoring	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87		
	4.1 8 4.2 Outfall Monitoring	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87		
	QA/QC	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87		
	4.3 Toxicity Monitoring	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87		
	SUBTOTAL TASK 4	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87		
5	Monitoring Significant Outfalls	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87		
	5.1 Monitoring of Significant Outfalls	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87		
	QA/QC	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87		
	5.3 Toxicity Monitoring	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87		
	SUBTOTAL TASK 5	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87		
	Total Annual Monitoring Cost (Tasks 1 thru 5)																	

* Expanded or Adjust to meet all required analyses as per CMAP, may provide additional roll-up price
 ** include QA/QC samples, e.g., analytical, field checks, etc. in the number of samples

Notes:
 The cost of analytical procedures for Task 3.2 (Shoreline monitoring) is included in the
 The quantity of analyses cannot be accurately known in most cases, since the sample
 Total analytical costs are based on the assumption that, following the first receding sea

- Assumptions
 3 low toxicity samples per year at 2 outfalls
 3 low toxicity monitoring twice per year (assume 2 in 5488, one in DC)
 1 low toxicity samples per year at two outfalls
 2 FW sites
 WW outfalls: 2 in 5488 each year + 2 in DC each year

Task #	Description	Unit Price	Quantity**	Parameter/Constituent Groups by Analysis**						Total Analytical Cost	Other Direct Laboratory Costs	Sub-total	10% fee contingency	Annual Total
				TD002	DPH 021 (General Monitor)	DPH 021 (Detailed)	DPH 021 (Detailed Nitrate)	TR	ES01 (pH)					
Monitoring Water Monitoring														
3	3.1 SAM near shore water monitoring		0	0	0	0	0	0	\$113,111		\$28,524	\$1,852	\$37,704	
	QA/QC		6.00	6.00	6.00	6.00	4.00	0.00		\$6,337	\$34,841	\$2,852	\$37,704	
	SUBTOTAL TASK 3		6.00	6.00	6.00	6.00	4.00	0.00	113,111		\$28,524	\$1,852	\$37,704	
Monitoring Outfall Monitoring														
4	4.1 & 4.3 Outfall monitoring								\$74,674		\$16,877	\$1,688	\$24,891	
	QA/QC									\$6,337		\$333	\$3,640	
	4.3 Toxicity Monitoring		3.00	0.00	6.00	0.00	0.00	0.00	\$85,663		\$23,237	\$2,021	\$28,554	
	SUBTOTAL TASK 4		3.00	0.00	6.00	0.00	0.00	0.00	\$160,347		\$36,944	\$3,742	\$44,040	
Non-Streamwater Outfall Monitoring														
5	5.2 Monitoring of Significant Outlets								\$48,801		\$8,694.50	\$888.45	\$16,100.75	
	QA/QC									\$6,337		\$333	\$3,640	
	5.3 Toxicity Monitoring				4				\$7,925		\$1,220.00	\$222.00	\$2,442.00	
	SUB TOTAL TASK 5				4				\$56,726		\$9,914.50	\$1,110.45	\$10,547.25	
Total Annual Monitoring Cost (Tasks 3 thru 5)														
									\$230,184		\$56,382.50	\$5,785.10	\$62,150.25	

* Exposed or equal to meet all required analyses as per CMAA, may provide additional roll-up data
 ** include QA/QC samples, e.g., tripblanks, field blanks, etc. in the number of samples

Notes:
 The cost of analytical procedures for Task 3.2 (Shoreline monitoring) is included in the
 The quantity of analyses cannot be accurately known in most cases, since the sample &
 Total analytical costs are based on the assumption that, following the first receiving wa

- Assumptions
 3 ww toxicity sampler per year at 2 outfalls
 3 c/w outfalls monitored twice per year (assume 2 in SAM, one in OQ)
 two ww toxicity samples per year at two outfalls
 2 RW sites
 WW outfalls: 2 in SAM each year + 2 in OQ each year

Fee Schedules

Geosyntec

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GEOSYNTEC CONSULTANTS 2015 RATE SCHEDULE

Staff Professional	\$115
Senior Staff Professional	\$135
Professional	\$155
Project Professional	\$177
Senior Professional	\$198
Associate	\$218
Principal	\$235
Engineering Technician I	\$ 59
Engineering Technician II	\$ 66
Senior Engineering Technician I	\$ 72
Senior Engineering Technician II	\$ 76
Site Manager I	\$ 84
Site Manager II	\$ 93
Construction Manager	\$106
Designer	\$127
Senior Drafter/Senior CADD Operator	\$ 112
Drafter/CADD Operator/Artist	\$ 98
Project Administrator	\$ 60
Clerical	\$ 50

Rates are provided on a confidential basis and are client and project specific.

Unless otherwise agreed, rates will be adjusted annually based on a minimum of the applicable Consumer Price Index (CPI).

Rates for field equipment, health and safety equipment, and graphical supplies presented upon request.

EcoKai

CONFIDENTIAL

**EcoKai
2015 RATE SCHEDULE**

Field Technician	\$ 55
Field Leader	\$ 65
Senior Field Coordinator	\$ 75
Project Scientist	\$ 95
Senior Scientist & QA/QC	\$115
Principal Engineer	\$125
Bay Foundation Scientist	\$ 95
Administrator	\$ 45

Percentages

Contractor	Annual average of labor cost	Relative % contribution of labor	Percent contribution of average total scope of service cost*
Geosyntec	115143.6667	42.3589643	32
EcoKai	86646.66667	31.87550967	24
Michelson	41688	15.33614965	12
Barricade	28350	10.42937638	8
total (labor)	271828.3333		
average total scope of service	\$354,877.33		

*These are percentages of the total scope of service which includes additional items such as direct expenses.

Attachment A: Draft Schedule

December 2015

- Initiate process to obtain required permits.
- Submit detailed schedule and outfall prioritization memorandum within one week of Project initiation.
- Geosyntec to begin weekly SMBBB TMDL Shoreline Monitoring reporting. To continue weekly throughout duration of Project.
- Submit monitoring mobilization plan, exceedance notification and action plan, and requested laboratory information within two weeks of Project initiation.
- Initiate desktop assessment and field (manhole) screening for Phase I prioritized outfalls with significant non-stormwater discharge within two weeks of Project initiation.
- Complete investigation of Phase 1 outfalls by December 28.
- Submit Site Health and Safety Plan and Traffic Control Plan by end of month.
- Geosyntec to begin monthly SMBBB TMDL Shoreline Monitoring reporting. To continue monthly throughout duration of Project.

January 2016

- Submit the Phase 1 source investigation memorandum by January 27.
- Submit the monitoring equipment memorandum by end of month.

January 2016 – May 2016

- Three wet weather monitoring events (weather dependent).
- Monitoring records (within 14 days of each selected monitoring event).

February 2016 – June 2016

- Two dry weather outfall monitoring events (to be coordinated with receiving water monitoring by other agencies, to the maximum extent practicable).

April 2016

- Semi-annual data report submitted by April 15 (Note: the reporting period for this report is July 1 to December 31, 2015. It is likely no data will be available for this submission).

June 2016

- GIS data updated prior to June 30
- Submit annual health and safety plan prior to new fiscal year

July 2016 – June 2017

- Two dry weather outfall monitoring events (to be coordinated with receiving water monitoring by other agencies, to the maximum extent practicable).

September 2016

- Draft annual monitoring data spreadsheet by September 1.
- Initiate desktop assessment and field (manhole) screening for Phase 2 prioritized outfalls with significant non-stormwater discharge.

October 2016

- Draft annual IMCR by October 1.
- Semi-annual data report for period January 1 to June 30, 2016 will be submitted.

October 2016 – May 2017

- Three wet weather monitoring events (weather dependent).
- Monitoring records (within 14 days of each selected monitoring event).

December 2016

- Complete investigation of Phase 2 outfalls by December 28.
- Final annual IMCR by December 1.

January 2017

- Submit the Phase 2 source investigation memorandum by January 27.

April 2017

- Semi-annual data report submitted by April 15, covering period July 1 to December 31, 2016.

June 2017

- GIS data updated prior to June 30
- Submit annual health and safety plan prior to new fiscal year

July 2017 – June 2018

- Two dry weather outfall monitoring events (to be coordinated with receiving water monitoring by other agencies, to the maximum extent practicable).

September 2017

- Draft annual monitoring data spreadsheet by September 1.
- Initiate desktop assessment and field (manhole) screening for Phase 3 prioritized outfalls with significant non-stormwater discharge.

October 2017

- Draft annual IMCR by October 1
- Semi-annual data report for period January 1 to June 30, 2017 will be submitted.

October 2017 – May 2018

- Three wet weather monitoring events (weather dependent).
- Monitoring records (within 14 days of each selected monitoring event).

December 2017

- Complete investigation of Phase 3 outfalls by December 28.
- Final annual IMCR by December 1.

January 2018

- Submit the Phase 3 source investigation memorandum by January 27.

April 2018

- Semi-annual data report submitted by April 15, covering period July 1 to December 31, 2017.

June 2018

- GIS data updated prior to June 30
- Submit annual health and safety plan prior to new fiscal year

September 2018

- Draft annual monitoring data spreadsheet by September 1.

October 2018

- Draft annual IMCR by October 1
- Semi-annual data report for period January 1 to June 30, 2018 will be submitted.

December 2018

- Final annual IMCR by December 1

Attachment B: Signature Page

SIGNATURE PAGE

The undersigned has checked carefully the entire Request for Proposal (RFP) #1055-16, Monitoring and Reporting Services for the Implementation of the Coordinated Integrated Monitoring Program for the Beach Cities Watershed Management Group. By signing this document, I attest that I am authorized to contractually bind the company listed, and will meet the Proposal requirements if awarded a contract.

Dated this 10th day of November 2015

Name Printed: Ken Susilo, P.E., D.WRE, CPSWQ

Signature: 

Title: Project Director, Principal, Vice President

Company Name: Geosyntec Consultants, Inc.

Business Address: 3415 S. Sepulveda Blvd., Suite 500

City, State, Zip Code: Los Angeles, CA 90034

Telephone Number: 310.975.6111

Fax Number: 310.957.6101

E-mail: ksusilo@geosyntec.com