Geosyntec consultants

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5 October 2017

Town of Atherton
Attn: City Clerk
Town of Atherton
91 Ashfield Road
Atherton, CA 94027

Subject: Request for Qualifications from Engineering Design Consultants for the Atherton Water Capture Project

Dear Mr. Hanneman:

The Town of Atherton (City) requires experts in the fields of water capture systems design, geotechnical engineering, landscape architecture, and CEQA compliance. This letter constitutes Geosyntec Consultants, Inc's (Geosyntec) Letter of Interest in responding to the City's Request for Qualifications from Engineering Design Consultants for the Atherton Water Capture Project dated 7 September 2017.

The Geosyntec Team will leverage our extensive local and national knowledge of water quality, best management practices, geotechnical engineering, groundwater hydrology and basin management, and surface water hydrology and hydraulics to support the Town of Atherton for this project. We are committed to communications and responsiveness, project delivery and quality. This team brings a unique approach that builds upon our technical strengths. These include:

- Considerable local knowledge, including in-depth familiarity with the requirements of the San Francisco Bay Area Municipal Regional Permit (MRP) requirements, detailed experience in the Atherton watershed and Atherton channel, and design of the Holbrook-Palmer landscaping plan;
- Demonstrated track record of large (>$10M), centralized, constructed stormwater and urban runoff BMP projects that include elements of infiltration, capture and irrigation use, recreation, and habitat development;
- Innovation and expertise with all project facets – we will combine technical disciplines for enhanced multi-benefit solutions, with a willingness to collaborate with the Town, along with the Town and San Mateo County consultants;
- Attention and focus on long term performance – we integrate thinking about multi-benefit facility components and operations and maintenance for water quality, flood control, and

non-potable water supply development, including the addition of real-time optimization for enhanced performance;

- In-depth knowledge of BMP optimization and real-time controller technologies;
- Recognized expertise with specific methods, strategies, and limitations associated with various infiltration approaches; and
- Intimate familiarity with Caltrans statewide MS4 Permit requirements, mercury and PCBs TMDLs, trash reduction requirements, and Reasonable Assurance Analyses.

The Geosyntec Team is led by Alkan Bektur as Project Manager and Lisa Austin as Principal Engineer and Project Director. This Project Management team is recognized for technical excellence, local expertise, and project delivery, and is committed to supporting the Town of Atherton. Geosyntec is joined by team member BKF Engineers, providing key expertise in local hydraulics and trash capture design; MIG, Inc., bringing local California Environmental Quality Act (CEQA) expertise; Callander Associates, who developed the landscaping plan for Holbrook Palmer Park; Hexagon Transportation Consultants, Inc., with local transportation planning support; and Opti, Inc, providing real-time control operation for facility optimization.

As highlighted in our team's SOQ, the key differentiators of the Geosyntec Team include a wealth of directly relevant, local experience that can be built upon to deliver a locally-specific, maximized multi-benefit facility solution to the Town of Atherton

We recognize the technical and schedule challenges associated with project development and are poised to provide the necessary work in a timely manner. We appreciate your consideration of our qualifications submittal. If you have any questions, please contact Project Director Lisa Austin at (510) 285-2757 or LAustin@geosyntec.com or Project Manager Alkan Bektur at (510) 285-2791 or ABektur@geosyntec.com.

Sincerely,

Lisa Austin, P.E.
Principal

Randy Brandt, P.G.
Vice President

INTRODUCTION

Geosyntec Consultants, Inc.

Geosyntec Consultants, Inc. (Geosyntec) is a multidisciplinary engineering and consulting firm with 1,200 employees in over 80 offices worldwide. Geosyntec works with public and private sector clients to address complex problems involving the environment, natural resources, and civil infrastructure. Since our founding in 1983 as a geotechnical engineering consulting firm, we have developed additional core practices in areas where we can deliver practical solutions with substantially improved benefits to our clients. We provide services in geotechnical engineering, hydrogeology, groundwater monitoring and reporting, stormwater quality planning, water resources, environmental consulting, and engineering design and construction management. Using our expertise in geotechnical and geoenvironmental engineering, water resources management, and environmental management, Geosyntec provides a full range of innovative services for new and existing surface water management systems. Our practitioners respond to unique technical and environmental challenges facing federal, state, municipal, industrial, and private owners and operators to create site-specific solutions that are efficient, cost effective, and enduring. Geosyntec is known for our innovative work in stormwater and surface water quality management, including best management practice (BMP) design and assessment, Total Maximum Daily Load (TMDL) studies and implementation planning, watershed and stormwater quality modeling; water quality monitoring planning, implementation, and reporting; and development of construction, industrial, and municipal National Pollutant Discharge Elimination System (NPDES) compliance programs.

Geosyntec is an employee-owned corporation with no parent company, and is not owned in whole or part by another business organization or individual. We have been in business under the present business name for 34 years and have been providing geotechnical, geoenvironmental, and water resources management services with staffing from our San Francisco Bay Area Branch offices since 1991.

Geosyntec is financially stable and has the necessary financial and personnel resources to provide services at the level required by the Town of Atherton. 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 (ENR) 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").

Official Name and Address of Company:
Geosyntec Consultants, Inc.

Corporate Address:
900 Broken Sound Pkwy NW, Suite 200
Boca Raton, FL 33487

Insurance Coverage

Client#: 25361 GEOSCONS

ACORD **CERTIFICATE OF LIABILITY INSURANCE** DATE (MM/DD/YYYY) 3/16/2017

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Greyling Ins. Brokerage/EPIC 3780 Mansell Road, Suite 370 Alpharetta, GA 30022	CONTACT NAME: Carly Underwood PHONE (A/C, No, Ext): 770.552.4225 FAX (A/C, No): 866.550.4082 E-MAIL ADDRESS: carly.underwood@greyling.com
INSURED Geosyntec Consultants, Inc. 900 Broken Sound Parkway NW, Suite 200 Boca Raton, FL 33487	INSURER(S) AFFORDING COVERAGE — NAIC # INSURER A: National Union Fire Ins. Co. — 19445 INSURER B: Aspen American Insurance Compan — 43460 INSURER C: New Hampshire Ins. Co. — 23841 INSURER D: Allianz Underwriters Insurance — 36420 INSURER E: INSURER F:

COVERAGES CERTIFICATE NUMBER: 17-18 REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY			5268179	04/01/2017	04/01/2018	EACH OCCURRENCE	$1,000,000
	CLAIMS-MADE X OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$500,000
							MED EXP (Any one person)	$25,000
							PERSONAL & ADV INJURY	$1,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$2,000,000
	POLICY X PRO-JECT X LOC						PRODUCTS - COMP/OP AGG	$2,000,000
	OTHER							$
A	AUTOMOBILE LIABILITY			4489673 (AOS)	04/01/2017	04/01/2018	COMBINED SINGLE LIMIT (Ea accident)	$1,000,000
A	X ANY AUTO			4489674 (MA)	04/01/2017	04/01/2018	BODILY INJURY (Per person)	$
	ALL OWNED AUTOS / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	HIRED AUTOS / NON-OWNED AUTOS						PROPERTY DAMAGE (Per accident)	$
								$
B	X UMBRELLA LIAB X OCCUR			CX005GA17	04/01/2017	04/01/2018	EACH OCCURRENCE	$10,000,000
	EXCESS LIAB CLAIMS-MADE						AGGREGATE	$10,000,000
	DED X RETENTION $0							$
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY			15893709 (AOS)	04/01/2017	04/01/2018	X PER STATUTE / OTH-ER	
A	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N: N	N/A		15893710 (CA)			E.L. EACH ACCIDENT	$1,000,000
C	(Mandatory in NH)			15893711 (ME)			E.L. DISEASE - EA EMPLOYEE	$1,000,000
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - POLICY LIMIT	$1,000,000
D	Professional Liab /Contractors Pollution Liab			EIL2008657	04/01/2017	04/01/2018	Per Claim $8,000,000 Aggregate $10,000,000	

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER

Sample Certificate

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

ACORD 25 (2014/01) 1 of 1 #S675721/M674575 The ACORD name and logo are registered marks of ACORD CUND1

References

Project: Caltrans District 4 Phase I Plan for TDML Implementation and Trash Reduction
Hardeep Takhar, MS, PE | P: (415) 408-9057 | E: hardeep.s.takhar@dot.ca.gov
Water Quality Program Manager | Division of Environmental Planning & Engineering, Caltrans District 4

Project: Altamont Compost Facility Grading, Drainage, and Wastewater Pond Construction
Glen Roycroft, PE, GE | P: (415) 408-9057 | E: groycroft@wm.com
Engineering Manager | Waste Management, Inc.

Bay Area Stormwater Management Agencies Association (BASMAA)
Geoff Brosseau | P: (650) 365-8620 | geoff@brosseau.us | Executive Director, BASMAA

BKF Engineers

For 102 years, BKF has delivered inspired infrastructure to its clients. As a result, we have earned our clients trust, and thereby their repeat business. BKF has worked diligently to help our clients achieve their goals, and bring their projects across the finish line. Through our network of 13 offices in California, we have developed extensive local knowledge that provides us with a keen understanding of issues relating to feasibility, permitting, and entitlement approvals. BKF provides civil engineering, land surveying, and land planning services for government agencies, institutions, developers, architects, contractors, school districts, and corporations. Our markets include healthcare, education, residential, commercial, industrial, corporate, transportation, and public works. We provide several specialty services, including sustainable design, site accessibility consulting, hydrology/hydraulics, traffic signal design, and 3D laser scanning. BKF's 102 years of engineering, surveying, and planning have produced some of the most recognized projects in California. By combining our years of experience in diverse markets with new, innovative approaches to problem solving, we have grown to our current 13 offices with over 400 experienced staff. This success has compelled ENR California to name BKF the 2017 Design Firm of the Year.

Atherton Watershed Experience: BKF has more than a decade of experience working on Atherton's drainage projects and regional drainage issues. BKF was the first to build a comprehensive model and perform extensive analyses of the Bayfront Canal and Atherton Channel watersheds. Our analyses included modeling of Atherton Channel flows from (Highway 280 to the Bay) and is much more comprehensive than the analyses conducted in the 2015 Town Master Plan Update. The County is currently in the process of adopting BKF's model for evaluating watershed-level flood mitigation alternatives and to determine cost sharing as part of the Flood Resilience Program.

BKF was one of the three teams selected to assist the County Department of Public Works with the Flood Resilience Program initiative. We are currently assisting the County in identifying drainage constraints on a watershed scale and therefore can leverage our relationship with the County staff to determine and minimize Atherton flow contributions.

With our extensive knowledge of the watershed, we understand the hydraulic constraints upstream and downstream of the park site and can therefore truly leverage our experience to create opportunities beyond water quality, without effecting budget, schedule, and maintenance needs. One such opportunity is

reducing future detention needs upstream and contributions to the Bayfront Canal downstream. Other opportunities include addressing Atherton's local drainage system issues elsewhere within the tributary area that will help meet both water quality and detention objectives.

Local Civil Design Experience: Our extensive design experience from planning to construction will help in developing feasible, constructible, and cost-efficient solutions. We bring a straight-forward approach to the performance of engineering planning and design. BKF has more than a decade of experience working on Atherton's drainage projects and regional drainage issues. One of the first projects was "Upper Atherton Channel Stabilization" project, which is an approximately 1,200-feet-long channel west of Alameda De Las Pulgas. And our very recent CIP project was "Marsh Road Channel Repair" project. In addition to these two projects, BKF has also worked on several residential and school projects within Atherton and through the process has gained a thorough understanding of the drainage issues around Atherton.

References

Project: San Jose Large Trash Capture Devices
Rajani Nair | P: (408) 535-8306 | E: Rajani.Nair@sanjoseca.gov
Project Director | City of San Jose, Public Works Department

Project: Atherton and Bayfront Canal Flood Mitigation
Jim Inglis | P: (650) 724-4726 | E: jinglis@stanford.edu
Director of Design and Construction | Stanford University, Real Estate

Project: Hillsborough Storm Drainage CIP Projects
Paul Willis | P: (650) 375-7487 | E: pwillis@hillsborough.net
Public Work Director | Town of Hillsborough

MIG, Inc.

MIG, Inc. is a multidisciplinary firm that has over three decades of expertise providing comprehensive local and regional planning, landscape architecture, restoration design, and environmental impact analysis services to public agencies and private clients throughout California. MIG provides a full suite of environmental consulting and permitting services with expertise in environmental impact analysis and the preparation of documents required under the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA). MIG has in-house expertise in a range of environmental impact analysis specialties, including Biology and Ecological Restoration, Air Quality and Greenhouse Gas modeling and analysis, Noise Modeling, Cultural/Architectural Resource Evaluations, and Visual Simulations. MIG also provides permitting services for permits obtained from resource agencies (United States Army Corps of Engineers, United States Fish and Wildlife Service, California Department of Fish and Wildlife, Regional Water Quality Control Boards, California Department of Transportation [Caltrans], etc.). MIG's experienced project managers have the technical expertise and depth of professional experience to prepare legally defensible CEQA documents and to be able to guide complex and controversial projects through the sometimes convoluted CEQA process. Our project managers recognize their success as professionals is contingent upon the successful completion of the CEQA process, and we strive to provide full client support throughout the process. MIG is headquartered in Berkeley and has offices throughout the western United States. Nationwide, MIG has 225 employees. Work for the Atherton Water Capture Project would be based out of MIG's San Jose office which is comprised of 16 to 18 qualified and trained environmental professionals.

References

Projects: San Pedro Terrace Trail Biological Technical Memorandum for Caltrans; Highway 1 Bridge Replacement over San Pedro Creek and Creek Widening Project; Pacifica Equalization Basin Biological Resources Evaluation; Milagra Creek Sinkhole Repair Construction Monitoring
Van Ocampo | P: (650) 738-3767 | E: ocampov@ci.pacifica.ca.us
Director of Public Works | City of Pacifica

Projects: California Water Tank and Pump Station EIR
Phone Du | P: (650) 780-7385 | E: PDu@redwoodcity.org
Senior Civil Engineer, Engineering & Transportation | City of Redwood City

Callander Associates

Callander Associates (CALA) is a landscape architecture and planning firm with offices located in Burlingame, San José, and Gold River. Work for this project will be produced out of our Bay Area office, at 1633 Bayshore Highway, Suite 133, Burlingame, California 94010. With a 43-year history built on landscape architectural design and planning for public projects in Northern California, CALA brings unparalleled experience. A staff of 24 design and administrative professionals works closely with public agencies, fellow design professionals, and communities to facilitate creative and comprehensive designs and to provide communities with integrated design services that reflect their feedback. CALA services include consultation, community workshops, master planning, design studies, preliminary plans, construction documents, and construction review services for a variety of public projects including civic buildings, parks and recreation, and streetscapes. We work closely with design, planning, and public works professionals, as well as stakeholders, merchants, and the community, to facilitate creative and comprehensive design alternatives. These services include consultant coordination; costs estimating; phasing recommendations; community workshops; renderings; full plan, specification, and estimates; and preparation of funding and permitting submittals.

Reference

Fred Ho | P: (408) 866-2156 | E: fredh@cityofcampbell.com
Senior Civil Engineer | City of Campbell

Hexagon Transportation Consultants

Hexagon Transportation Consultants, Inc. (Hexagon) was founded in 1998 in San Jose, California with the goal of providing top-quality, professional transportation consulting services to private and public entities. Hexagon provides services in all major aspects of transportation planning and traffic engineering. Hexagon's public clients include city, county, and state agencies and regional planning organizations. Hexagon has a wide range of private clients, including technology companies, developers, architects, civil engineers, and environmental firms. Hexagon has California offices in San Jose, Pleasanton, and Gilroy, as well as an Arizona office in Phoenix.

Opti

Opti is a private technology company focused on delivering cleaner water and flood control through the continuous monitoring and adaptive control (CMAC) of distributed stormwater infrastructure. CMAC integrates information from field-deployed sensors with real-time weather forecast data to directly monitor performance and actively control stormwater storage flows. Applications of Opti's platform include CMAC of cisterns, underground tanks, green infrastructure, and dry and wet ponds that are optimized for flood control, water quality, water reuse, and hydromodification control. For infrastructure owners, CMAC reduces operating and capital costs, enables environmental compliance, and reduces risk from volatile environmental conditions.

Development of Opti technology began in 2007 when the company integrated internet-based forecasts into control logic for a salt marsh restoration project in New England. Today, with over 130 commercial deployments across 21 states throughout the country and over 45 million gallons of storage under active management, Opti is the leader in forecast-based intelligent control of stormwater infrastructure. More specifically, Opti deployments include stormwater management for the Philadelphia Water Department, United States Environmental Protection Agency (U.S. EPA) Headquarters, the City of Chicago, New York City, Fairfax County, Maryland, Milwaukee Metropolitan Sewerage District, and Department of Energy and Environment (DOEE).

EXPERIENCE

Geosyntec Project Examples

CALTRANS DISTRICT 4 PHASE I PLAN FOR TMDL IMPLEMENTATION AND TRASH REDUCTION | San Francisco Bay Area, California

Geosyntec was contracted by Michael Baker International to be the technical lead in preparing a Phase I Plan for TMDL Implementation and Trash Reduction for Caltrans District 4. Caltrans District 4 serves the San Francisco Bay Area counties of San Mateo, San Francisco, Marin, Sonoma, Napa, Solano, Contra Costa, Alameda, and Santa Clara. Geosyntec identified candidate sites along freeway corridors and off-ramps for BMP implementation. Site investigations were conducted at each candidate site to obtain tributary drainage area and imperviousness, identify existing utilities and drainage infrastructure, constraints, document trash pollution, and access/safety concerns. Site investigations were also used to identify the location and potential types of treatment BMPs that could be implemented. Based on the recommended treatment BMPs at each of 18 identified sites, seven conceptual designs were prepared that included planning level cost estimates for construction. Geosyntec also prepared a TMDL Phase I Plan that summarized the analyses. Geosyntec participated in required Caltrans reporting and management tasks as part of this project.

SUNNYVALE SMART STATION STORMWATER MANAGEMENT SYSTEM UPGRADE | Client: City of Sunnyvale, California

The stormwater management system upgrades consisted of constructing a stormwater diversion system in and around the existing facility to separate first-flush/low flow runoff and divert it to the Water Treatment

Plant via a pressure pipe network. Geosyntec prepared construction plans that minimized impact to the ongoing Transfer Station operations and the safety of the public using the transfer station. The design work included construction plans, details and specifications for the construction of pump station, wet well, sampling vaults, flow diversion structures, SCADA system installation, gravity flow and force main piping, discharge structures and associated trenching, shoring, and dewatering activities.

INFILTRATION FEASIBILITY STUDY | Newhall County Water District, Castaic California

Geosyntec provided Newhall County Water District with groundwater modeling services for a conceptual feasibility study for percolation of recycled water near Castaic, California for augmentation of groundwater supply. A three-dimensional numerical groundwater flow model was constructed with MODFLOW that was used as a tool to estimate infiltration capacity, area of percolation ponds needed to attain the objective infiltration rate, groundwater mounding or a range of infiltration quantities, mounding of the water table, flow direction, travel time of groundwater between recharge basins and water supply wells, and optimal locations of wells to recover the infiltrated water. Geosyntec assigned values for subsurface parameters in the groundwater flow model based on a review of available information on the hydrogeologic setting, nearby groundwater monitoring and pumping wells, aquifer and infiltrometer testing, and a regional groundwater flow model. Sensitivity analysis used the best estimate of hydraulic properties, more optimistic properties, and more conservative properties for percolation scenarios with and without supplemental groundwater extraction. The groundwater model demonstrated that the local geometry of the Santa Clara River alluvial basin is a key limitation to the infiltration capacity. In addition, rapid travel times between recharge basins and production wells due to the high hydraulic conductivity values would be a constraint on location of recharge basins and wells for indirect potable reuse of the recycled water.

UNIVERSITY PARK NEIGHBORHOOD RAIN GARDENS
Client: City of Los Angeles, LA Sanitation

Geosyntec partnered with the City of Los Angeles, Bureau of Sanitation as lead designer and contractor on a state grant-funded integrated delivery project to capture and infiltrate urban stormwater in the University Park neighborhood of Los Angeles and improve water quality in Santa Monica Bay (Ballona Creek Watershed). Rain gardens—composed of subsurface storage, soil media, and vegetation—were designed and constructed in existing parkways at strategic locations to capture runoff from residential and commercial parcels. An ongoing monitoring plan was implemented to monitor the flowrate and typical pollutants of concern for five selected rain gardens. Throughout project implementation, the City encouraged public participation in the upkeep and beautification of the neighborhood rain gardens and to guide future design recommendations. Geosyntec handled the project management and oversight of subcontractors during design (including civil engineering and landscape architecture), construction, and ongoing monitoring. Geosyntec completed construction and installation of the 35 rain gardens on time and under budget in April 2017. A monitoring location for one of the 35 rain gardens was constructed as part of the University Park Rain Gardens Project.

BROADWAY NEIGHBORHOOD STORMWATER GREENWAY PROJECT
Owner: City of Los Angeles

The Broadway Neighborhood Stormwater Greenway Project was identified as an ideal local project for immediate implementation of neighborhood-wide Low Impact Development (LID) designs aimed at meeting TMDLs and recharging potable groundwater aquifers through the Water Replenishment District of Southern California (WRD) funded Central and West Coast Basins Distributed and Regional Stormwater Capture Feasibility Study. Geosyntec completed the recharge prioritization and conceptual project designs

for WRD and assisted the City of Los Angeles in developing a grant application to secure Proposition 84 funds for project implementation. The grant application involved creating a detailed project budget and schedule, identifying project objectives and project performance measure, and developing a monitoring program to meet grant requirements. The project included the design and implementation of four levels of stormwater capture and infiltration BMPs: (1) residential LID measures for up to 8 acres; (2) neighborhood-scale LID for 12 acres; (3) commercial LID measures for 3 acres, and (4) a sub-regional scale facility for 30 acres of mixed land uses during wet weather design storm events and up to 180 acres during dry-weather and smaller storm events. Geosyntec forged the concept of neighborhood-scale phase LID implementation for this project. Following award of the design contract, Geosyntec developed the pre-design report, performed site investigations, and developed the 100% design and specification documents for the stormwater BMPs. Geosyntec managed focused aspects during construction and performed the post-construction monitoring.

MALIBU BROAD BEACH STORMWATER BMP | Client: City of Malibu

Geosyntec supported the City of Malibu in securing a Proposition 84 grant by the State Water Resources Control Board for the Broad Beach Road Biofiltration Project. The stated purpose of this grant is for "diverting dry-weather and some stormwater runoff from a series of eight storm drains onto permeable surfaces and into a biofiltration system along a one mile stretch of Broad Beach Road to prevent discharges to Broad Beach." The Project included various stormwater BMPs, landscaping, and other improvements to eliminate or greatly reduce dry-weather flows, improve stormwater quality through treatment, reduce erosion and sediment tracking, and capture and use stormwater. The project design and construction included installation of permeable concrete pavers along the roadside to replace unpaved parking areas, infiltration stormwater, and general establishment of a landscape/hardscape theme along this approximately 4,100-foot stretch of residential roadway. Geosyntec was responsible for all elements of project design and supported construction. Geosyntec prepared various technical studies and field investigations (geotechnical, groundwater, hydrology, biological assessment, topographic survey, and utility research), developed a preliminary design, coordinated community outreach and meetings, developed final construction documents, performed environmental clearance services, provided construction support services, and performed post-construction monitoring of biofilters and re-vegetated areas. Geosyntec, along with its team of sub-consultants, completed the design and permitting in 2014 and the construction was completed in 2015.

CURTISS POND IMPROVEMENT PROJECT REAL-TIME CONTROL FACILITY SIZING AND DESIGN | Client: Capitol Region Watershed District, Falcon Heights, Minnesota

Geosyntec worked with Opti to improve an existing underground infiltration gallery located at Curtiss Field in Falcon Heights, Minnesota. The Capitol Region Watershed District (CRWD) retained Geosyntec to design and install an intelligent stormwater monitoring and control system for Curtiss Pond that could improve flood risk protection for the park, park buildings, and surrounding homes. Geosyntec and Opti designed a real-time monitoring and control network using Opti's platform that allows Curtiss Pond to perform both intelligent stormwater detention and water conservation functions. The system is designed to have Curtiss Pond hold water for infiltration between precipitation events, and use upcoming forecast and system state information to release stored water ahead of impending storm events. The pond's drain valves automatically close to capture water once rain begins, reducing or eliminating impacts to local residences.

MALIBU LEGACY PARK PROJECT | Owner: City of Malibu

As project lead for stormwater design and geotechnical engineering, Geosyntec conceived and designed a stormwater system that enables stormwater reuse, eliminates urban runoff, treats and disinfects wet weather runoff, and disperses water, resulting in no surface discharge of treated wastewater to Malibu Creek or Lagoon. Flows from 337 acres of the Malibu Creek Watershed are collected within three major storm drains then intercepted and conveyed to the 15-acre Legacy Park, which includes a central pond designed to accept up to 2.6 million gallons of stormwater and urban runoff. The collected stormwater is treated in the City's adjacent stormwater treatment facility using an ozone treatment process. During most rain events, the water is stored and re-used for park irrigation, lowering operating costs, and reducing demand on valuable potable water. Use of natural treatment system BMPs proved to be the most cost-effective means for mitigating multiple pollutant types and providing other benefits to passive recreational uses and habitat development. The system increased the City's ability to treat stormwater tenfold and was designed to be 100% compliant with bacteria TMDLs during both dry and wet weather conditions. In addition to meeting project objectives, Malibu Legacy Park was given the WEF 2012 Water Quality Improvement Award, named the 2011 Project of the Year by the American Society of Civil Engineers – Region 9 (California), and awarded the 2011 California Stormwater Quality Association's BMP Project of the Year.

FAIRVIEW PARK STORMWATER PROJECT | Client: City of Costa Mesa

Geosyntec assisted the City of Costa Mesa in the conceptual development and design of an innovative wetland/infiltration gallery for Fairview Park, located adjacent to the Greenville-Banning Channel in the City of Costa Mesa, Orange County, California. The objective was to divert dry weather flows from the Greenville-Banning Channel to the lowlands of the adjacent Fairview Park for treatment, while creating an area of restored habitat that was aesthetically pleasing and would provide recreational and educational opportunities for the community. Geosyntec designed a system where flow is diverted from the Greenville-Banning Channel and is routed through a series of naturalized pools and wetland areas that also constitute restored riparian habitat. The wetland/infiltration system is designed to address bacteria, metals, and other dry weather pollutants contained in the diverted water. Flow to the wetland reduces dry weather flow that was previously being diverted to the Orange County Sanitation District for treatment at added cost and loading to the treatment plant. The design incorporates the existing pump station and inflatable rubber dam originally installed within the Greenville-Banning Channel for diversion to the Sanitation District. Peer review and regulatory oversight of the project was provided by United States Fish and Wildlife, the United States Army Corps of Engineers, the Santa Ana Regional Water Quality Control Board, California Department of Fish and Game, the City of Costa Mesa, and the Orange County Flood Control District.

VAN NUYS BOULEVARD GREAT STREET – GREEN STORMWATER INFRASTRUCTURE | Client: City of Los Angeles, Bureau of Sanitation

The Los Angeles Bureau of Sanitation, in partnership with Los Angeles Department and Power, is planning to capture and infiltrate stormwater to increase groundwater replenishment throughout the San Fernando Valley Basin and to improve downstream receiving water quality of the Los Angeles River. The objective of this project is to provide BMPs to achieve these goals along Van Nuys Boulevard, which is a commercial corridor between Laurel Canyon Boulevard and San Fernando Road. The anticipated BMPs will include drywells, rain gardens, and/or infiltration galleries. Geosyntec was selected to implement the $3.3 million project through integrated/alternative project delivery methods. Geosyntec's scope of work as prime contractor includes management of a team consisting of Geosyntec staff and 16 subconsultants to provide

overall project management, preliminary design, BMP installation, landscaping plan development, and monitoring and optimization plans and services. The preliminary design phase includes topographical survey, geotechnical investigation, community outreach, preliminary design plan development, and an adaptive cost model. After completion of installation, the BMPs will be monitored during wet and dry weather and standard operating procedures will be developed during the optimization phase.

BKF Engineers Project Examples

SAN JOSE LARGE TRASH CAPTURE DEVICE INSTALLATION PROJECTS | Client: City of San Jose, California

In response to Provision C.10 to Municipal Regional Stormwater Discharge Permit (MRP), the City of San Jose has developed a Long-Term Trash Load Reduction Plan that includes installing trash capture devices (or hydrodynamic separator units) immediately upstream of large capacity storm drain outfalls. The City retained BKF Engineers to provide engineering services for installing HDS units at three new locations as part of the Project's Phase V. BKF completed design and installation of inline weirs on two 66-inch RCP pipes, a 6-foot by 5-foot RCB and a 78-inch RCP pipe and installed four 12-foot (144-inch) diameter and one 21-foot (252-inch) diameter CONTECH CDS units to serve roughly 3,400 acres of combined tributary drainage area at all three locations. The total cost of the project is $5 million. The project was executed on an aggressive schedule, less than 12 months from start to finish.

UPPER ATHERTON CHANNEL | Client: City of Atherton, California

BKF designed channel improvements to stabilize the channel banks. Work included:

- Evaluating alternatives for stabilizing creek;
- Developing project recommendations within tight budgetary constraints;
- Recommending improvements;
- Coordinating with regulatory agencies;
- Converting cutoff wall into drop structure;
- Using preliminary consultation with Corps of Engineers and Water Quality Control Board to focus project recommendations; and
- Preparing layout for soldier pile wall to prevent the channel down-cutting the bank protection.

The purpose of the Atherton Channel project was to stabilize a reach of Atherton Creek. In the 1960s, the Atherton Channel District proposed concrete-lining a section of naturally vegetated channel. Prior to the project being halted by neighborhood efforts, a concrete structure was constructed at the upstream limit of the project and gravel was placed downstream of the structure. Over time, the gravel washed out, leaving a concrete drop structure with no energy dissipation. BKF converted the drop structure into an energy dissipation structure to reduce the potential for continued expansion of a downstream scour hole. As a part of BKF's project, the scour hole was partially filled, with sufficient area provided to support red-legged frogs that were found in the project area. Two soldier pile walls were constructed downstream of the drop structure, one adjacent to a roadway and one adjacent to a building. BKF coordinated the environmental approvals for the project.

BKF provided engineering documents for multi-phase instream improvements, including a drop structure and two retaining walls. Areas adjacent to the structures were planted with restoration vegetation in

accordance with agency permits. Creek banks were failing in several locations along the Creek. Phase 1 consisted of permitting and design of initial improvements, including conversion of a drop structure to an energy dissipater, construction of two soldier pile walls and construction of a vortex weir. Areas of the channel disturbed by construction were replanted in conformance with permits from the review agencies. Phase 2 consisted of creek bank improvements in conjunction with vortex weirs. The combined Phase 1 and Phase 2 projects provided protection for 1,200 feet of channel. BKF utilized preliminary consultation with Corps of Engineers and Water Quality Control Board to determine project recommendations. BKF evaluated several alternatives for stabilizing the Creek, including a mix of stabilization techniques.

CITY OF MOUNTAIN VIEW TRASH CAPTURE | Client: City of Mountain View, California

BKF was responsible for the design of a hydrodynamic separator placed within a residential area on an existing 42-inch reinforced concrete storm drain. We determined the final placement of the device based upon the results of a utility analysis, as gas lines, sewer lines, and overhead wires were in the immediate vicinity. The work included a 25-foot-deep pit with shoring. BKF coordinated with the trash device provider and the City of Mountain View to ensure a design that properly conveyed the expected hydrologic flows and caused the least disruption to the local neighborhood.

MARSH ROAD CHANNEL | Client: City of Atherton, California

Built in the 1940s and 1960s, the Project Channel, also known as Atherton Channel, was made of battered stone and mortar walls with a cast-in-place concrete invert slab. The Channel west bank supports Marsh Road, a heavily traveled two-lane road, and the east bank supports private properties. Atherton initiated this project to repair the failing channel wall supporting the adjacent road. The design included protecting and improving the creek conditions for state and federally listed species, stabilizing the bank to protect property without reducing floodwater conveyance of the creek, and enhancing the value of the creek as a community amenity. This entailed constructing a new concrete U-channel within the footprint of the existing channel. The existing channel included approximately 1,800 linear feet of open trapezoidal channel running along the edge of Marsh Road between Middlefield Road and Fair Oak Avenue. The Project Channel is approximately 8 to 9 feet wide at the base and is bounded on the upstream and downstream ends by concrete box culverts. The Project Channel is a flood control facility with tributary area of approximately 4.6 square miles.

GOLDEN STATE WARRIORS ARENA – CHASE CENTER

BKF led the site civil design for the construction of a multi-purpose event center (Arena) with a seating capacity of about 18,500 and a variety of mixed uses, including two 11-story offices (North and South Towers), retail, open space, and structured parking on an approximately 11-acre site within the Mission Bay South Redevelopment Plan Area of San Francisco. BKF assisted the team with the design of a large-scale rainwater and graywater capture and harvesting system. The graywater system sources are from the North and South Tower showers/lavatories, IDEC bleed water, and HVAC condensate. Rainwater from the Arena roof is also used as a source for the graywater system. Rainwater is delivered to the rainwater collection cisterns (500,000 gallons) using four pumps and then transferred to the graywater collection cistern (6,000 gallons), while the graywater is delivered directly to the graywater collection cistern. The contents of the graywater collection cistern are treated through the graywater treatment unit. The graywater treatment unit has a maximum capacity of 30,000 gallons per day. Treated effluent from the unit is delivered to the treated water storage cistern, before being distributed back to the North and South Towers, and the Arena for toilet flushing through individual booster pump systems for each building. During periods of high

water demand and/or low treated water supply, an 8-inch recycled water backup valve will open to provide water supply in the treated water storage cistern. Aquacell GX100A is used for graywater treatment system. The system consists of screen filters, an aerobic biological digester, ultra-filtration membrane, ultraviolet disinfection, chlorine disinfection, control systems, alarms, and monitoring instrumentation. Chlorination Recirculation Pumps are provided to recirculate water from the Treated Water Storage Cistern through the Graywater Treatment Unit, where chlorine residual is measured and adjusted, and circulated back to the Treated Water Storage Cistern.

DESIGN-BUILD PROJECT: COLLEGE OF SAN MATEO CIP 2 PROJECTS, SAN MATEO

- Design-build infrastructure project to support construction of new Allied Health and Wellness Building, new Student Center;
- New Central Utility Plant and associated parking lots and site work improvements;
- New 6,200 LF utility loop including chilled water supply and return, steam and condensate, electric and communication lines;
- Additional site utilities include 12,300 LF storm drain, 2,900 LF sanitary sewer, 3,400 LF domestic and fire water, and 1,200 LF gas mains; and
- Design of street improvements for 700 feet of landscaped median at West Hillsdale Boulevard and a four-way stop controlled intersection with dedicated right turn yield movement at West Hillsdale Boulevard and CSM Drive.

ADDITIONAL DESIGN BUILD PROJECT EXPERIENCE

- University of California, Berkeley – Albany Village;
- University of California, Berkeley – Utility Upgrades;
- Skyline Community College Student Union/Science Annex, San Bruno;
- Santa Clara Valley Medical Center, San Jose; and
- Keiser Medical Office Building, San Mateo.

CALA Project Examples

HOLBROOK PALMER FIELD | Client: Menlo Atherton Little League

Menlo Atherton Little League sought to upgrade its ballfield facility within Holbrook Palmer Park. The Little League desired to provide expanded seating befitting a top-tier little league facility along with improved dugouts, new backstop, playing field improvements, and associated park circulation improvements. Additionally, the Little League resurfaced the existing tennis courts adjacent to the upgraded field. CALA worked closely with the Little League's architect to develop a site plan concept that met the requirements of Atherton's Planning Department. Open communication between the design team and the Planning Department was instrumental in identifying and quickly resolving outstanding comments.

LAS LOMITAS DETENTION BASIN | Client: City of Atherton, California and Las Lomitas School District

Working with the Town of Atherton and Las Lomitas School District, CALA studied the feasibility of implementing a detention basin at Las Lomitas Elementary School. The study sought to determine the

costs and benefits to the Town and whether a mutually-beneficial solution was possible at the school site. The site was originally identified in a Townwide Drainage Study, which identified the school site as a potential candidate for a detention basin adjacent to Atherton Creek. Further complicating the project was a large campus modernization project currently in construction at Las Lomitas Elementary. CALA had to consider how the detention basin design would be integrated with the improvements currently being made to the campus. CALA consulted extensively with BKF Engineers on means of diverting flows from Atherton Creek and achieving desired storage quantities. In addition, the improvements considered different storm event conditions and was plumbed according to those event types to address "first flush" flows. This project type is relatively new in the Bay Area and much time was spent determining project costs, including coordination with vendors on the stormwater capture system. While the project was deemed technically feasible, the difficulty of integrating the improvements concurrent with campus modernization efforts was too burdensome and costly to overcome. The Town and District agreed that the Las Lomitas site was not going to be suitable for a detention basin.

HACIENDA AVENUE, CAMPBELL, CALIFORNIA | Client: City of Campbell, California

The nearly mile-long stretch of Hacienda Avenue in the City of Campbell had previously been a two-lane, pot-holed expanse of asphalt paving, with some sections as wide as 70 feet from curb to curb. The City envisioned a green street concept which would reduce the amount of paving while adding planting and street trees, effectively creating a linear greenway. The planting areas would also double as stormwater treatment areas for the entire project. The City hired CALA originally to prepare graphics to support the City's grant application to the State. Once awarded, CALA was re-engaged for design development and construction document services. With the project now complete, several complete streets concepts are being employed. Some key project details include: flush curbs, which allow stormwater to sheet flow into bio-retention areas; expanded plazas at corner bulb-outs; shortened crossing distances; bike lanes; street tree planting within parking bays; and educational signage. To further accentuate the project's green features, the City pursued and achieved Bay Friendly and a GreenRoads rating for the project.

Additional Relevant Experience: CalTrans (Asterisks denote Caltrans funding)

- Stanford ECR, Palo Alto*;
- Elk Grove/Highway 99 Interchange, Elk Grove*;
- Pilarcitos Trail, Half Moon Bay;
- I5-CR102 PS&Es, Woodland*;
- Embarcadero Corridor, Palo Alto;
- Palo Alto Highway 101 POC, Palo Alto;
- Western Placerville Interchange, Placerville*; and
- Putah Creek Bridge Replacement, Winters*.

In San Mateo County, CALA also worked on the Meadowview Playground.

MIG, Inc. Project Examples

MIG's San Jose office (formerly TRA Environmental Sciences, Inc.,) has been preparing CEQA and NEPA documents for over 30 years. MIG has worked extensively throughout San Mateo and Santa Clara counties on a wide range of public utility and public infrastructure projects. We have prepared CEQA documents for

many of the cities and special districts within San Mateo County, as well as several San Mateo County Departments (Parks Department, Public Works Department, and the County Manager's Office, Project Development Unit). MIG works closely with the CEQA lead agency, regulatory agencies, and the project design team to address technical issues and to problem solve during the CEQA process. This approach to working with the project team enables us to prepare legally defensible documents. MIG has prepared CEQA documents for several public works departments in San Mateo County, including the California Water Mid-Peninsula District Station 6 Water Tank Replacement Initial Study/Mitigated Negative Declaration (IS/MND) for the Town of Hillsborough (2016 – 2017), the California Water Tank and Pump Station EIR for the City of Redwood City (2013 – 2017), and currently the San Mateo County Government Center, Campus Development Project EIR (Ongoing). MIG is also currently working on several projects for the San Mateo County Peninsula Corridor Joint Powers Board (Caltrain and SamTrans) related to ongoing maintenance of the Caltrain train tracks. These projects include CEQA work, resource agency permitting, and biological and cultural resource construction monitoring. Projects include the Los Gatos Creek Bridge Replacement project (replacing a Caltrain train track bridged across Los Gatos Creek) (Ongoing), SamTrans Caltrain Grade Crossing Improvement Program Biological Constraints Analysis, San Mateo County (2016), and Caltrain SF Roadway Bridges Project, Bird and Bat Survey, San Francisco (2015). MIG has also assisted the City of Menlo Park with cleaning out a portion of Atherton Creek with the Atherton Channel Maintenance, Biological Monitoring Project (2015 – 2016). The project involved the removal of debris and trash, in-stream vegetation, and roots on the side banks of the Atherton Channel in Menlo Park, California in October 2015 and October 2016.

Caltrans Experience: MIG has prepared many Natural Environment Study (NES) reports required by Caltrans for a range of public infrastructure projects, including: the Crystal Springs Regional Trail Extension Project NES (Client: San Mateo County Parks Department), the Highway 1 Bridge Replacement over San Pedro Creek and Creek Widening Project: Biological Assessments, Wetland Delineations, CEQA Initial Study Addendum, NES, Multiple Permit Applications (Client: City of Pacifica Public Works Department), and the Half Moon Bay Downtown Resurfacing, Biological Resources Evaluation Memorandum and Construction Monitoring (Client: City of Half Moon Bay).

OPTI, Inc. Project Example

LOS CERRITOS CHANNEL DIVERSION

Opti is controlling the diversion system that takes water from the Los Cerritos Channel in Lakewood, California, and stores it in a 2.9-million-gallon underground storage and infiltration basin. This project is expected to capture on the order of 500 to 700 acre-feet of runoff annually. By using Opti's forecast-integrated real-time controls, this project is able to increase water quality and decrease flood risk in Lakewood. This project was funded by Caltrans as part of its efforts to reduce dry-weather flows and comply with its own National Pollutant Discharge Elimination System permit requirements (see full article in the February 2017 edition of Civil Engineering magazine).

PROJECT OVERVIEW

The Town of Atherton is seeking to implement a water capture project below the Holbrook-Palmer Park, located at 150 Watkins Avenue, to address the requirements and needs of four important stormwater-related programs of the San Mateo Countywide Water Pollution Prevention Program (SMCWPPP). These programs include implementation of green infrastructure, stormwater resource planning, mercury/polychlorinated biphenyls (PCBs) load reduction for San Francisco Bay TMDL compliance, and

trash load reductions. Green infrastructure planning, mercury/PCBs load reduction, and trash load reduction are also requirements of the Municipal Regional Permit (MRP) issued by the San Francisco Bay Regional Water Board, which has numerical requirements for PCBs/mercury reductions and trash load reductions. San Mateo County and the Town of Atherton are both permittees under the MRP and SMCWPPP member agencies.

Stormwater capture is identified as a multi-benefit approach in the San Mateo County Storm Water Resource Plan (SWRP) to meet the MRP requirements, which additionally provide more sustainable capture and management of stormwater, flood reduction, pollution load reduction, promotion of environmental and biological function, and additional community benefits. The proposed water capture facility at Holbrook-Palmer Park would capture runoff from the adjacent Atherton channel, which runs along the western boundary of the park and conveys discharges from a tributary of approximately 2,875 acres, including portions of Atherton, Menlo Park, Woodside, and Unincorporated San Mateo County. Approximately 14 acres of I-280 and 10 acres of El Camino Real (SR 82) are also included in the tributary drainage area; therefore, the water capture facility would also assist Caltrans in meeting their Statewide municipal separate storm sewer system (MS4) permit requirements and could potentially be used to demonstrate some load reduction from tributary Caltrans land areas required by the San Francisco Bay total mercury and PCBs TMDLs.

The proposed facility at Holbrook-Palmer Park would include a diversion structure to re-direct all dry-weather urban runoff and the first flush of wet weather runoff from the adjacent Atherton channel through one or more large hydrodynamic separators to remove trash, debris, and sediment before conveying the water into a large, buried multi-chambered storage/infiltration facility with a targeted storage capacity of 8 to 10 acre-feet. The storage facility would detain or infiltrate captured runoff to provide flood peak flow attenuation and pollutant load reduction. The feasibility of using the storage facility for infiltration will be based on the results of a geotechnical analysis. If necessary, a series of engineered dry wells may be constructed within or adjacent to the storage chamber to facilitate increased infiltration.

If some or all the water captured is to be used for irrigation, additional treatment of the water may be required for surface irrigation. Alternatively, a sub-surface irrigation system could be installed in the park to preclude the need for additional treatment. Quick, yet comprehensive evaluation of these options, as well as potential obstacles associated therewith, is critical to project success.

The scope of services includes initial engineering and geotechnical assessments, detailed design, environmental compliance, permitting, construction of a diversion structure and piping, construction of a pre-treatment facility, excavation and construction of a high void underground storage/infiltration chamber, disposal of excavated soil, and reconstruction of disturbed portions of the site.

PROPOSED APPROACH

The final project specifics will be determined following the preparation of the concept design as approved by the Town. The Geosyntec team does not have sufficient information at this time to definitely determine the ultimate project approach. The detailed project approach summarized below focuses on the preliminary engineering and environmental requirements. Findings of the site investigations, environmental clearance and permitting requirements, preliminary H&H study, water quality analysis, landscaping design and stormwater water re-use concept design together will define the final details of the selected design.

Geotechnical/Hydrogeological Investigation and Characterization

Introduction

The geotechnical and hydrogeological investigations of site conditions will provide the basis for the design to address environmental compliance, permitting, and construction of a diversion structure and piping, pre-treatment facilities, and underground storage/infiltration structures. Geosyntec will follow the design requirements in the *C.3 Stormwater Technical Guidance Manual, Version 5*[1], some of which have been excerpted below:

- In-situ/undisturbed soils should have a low silt and clay content and have permeability greater than 0.5 inches per hour.
- Infiltration devices should be located a minimum of 100 feet horizontally away from any known water supply or drinking water wells, septic systems, and underground storage tanks.

Based on Geosyntec's preliminary review, depth to groundwater is estimated to be in the range of 30 to 40 feet (USGS, 1997[2]; BAGG, 2007[3]). The San Francisco Bay Region MRP requires a minimum vertical distance of 10 feet from the base of any infiltration device to the seasonal high groundwater mark.

Geosyntec will review the Town of Atherton's, the County of San Mateo's, and the State of California's well databases for wells in the project area. Furthermore, as part of the document review, Geosyntec will review information available for the area of the project such as engineering reports, boring logs, including data and reports available from Geotracker[4]. Geosyntec's model would address possible rise of the groundwater table over time and determine the volume of water that can be accommodated by the underground galleries system without significantly increasing the groundwater table. Increases in groundwater levels can affect adjacent utilities, the Caltrain right-of-way, neighboring properties, and the existing facilities at the park.

Field Exploration and Testing Program

Geosyntec will coordinate the field exploration with the Town of Atherton's Department of Public Works. Geosyntec will contact 811 (Underground Service Alert [USA]) to locate utilities at the site, contract with a private utility locator to clear the area of the proposed boring locations, and review the mapped utilities in the area to preliminarily locate the borings.

Geosyntec's geologists and engineers will perform the field investigation under the supervision of a California Licensed Hydrogeologist and/or Geotechnical Engineer. The borings will be logged following the Uniform Soil Classification System (USCS) and American Society for Testing and Materials (ASTM) D2487/D2488.

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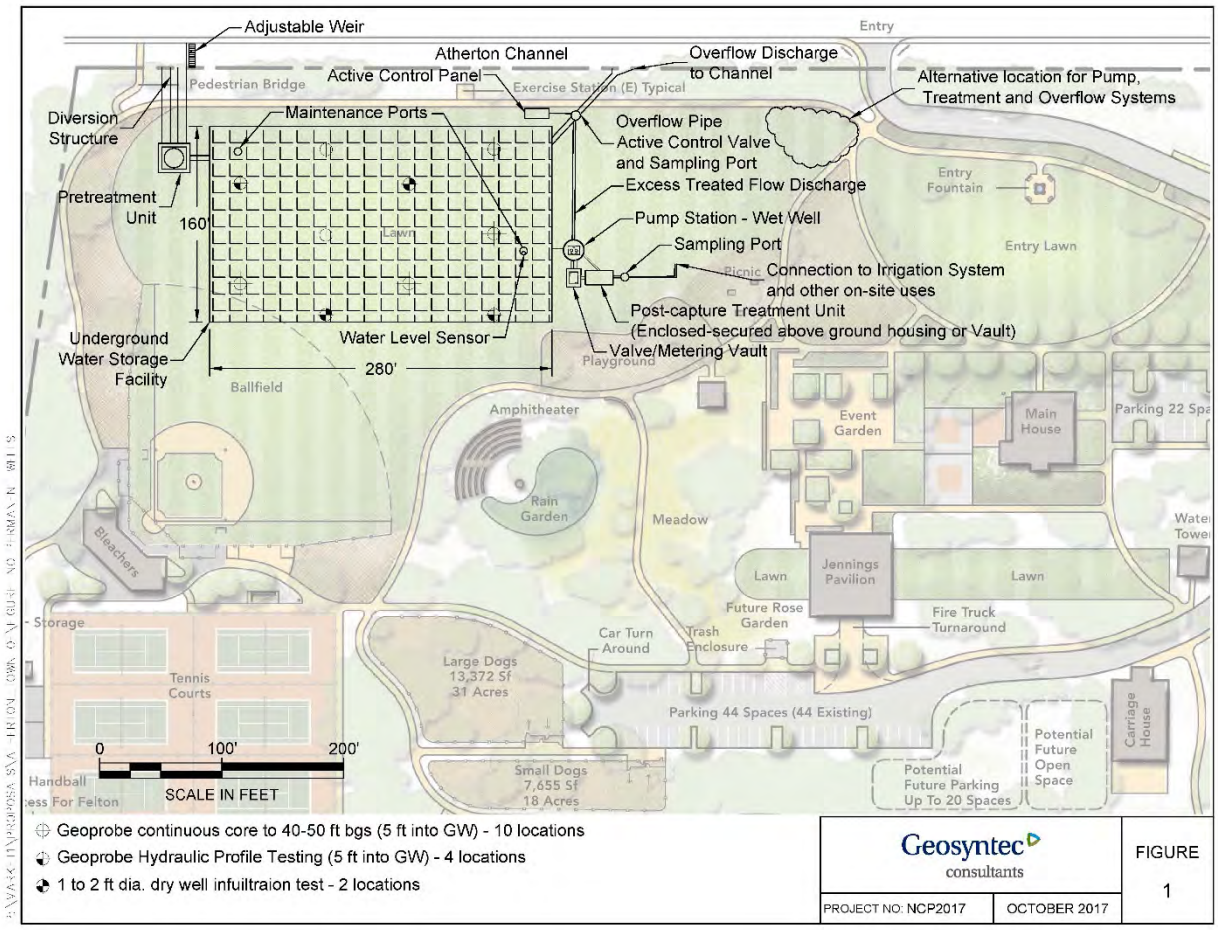
[1] San Mateo Countywide Water Pollution Prevention Program, June 2016.
[2] United States Geological Survey Water Resources Investigations Report 97-4033 prepared by L.F. Metzger and J.L. Fio entitled *Ground-Water Development and the Effects on Ground-Water Levels and Water Quality in the Town of Atherton, San Mateo County, California*.
[3] Bay Area Geotechnical Group, November 2007, Supplemental Environmental Investigation, 1452 & 1458 El Camino Real, Menlo, Park, California (available from Geotracker).
[4] https://geotracker.waterboards.ca.gov/



Geoprobe Borings

To characterize the lithology and hydraulic characteristics of the soils beneath the vicinity of the proposed storage and infiltration structures, Geosyntec proposes 10 Geoprobe borings that would be continuously cored using direct-push technology to approximately 5 feet below groundwater. For estimating and planning purposes, we have assumed the Geoprobe cores will be 50 feet deep. Proposed locations for the 10 Geoprobe borings are shown on Figure 1; however, actual locations will depend on access constraints. The Geoprobe holes will be backfilled in accordance with County requirements.

Hydraulic Profiling Testing

At four of the boring locations, hydraulic profiling tests (HPTs) will be conducted with a Geoprobe rig approximately 5 feet from the continuous core location. The HPTs will provide a profile of relative permeability from the ground surface to 5 feet below the water table. Proposed locations for the four HPTs are shown on Figure 1; however, actual locations will depend on access constraints.

The HPTs will be compared to the continuous core samples, and the results of the infiltration tests discussed below, to characterization the spatial variation of hydraulic properties. The hydraulic properties will be represented in the groundwater model to evaluate infiltration capacity and groundwater mounding.

Temporary Wells and Infiltration Testing

The infiltration capacity of the underlying soils needs to be assessed to determine if sufficient infiltration can be achieved beneath Holbrook-Palmer Park. Geosyntec recognizes that the County of San Mateo's Environmental Health Division has established protocols for infiltration tests related to the onsite leach fields described in the *Onsite Systems Manual* dated May 2016. However, Geosyntec proposes a modified, less intrusive infiltration testing method.

Geosyntec proposes four temporary wells for infiltration testing. Proposed locations for the four temporary wells for infiltration testing are shown on Figure 1; however, actual locations will depend on access constraints. The wells will be constructed in 1 to 2-foot-diameter borings, which will be drilled with a solid-stem auger or bucket-auger-rig. The test wells will be constructed with 6-inch-diameter or 1-foot-diameter casing, pea gravel filter pack, a transition sand, and 3-foot hydrated bentonite seal. Two of the test wells will be screened from approximately 10 to 15 feet below ground surface (bgs) to test the depth interval immediately beneath the likely design depth of the storage structure. The other two will be screened from approximately 10 feet bgs to 15 feet above groundwater (i.e., 10 to 20 feet bgs if groundwater is encountered at 35 feet). The deeper test wells will help evaluate the benefit of including dry wells beneath the bottom of the storage structure to enhance the infiltration capacity.

Constant head infiltration tests will be conducted at each of the test wells for approximately three days or until stabilization of the infiltration is achieved, whichever occurs first.

Geotechnical Borings

The geotechnical investigation will consist of drilling five soil borings to a depth of 50 feet using mud rotary methods to obtain geotechnical information that can be used to analyze the excavation conditions (e.g., shoring, tiebacks, unsupported excavations, slope stability) to construct the infiltration chambers and ancillary facilities. Geosyntec will sample using the standard penetration test (SPT) and other split spoon samplers driven with a standard hammer (140-pound, falling 30 inches) or a 300-pound hammer. In addition, Shelby tubes will be pushed using a Pitcher barrel or the hydraulics of the drill rig. To support the geotechnical design, the following geotechnical soils laboratory tests are proposed on samples collected during the field investigation:

- 2 corrosivity package (sulfate resistance, corrosion);
- 1 R-value test on select surficial bulk sample;
- 1 compaction test (ASTM D1557) on selected surficial bulk sample;
- 10 Grain Size Distribution (including Hydrometer) (ASTM D422);
- 10 Atterberg Limits (ASTM D4318);
- 10 Moisture Content/Dry Density (ASTM D2937);
- 4 consolidation tests (ASTM D2435);
- 10 Unconsolidated Undrained (UU) Triaxial Tests (ASTM D2850); and

- 1 Consolidated Undrained (CU) Triaxial Test with pore pressure measurements (ASTM D4767) (3-point test) on relatively undisturbed samples.

The number and type of the above tests will be adjusted after the drilling program has been completed and an initial, visual inspection of the samples has been made. The Atterberg limits and grain size distribution tests will also be used to support groundwater model.

Permitting and Fieldwork Logistics

Geosyntec will obtain drilling permits from the County of San Mateo's Environmental Health Department and the boreholes will be backfilled according to the permit's requirements. Geosyntec assumes that the drilling spoils will be piled next to each boring location; however, the drilling mud for the geotechnical borings will be stored in drums next to the borings for disposal by Atherton personnel.

We have assumed that an encroachment permit is not required and that Atherton will provide access to the Park. Geosyntec and its subcontractors will take measures to minimize damage and disturbance to the Park. Geosyntec assumes that Atherton will repair the disturbed areas after the program has been finished.

Geosyntec assumes that Atherton will provide access to potable water such as a fire hydrant nearby at Atherton's cost for the drilling and infiltration testing. Geosyntec's driller will provide valves, fittings, piping and hose.

Geosyntec assumes that drilling will be performed during the hours of 7:00 a.m. and 5:00 p.m.; drilling activities will create noise so Geosyntec assumes that given the temporary nature of the proposed fieldwork (about three weeks), the noise ordinance will not be enforced by Atherton. Furthermore, Geosyntec will cordon off the area of work; however, Geosyntec assumes that traffic and pedestrian control will be the responsibility of Atherton. Geosyntec does not plan to drill in the public right of way.

Our field investigation does not include sampling, testing, or assessment of toxic, hazardous, or environmentally-controlled substances such as pesticides and fertilizers. Geosyntec will prepare a health and safety plan and we have assumed that the work will be performed in Occupational Safety and Health Administration (OSHA) Level D; however, a photoionization detector and/or other monitors will be on hand to site personnel and subcontractors. If during the field investigation, foreign or suspicious materials are encountered, drilling will be terminated and Atherton will be notified of the condition.

We have assumed that favorable conditions are encountered; therefore, if adverse conditions are encountered, such as weather, security, access, replacement of stolen equipment (e.g., continuous monitoring data logger, etc.), contaminated soils, etc., Atherton will be advised at the time of drilling.

The final boring/piezometer locations will be surveyed by a California-registered land surveyor. Soil samples will be collected from the borings to conduct geotechnical tests such as sieve analyses, Atterberg limits, unit weight, natural moisture content, and triaxial strength tests on select samples. The field and laboratory tests will be used to define stratigraphy, to verify the feasibility of infiltration, and to obtain soil parameters for the groundwater modeling and project design.

Groundwater Model

Based on the hydrogeologic setting and the site-specific findings of the field investigation, Geosyntec will develop a groundwater model that will serve as a tool to estimate the amount of water that can be infiltrated without causing a detrimental rise (mounding) of groundwater levels in the vicinity. The model will simulate mounding of the water table and estimate a range of volume of water that can be infiltrated by the project without causing shallow groundwater conditions that potentially could adversely affect adjacent utilities, the Caltrain right-of-way, neighboring properties, and the existing facilities at the park. If the investigation, testing, and modeling indicates that the project is viable, the groundwater model will be used to help optimize the design of the infiltration structures and potential dry wells.

The groundwater model will be conducted using MODFLOW[5], which is widely used public domain software that is supported by the United States Geological Survey for simulating groundwater flow. Geosyntec will assign values for subsurface parameters in the groundwater model based on regional information, the site-specific field investigation and testing, and professional judgment.

Our cost estimate assumes steady-state simulations for the following six cases:

Model Run	Description	Comments
1	Percolation without Dry Wells	Base Case (Best-Estimate Properties)
2	Percolation without Dry Wells	Sensitivity Analysis (More Optimistic Properties)
3	Percolation without Dry Wells	Sensitivity Analysis (More Conservative Properties)
4	Percolation with 6 to 12 Supplemental Dry Wells	Base Case (Best-Estimate Properties)
5	Percolation with 6 to 12 Supplemental Dry Wells	Sensitivity Analysis (More Optimistic Properties)
6	Percolation with 6 to 12 Supplemental Dry Wells	Sensitivity Analysis (More Conservative Properties)

For each model case, we will assume a constant water level (applied head) above the bottom of subsurface storage structure and dry wells. Each model case will provide a calculated steady state (equilibrium) infiltration rate. Geosyntec will prepare contour maps showing calculated groundwater mounding and groundwater flow paths that include indication of travel time of groundwater away from the facility. Additional model simulation cases may be run if budget allows based on discussion with Atherton and Caltrans.

The model will also be used to evaluate potential design modifications, including depth and area of the infiltration chamber(s), and number and depth of dry wells, to optimize infiltration capacity.

[5] http://water.usgs.gov/ogw/modflow/

Reporting

Geosyntec will summarize the findings from the field investigation and modeling in a Draft Report. The Draft Report will include geotechnical recommendations for construction at the site such as grading, excavation recommendations, shoring, etc. The report will include:

- Description of field work performed in the drilling and exploration program;
- Final borehole logs prepared by Geosyntec and their location plan;
- Two geologic/geotechnical cross sections;
- Description of the subsurface conditions encountered in the field program;
- Description of the groundwater conditions encountered at the site during drilling;
- Summary of laboratory and field test results;
- Documentation of groundwater model design;
- Results of groundwater modeling and estimated infiltration capacity; and
- Recommendations for grading, temporary excavation slopes, temporary shoring, ground deformation and performance monitoring, ground deformation and vibration.

Conceptual Design of the Water Capture/ Infiltration System

The Holbrook-Palmer Park water capture facility concept design will address several key design, construction, and operational factors and considerations – satisfying the critical success factors. These factors and considerations include but are not limited to: hydraulics and hydrology; TMDL and MRP/MS4 compliance; San Mateo County Public Works Flood Resilience Program diversion processes; pre-treatment of runoff for storage and infiltration; treatment of runoff for beneficial reuse or irrigation; potential irrigation uses and landscaping in the park; geotechnical investigation findings; underground storage and infiltration structure and other civil infrastructure; preliminary site planning; environmental document processing, including identification of needed permits with processing time and challenges identified; coordination with outside regulatory agencies and other regulatory requirements; project schedule through start up; operations and maintenance including long term costs; alternative project delivery methods; and other factors.

Geosyntec will develop a conceptual design for Atherton's approval prior to developing design drawings for construction. To conduct the conceptual design, we will compile existing information about the drainage area to Atherton Channel at the location adjacent to Holbrook Palmer Park (i.e., The Town of Atherton Drainage Study Update prepared by NV5 [2015]), and verify the drainage area using desktop methods (i.e., utilizing topographic information in GIS) and field visits. Geosyntec will conduct long-term continuous simulation hydrologic/hydraulic and water quality modeling of the facility using this confirmed drainage area. Continuous simulation hydrologic/hydraulic and water quality modeling can be used to size the facility hydraulic structures and pumps and understand the potential pollutant load reduction that could be achieved by the facility. Information regarding the feasibility of infiltration and the characterization of infiltration rates developed through field testing tasks described previously will be used to model the infiltration occurring below the facility. In addition, we will use our experience with Opti real-time control logic to identify the potential for optimized retention and/or detention by the facility, and will use the modeling results to design hydraulic structures and Opti real-time controls accordingly. Using Opti real-time controls has been demonstrated to increase the potential for stormwater capture and reduction of peak flows by the facility, as well as optimize non-potable reuse by the facility. Geosyntec will also use the

10-year flood hydrograph developed for the Town of Atherton drainage study (assumed to be available) to run the 10-year flood simulation for the facility, to examine the outcomes for the facility during flood flows.

Geosyntec has considerable experience with the main pollutants of concern (PCBs, mercury, and other urban pollutants) in the Bay Area, having worked on numerous Bay Area Stormwater Management Agencies Association (BASMAA) and municipal projects, including leading the development of a Technical Guidance document for conducting Reasonable Assurance Analyses (RAA) for PCBs and Mercury TMDL compliance in the San Francisco Bay Area, along with a Caltrans project focused on trash control and San Francisco TMDL compliance. Geosyntec is aware of the RAA that is currently in development for San Mateo County, and can use the results of this RAA modeling to estimate pollutant loading from the drainage area to Atherton Channel adjacent to Holbrook Palmer Park, based primarily on land use. These pollutant-loading inputs will be used in a project-specific water quality model that can estimate the potential pollutant load reductions achieved by the facility through retention and/or detention. Geosyntec has conducted statistically robust water quality modeling for watershed-scale and project-scale stormwater modeling for over a decade, and will use this wealth of experience to develop the facility water quality model. Additionally, we have experience selecting and sizing trash management devices, and through our experience with Caltrans and other projects can utilize this background to identify the trash loading rates in the drainage area to the channel and size the facility pre-treatment trash capture devices.

Geosyntec will document the findings of the facility sizing and real-time control operations models, as well as the water quality modeling, and use this to develop a 10% level conceptual design plan for the facility. The 10% conceptual design will identify the total drainage area, the facility size and dimensions, and locations of inlet, outlet, and other hydraulic structures. This 10% level concept design will be presented to the Town of Atherton for approval prior to moving forward with construction design drawings.

CEQA Review

Upon start of the project, MIG will review all available relevant materials, conduct a site visit, and draft an initial data request to Geosyntec listing information needed for the CEQA analysis. We will gather information from existing documents and begin establishing the environmental and regulatory setting discussions. MIG will use the information collected to formulate a comprehensive description of the project. The Project Description will describe the project location, existing site conditions, all features of the proposed project, all phases of project construction, project objectives, and permits required. The Project Description will be supported with maps, photos, and site plans, as appropriate. MIG will work closely with the Geosyntec team and the Town of Atherton to formulate an accurate and detailed description of the project, its construction phases, and operational aspects.

The Project Description will be reviewed by Geosyntec, Atherton, and other interested parties to ensure the project is described accurately. The Project Description will be the basis of the impact analysis presented in the Initial Study.

MIG will prepare an Administrative Draft Initial Study that complies with the requirements of CEQA. MIG will prepare a thorough environmental analysis using the Initial Study Checklist contained in Appendix G of the CEQA Guidelines. The Initial Study will include site plans, maps, graphics, and figures as needed to support the analysis. The project description will reference standard measures and BMPs incorporated into the project to avoid or minimize environmental effects. Mitigation measures will be recommended in the Initial Study if potential impacts would not be reduced to less-than-significant impacts through implementation of incorporated BMPs or agency requirements.

Based on our current understanding of the project, MIG anticipates the project will have little to no impact on most environmental resource areas analyzed under CEQA, including: Aesthetics, Agricultural/Forestry, Hazards/Hazardous Materials, Land Use/Planning, Mineral Resources, Population/Housing, Public Services, Recreation, and Utilities. We will provide comprehensive responses to the Checklist questions, but potentially significant impacts are not anticipated. Based on our knowledge of the project, we anticipate discussing the following resource areas in greater detail in the Initial Study:

- Air Quality/Greenhouse Gases (GHG);
- Biological Resources;
- Cultural Resources/Tribal Cultural Resources/Paleontological Resources;
- Geology and Soil;
- Hydrology and Water Quality;
- Noise; and
- Transportation/Traffic.

MIG will review all written comments received during the public review period and prepare a memorandum responding to comments for Atherton's review and consideration prior to project approval. Anticipating the project is not likely to generate a large volume of comment; we have allocated 19 hours for this task. Should the task require less effort, we will only bill the time necessary to complete this task. We will prepare a draft of the response to public comment, respond to one round of administrative comments, and finalize the document.

MIG will prepare a Mitigation, Monitoring, and Reporting Plan (MMRP) according to Section 15097 of the CEQA Guidelines. The MMRP will present all the mitigation measures identified in the IS/MND in a table format. For each measure, the MMRP will identify the responsible party for ensuring proper implementation, the timing of implementation, and method of verification. Atherton can use the table to track implementation and monitoring of the mitigation measures.

Upon project approval and adoption of the IS/MND, MIG will prepare a Notice of Determination (NOD) and provide an electronic copy to Atherton for its use. Atherton will be responsible for filing the NOD at the County Clerk's office and paying the required CDFW filing fee.

Landscape Architecture

Evaluating the Alternatives

CALA has a long history of work in and around Holbrook-Palmer Park, providing us a good understanding of the park, its history, and its importance to the community. CALA's focus will be to evaluate impacts of proposed design solutions to the park, in the context of the park master plan, and provide input on how to minimize impacts to the existing mature trees and amenities. Additionally, the proposed solutions will all generate a large amount of soil spoils that represent a potential significant cost to the project. We will not only evaluate disbursement of the soil onsite but will use our knowledge of regional projects to identify potential projects/agencies that are looking for clean fill for offsite disbursement.

Open Space Restoration

Not all fields are designed the same. There is a myriad of different drainage systems, irrigation methods, growing media, and turf types one can choose. Our approach with every project is to evaluate existing

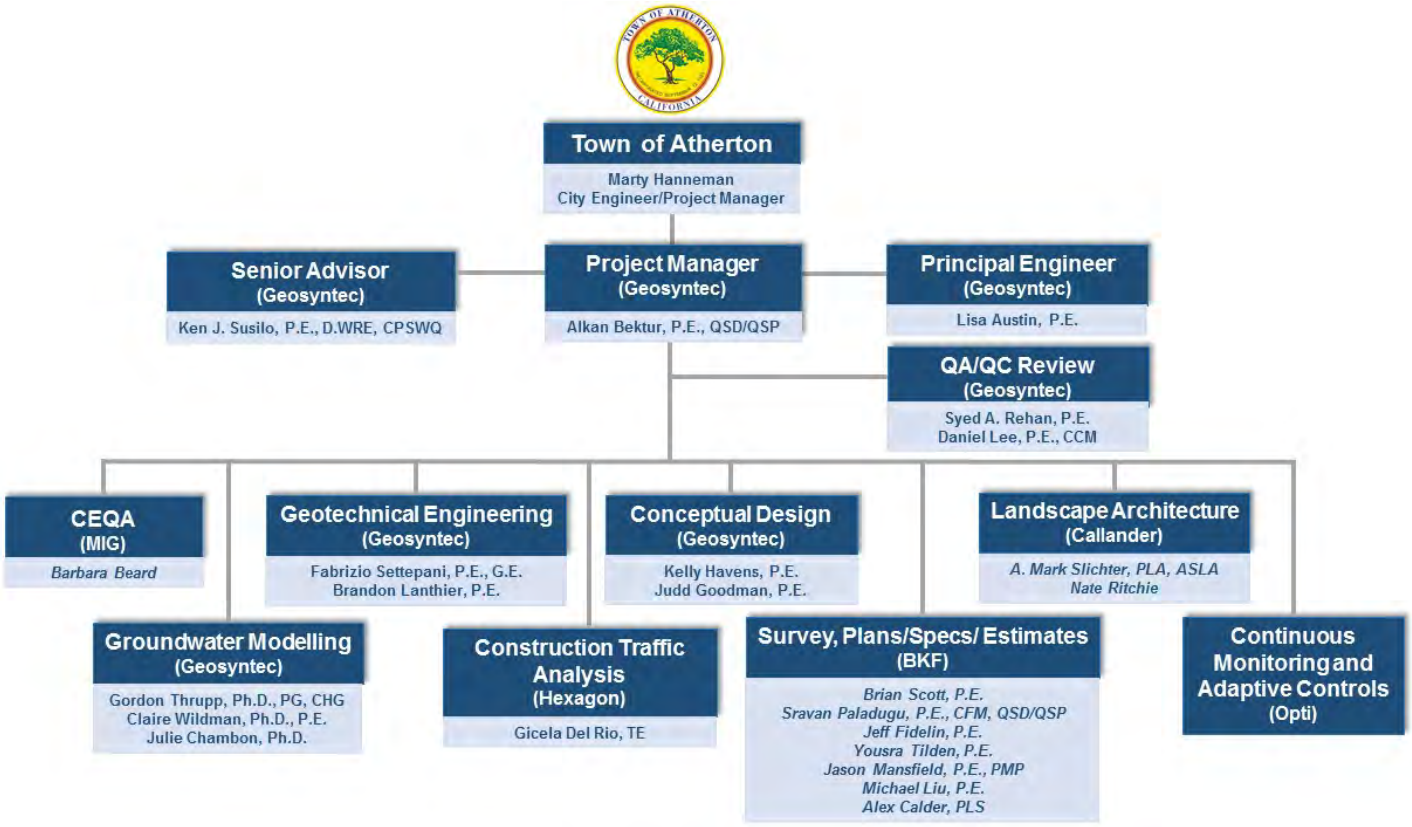
conditions, and the type of use the fields will receive, then determine the appropriate combination of techniques and materials to maximize the use of the fields while at the same time minimizing water and maintenance. This field will be unique in that large subsurface treatment structures will complicate the field's drainage and depth of soil. We will use our experience to work with Geosyntec to develop solutions that ensure the long-term success of the fields.

Water Re-Use

Many of CALA's projects have used recycled water and/or well water for irrigation purposes. These sources have inherent challenges in obtaining the necessary pressure and flow, increased number of particulates that can clog certain systems, and water quality impacts on plant health. Our experience will help the team design the appropriate pump and filtration systems and will aid in our design of the irrigation system and plant selections.

TEAM ORG CHART

Our proposed team possesses the range of skills, trained and licensed professionals, and familiarity with the Atherton site to meet the requirements of the City's proposed scope of work. We propose the following organization of personnel for the project:



Resumes of the key staff members listed above are attached to the end of this SOQ.

PRELIMINARY TIMELINE AGREEMENT

Geosyntec and all its subcontractors listed above are available to begin work immediately upon approval of the contract and will meet the time frames indicated in the preliminary timeline.

PRIMARY LOCATION

Geosyntec Consultants, Inc.
1111 Broadway, 6th Floor
Oakland, CA 94607
(510) 836-3034

RESUMES ATTACHED

Please see attachment to SOQ

CONSULTANT SERVICES AGREEMENT

Comments or Requested Changes to the Consultant Services Agreement

Geosyntec has reviewed the consultant services agreement and our comments have been included below, in red:

Attachment 4 – Page 11 – Section 2
Consultant's Services. Consultant shall perform the ~~bicycle lane improvement~~ services described in Exhibit A ("Scope of Work" and/or "Services") in accordance with generally accepted standards of professional practice ~~to the full satisfaction of Town~~.
Comment: Added to clarify that the work product provided by professional service providers is not on a 'satisfaction' basis, but on the one specified here.

Attachment 4 – Page 14 – Section 13
This indemnity does not apply to liability for damages arising from the ~~sole~~ negligence, active negligence, or willful acts of the Town its elected and appointed officials, officers, directors, attorneys, agents, and employees and each of them.
Comment: Removed to align the clause with 2782.8, and what is customary and insurable under Geosyntec's insurance policies.

Exhibit C – Pages 26-27 – Verification of Coverage
CONSULTANT shall furnish the TOWN with original certificates and amendatory endorsements ~~or copies of the applicable policies~~ if requested by Town. All certificates and endorsements are to be received and approved by the TOWN before work commences. However, failure to obtain the required documents prior to the work beginning shall not waive the CONSULTANT's obligation to provide them. ~~The TOWN reserves the right to require complete, certified copies of all required insurance policies, including endorsements required by these specifications, at any time.~~
Comment: Geosyntec's insurance coverage is the result of extensive negotiations with its carriers, and as such the terms of its policies are confidential and proprietary. Geosyntec cannot risk this material being publicly disclosed.

LISA AUSTIN, P.E.

stormwater management planning
stormwater BMP selection, evaluation, and design
NPDES permitting

EDUCATION

M.S., Civil Engineering, Southern Illinois University, Carbondale, 1992
B.S., Environmental Engineering, Southern Illinois University, Carbondale, 1986

REGISTRATIONS AND CERTIFICATIONS

Professional Engineer Civil Engineering (P.E.), California, Number 74663

CAREER SUMMARY

Ms. Austin has over 25 years of experience in water quality and stormwater management. She has in-depth knowledge of both industrial and municipal National Pollutant Discharge Elimination System (NPDES) permitting; municipal stormwater program planning; stormwater best management practice (BMP) selection, design, and maintenance; development project stormwater management planning and environmental review, and total maximum daily loads (TMDL) implementation planning.

Ms. Austin's unique mix of experience as a regulator with the state, a permittee with the city, and a consultant to both public and private clients has given her an understanding of the complex relationships between Clean Water Act regulatory programs such as the NPDES permitting program and TMDLs, and other environmental regulatory programs such as the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Endangered Species Act.

Ms. Austin completed a six-year term on the California Stormwater Quality Association (CASQA) Board of Directors and is now serving on the Executive Program Committee (EPC), where she works with fellow Board and EPC members in developing policies and positions concerning regulations, legislation, and litigation potentially impacting CASQA members.

Stormwater Management Planning

Alameda Countywide Clean Water Program On-Call Technical Support, Alameda Countywide Clean Water Program, *Alameda County, California.* Ms. Austin served as project director and technical lead in assisting the Alameda Countywide Clean Water Program (ACCWP) in various

stormwater management planning and program implementation tasks. Her tasks included providing technical assistance for the Clean Watersheds for Clean Bay (CW4CB) project, including industrial site inspection, referral, and sediment monitoring design; enhanced operation and maintenance practice monitoring study design; and treatment control measure retrofit planning. Ongoing tasks include assisting with polychlorinated biphynels (PCBs) and mercury TMDL implementation planning, such as assisting the ACCWP Permittees with identifying, characterizing, and managing PCBs and mercury source areas and reporting on these activities in compliance with the San Francisco Bay Municipal Regional Permit (MRP).

City of Dublin Green Infrastructure/Stormwater Resource Plan, City of Dublin*, Dublin, California*. Ms. Austin served as project director for a project to provide technical services relevant to the City's Green Infrastructure Plan required by the MRP, with the goal of developing impervious area retrofit and redevelopment targets, identifying potential green infrastructure projects, and performing budget analyses. The technical services were conducted to develop elements for insertion into the City's Green Infrastructure workplan. The project also examined the potential to develop a SWRP, which built off the work completed for the Green Infrastructure Plan efforts and examined the potential for other types of projects, specifically stormwater capture projects.

Clean Watersheds for a Clean Bay Task 5, BASMAA, *Alameda County, California.* Ms. Austin took a lead role in proactively facilitating the effort necessary for the completion of the Clean Watersheds for a Clean Bay (CW4CB) Task 5 project. CW4CB used a partnership-driven strategy to take the next step in a multi-year regional effort to reduce loading of sediment-bound pollutants to the Bay and implement the PCBs and mercury TMDLs water quality restoration programs. The objective of Task 5 was to retrofit 10 urban runoff treatment facilities into existing infrastructure throughout the Bay Area and to evaluate their effectiveness. Ms. Austin developed a planning and implementation strategy that was used to successfully plan, design, implement, and monitor the retrofit projects.

City of Sunnyvale Smart Station Feasibility Study, *City of Sunnyvale, California.* Ms. Austin served as project manager for preparation of a feasibility study and a feasibility study addendum for structural BMP implementation at the Sunnyvale Materials Recovery and Transfer Station (SMaRT Station). The facility is regulated under the California Industrial Stormwater General Permit. The feasibility study, a requirement of a Baykeeper Settlement Agreement, evaluated diversion of stormwater runoff to the adjacent water pollution control plant operated by the City and treatment in on-site stormwater treatment BMPs. As a follow-up to this project, Ms. Austin served as project director for a project to design and prepare bid documents and provide construction support for the SMaRT Station Stormwater Management System Upgrade Project.

The scope of work included preparation of a preliminary design, design development, bid documents, and bidding/construction support for Public Works competitive bidding. Ancillary work included construction cost estimating, schedule monitoring, preparation of reports and recommendations, and project management.

PROFESSIONAL EXPERIENCE

Geosyntec Consultants, Oakland, California, 2002 – Present
City of Bellevue Utilities Department, Bellevue, Washington, 2000 – 2002
Washington State Department of Ecology, Bellevue Washington, 1990 – 2000
CH2M Hill, Bellevue, Washington, 1988 – 1990

Geosyntec consultants

ALKAN BEKTUR, P.E., QSD/QSP

water resources engineering
cost estimating
feasibility analysis
project management

EDUCATION

M.S., Civil and Environmental Engineering, University of Iowa, Iowa City, 2003
B.S., Civil Engineering, Gazi University, Ankara, Turkey, 2001

REGISTRATIONS AND CERTIFICATIONS

Civil Engineer (P.E.), California, Number C72697
Qualified SWPPP Developer (QSD)/ Qualified SWWWP Practitioner (QSP), Number 01014

CAREER SUMMARY

Mr. Bektur has 14 years of experience in water resources engineering design and project management. He has participated in the development of many stormwater drainage improvement projects, which involved stormwater drainage master planning, hydrology analysis and hydraulic design, floodplain modelling, integration of GIS in hydraulic analysis, design drawing and specification preparation, sediment transport and water quality analysis.

He has over 5 years of experience in the design of domestic water distribution networks and wastewater collection systems, irrigation water distribution networks, and water and wastewater pump stations. Throughout his career, Mr. Bektur designed and has been involved in the construction of various steel and concrete structures such as loading docks, retaining walls, steel and concrete push walls, concrete pavements and slabs on grade, wet wells, concrete channels, weir structures, spillways and energy dissipaters.

Mr. Bektur joined Geosyntec in 2014 as a senior engineer and project manager in the Geotechnical and Environmental Engineering group, and specializes in the management of stormwater and integrated water resource management projects located on difficult and geotechnically challenging sites.

Highlights of Mr. Bektur's current and past assignments are summarized below.

Sunnyvale Materials Recovery and Transfer Station Stormwater Management System (SWM) Upgrade, *Sunnyvale, California.* Mr. Bektur served as the design engineer and the project

manager for the project. The SWM upgrades consisted of constructing a stormwater diversion system in and around the existing facility to separate first-flush/ low flow runoff and divert it to the Water Treatment Plant via a pressure pipe network. The construction plans were prepared to minimize impact to the ongoing Transfer Station operations and the safety of the public using the transfer station. The design work included construction plans, details and specifications for the construction of pump station, wet well, sampling vaults, flow diversion structures, SCADA system installation, gravity flow and force main piping, discharge structures and associated trenching, shoring and dewatering activities.

Altamont Covered Aerated Static Pile (CASP) Compost Facility, *Livermore, California.* Mr. Bektur was the lead design engineer engineer of record of the CASP compost compost facility and wastewater storage pond construction project. The project involved construction of low permeability working and curing pads for composting operations, construction of a stormwater management system that separates runoff that has been in contact with compost and collecting the contact water in a geosynthetic-lined storage pond to be re-used for composting operations using a pump and pressure pipe network.

Sunnyvale Landfill Post-Closure Erosion Protection Project, *Sunnyvale, California.* Mr. Bektur was one of the design engineers of this project. The project scope included evaluation of existing recreational uses of the closed landfill to provide access improvements. The closed landfill is adjacent to the Bay Trail and is heavily used by the public. Main tasks involved assessment of landfill cover erosion due to public use, evaluation of existing and proposed access paths, installation of informational and regulatory signage, construction of protective surfacing at heavily accessed areas, and construction of restrictive fencing where limited access is required to protect the integrity of the landfill final cover, drainage and or gas control systems as well as the wildlife habitat.

Altamont Landfill Resource and Recovery Facility Fill Area 2 Master Development Plan, *Livermore, California.* Mr. Bektur recently completed the stormwater management master plan for the development of FA2. The plan includes a series of sediment basins, bio-swales, flood control channels, and piping.

McAllister Ranch Recreational Community Master Development Project, *Bakersfield, California.* Mr. Bektur was the lead engineer for the design of the wastewater collection and domestic water distribution network for the +2000-acre, +6000 single-family and multifamily dwelling residential and commercial development project. The project included community lake, beach club, golf course, water storage and distribution network, and multiple sewer pump stations.

TRSL Jurisdictional Waters Delineation, *Bakersfield, California.* Mr. Bektur provided engineering support during the delineation project which consisted of reviewing the existing conditions at the site and evaluation of downstream connectivity of any onsite features, as well as providing supporting documentation for the regulatory authority of the United States Amy Corps of Engineers (ACOE), Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW).

Erosion Repairs and Drainage Improvements at Various Kern County Sanitary Landfills, *Kern County, California.* The project consisted of emergency erosion repairs and drainage improvements at Lost Hills Sanitary landfill, Buttonwillow Sanitary Landfill, Lebec Sanitary Landfill and the China Grade Sanitary Landfill. The FEMA-funded emergency project scope included grading, slope protection material, and erosion control mat installation, repairing, and realigning, and replacing existing drainage structures.

PROFESSIONAL EXPERIENCE

Geosyntec Consultants, Oakland, California, 2014 – Present
Kern County Public Works Department, Bakersfield, California, 2008 – 2014
Stantec Consulting, Inc., Bakersfield, California, 2005 – 2008
Iowa Department of Transportation, Ames, Iowa, 2005
Cornerstone Engineering, Bakersfield, California, 2004 – 2005
Linhardt Laboratories, University of Iowa, Iowa City, 2002 – 2004

Geosyntec consultants

JULIE CHAMBON, Ph.D.

groundwater flow and transport modeling
site investigation and remediation
water resources

EDUCATION

Ph.D., Environmental Engineering, Technical University of Denmark, Lyngby, Denmark, 2012
MSc., Environmental Engineering, Technical University of Denmark, Lyngby, Denmark, 2007
MSc., Engineering, Ecole Centrale de Lille, Lille, France, 2007

CAREER SUMMARY

Dr. Chambon is a project engineer in Geosyntec's Environmental Science and Engineering Group. She offers expertise in groundwater modeling and remediation, and has worked with a large variety of clients and projects. She is responsible for managing and supporting a number of projects that include remediation performance evaluation, groundwater monitoring, flow and transport modeling, and site investigation and characterization. She applies her background in environmental engineering, hydrogeology, flow and transport modeling, and microbiology to remediation projects.

Groundwater Flow and Transport Modeling

Puente Valley Operable Unit, Superfund Site, Northrop Grumman, *Puente Valley, California.* Dr. Chambon is the project manager for the Puente Valley Operable Unit Intermediate Zone Interim Remedy. The project includes development of a conceptual site model, groundwater flow model, and designing, and implementing the groundwater extraction and treatment of contaminated groundwater. Dr. Chambon is also the lead modeler on this project; she has updated an existing groundwater flow model and performed transient calibration. The FEFLOW model covered the entire San Gabriel Basin and consisted of 17 layers. The transient model was calibrated to a 40-year simulation period, and a series of datasets collected during multiple aquifer tests. Following model calibration, 30-year transient predictive simulations were performed to evaluate potential well field configurations for two proposed groundwater extraction systems. The model was also used to evaluate potential re-injection design for the remedy.

Numerical Model Development for Groundwater Flow and Solute Transport for Quarry Reclamation Plan, *Aromas, California.* Dr. Chambon developed, calibrated, and performed predictive simulations of a numerical flow and transport 3D model for assessing reclamation

alternatives for a quarry. The model was used to assess the impact of the development of the quarry on local and regional groundwater flow in a complex geological system with multiple faults and fractures.

Solute Transport Modeling for Drinking Water Permit Application, East Side Performing Settling Defendants, *El Monte, California.* Dr. Chambon led the development of a solute transport model to assess expected concentrations at extraction wells in support of a drinking water permit application for a pump-and-treat remedy. The solute transport model included simulation of 6 compounds over a predictive period of 30 years.

Groundwater Modeling Work Plan, Settling Work Defendants for the Omega Chemical Corporation Superfund Site, *California.* Dr. Chambon led the preparation of the groundwater flow modeling work plan for the Omega Chemical Corporation Superfund Site, Operable Unit 2. The work plan described the development and calibration of the groundwater flow model to be developed to support design of the pump-and-treat system, selection of the compliance monitoring wells and performance evaluation of the remedy after system start-up.

Site Investigation and Remediation

Groundwater Monitoring, Settling Work Defendants for the Omega Chemical Corporation Superfund Site, *California.* Dr. Chambon led the preparation of the groundwater monitoring report for the Omega Chemical Corporation Superfund Site, Operable Unit 2. The groundwater monitoring report summarized the results of the annual groundwater monitoring, and included analysis of groundwater flow, contaminant distribution, and contaminant trends.

Water Resources

Assessment of Groundwater Recharge Project, Los Angeles Department of Water and Power, *Los Angeles, California*. Dr. Chambon assisted in assessing the feasibility of groundwater recharge via re-injection along the Los Angeles River in Los Angeles. The work included review and compilation of available hydrogeological, water quality and regulatory data, and review of a numerical model developed by the Water Replenishment District for the area. Dr. Chambon assisted with assessing the project requirements regarding number of re-injection wells, treatment system, and available river water for recharge.

PROFESSIONAL EXPERIENCE

Geosyntec Consultants, Oakland, California, 2012 – Present
Technical University of Denmark, Lyngby, Denmark, Research Assistant, 2007 – 2008, 2010

Geosyntec consultants

JUDD GOODMAN, P.E.

geomorphology and hydromodification
hydrology and hydraulics
water quality

EDUCATION

M.S., Environmental Engineering, University of California, Berkeley, 2007
B.S., Civil Engineering, University of California, Berkeley, 2003

REGISTRATIONS AND CERTIFICATIONS

Professional Civil Engineer (P.E.), California, Number C73783

CAREER SUMMARY

Mr. Goodman has 12 years of experience in planning, design, and adaptive management of surface and potable water systems. His most significant technical contributions have been solving surface water problems, which require both an engineering and geomorphic perspective. He has been involved in a variety of projects, including hydromodification planning and impact analysis, stream channel rehabilitation design, geomorphic field assessment and monitoring, erosion and sediment control inspection, design of stormwater management systems, and storm event characterization for litigation support. His project contributions include project management, hydrologic modeling, hydraulic calculations, sediment budget and transport analysis, geographic data analysis, historical document review, and field reconnaissance.

Geomorphology and Hydromodification

Tejon Ranch, Centennial Founders LLC, *Los Angeles County, California.* Mr. Goodman authored a Hydromodification Technical Report (HMTR), which assesses the potential stormwater impacts on local channel stability as specified in the Centennial Specific Plan. The HMTR serves as a technical appendix for the Project's Draft Environmental Impact Report (EIR) and supplements a Water Quality Technical Report (WQTR), also authored by Geosyntec. The evaluation of geomorphic impact was based on California Environmental Quality Act (CEQA) significance criteria that included characterizing changes to the four key factors that affect channel stability.

Santa Ana-Delhi Channel Mitigation, Rehabilitation, and Coastal Access Conceptual Design, Orange County Public Works – Flood Control Design, *Orange County, California.* Mr.

Goodman managed a conceptual rehabilitation design for approximately 4,000 linear feet of the Santa Ana-Delhi Channel, between Mesa Drive and its outlet to Upper Newport Bay, for the purpose of restoring/mitigating the reach to offset impacts associated with upstream/watershed improvements and to address current and future erosion issues. In support of a water diversion project upstream of the reach, Mr. Goodman calculated dry weather runoff rates in the channel using available flow records.

NorthLake Development, Woodridge Capital Partners, LLC, *Los Angeles County, California.* Mr. Goodman managed the development of a hydromodification control plan for the NorthLake Project. The work required close coordination with the project's civil engineer. The purpose of this work was to select and size hydromodification controls (e.g., on-site Low Impact Development [LID] best management practices [BMPs], regional flow control facilities, high flow bypass, and/or in-stream mitigation) to meet the hydromodification control requirements of the Los Angeles County Municipal Separate Storm Sewer System (MS4) Permit and LID Standards Manual. Mr. Goodman's team reviewed available data and filled data gaps with desktop analyses; performed a field reconnaissance; characterized the existing geomorphic setting; characterized geomorphic conditions of concern due to the proposed project; modeled long-term changes in hydrology, bed sediment supply, and effective work to evaluate hydromodification control sizing; documented findings in a HMTR, which supplemented the WQTR; and authored an EP conformance memorandum as part of the project's LID plan.

Erosion Potential Modeling Analysis, Bay Area Stormwater Management Agencies Association (BASMAA), *San Francisco Bay Area, California*. Mr. Goodman led a modeling analysis to evaluate the suitability of alternative hydromodification control standards, compared to the flow duration curve matching criteria included in the San Francisco Bay Area Municipal Regional Stormwater NPDES Permit (MRP). He performed long-term continuous geomorphic work calculations for a range of bioretention BMP footprints; documented his assumptions, results, and conclusions in a technical memorandum. Because of this work, the SFRWQCB added a hydromodification management standard in the updated MRP (Provision C3.g.iii of Order Number R2-2015-0049), which allows for direct simulation of EP.

Landfill Remediation, Presidio Trust, *San Francisco, California.* Mr. Goodman developed a geomorphically referenced conceptual design for a stream day-lighting project adjacent to an abandoned landfill. Project objectives included remediation of the landfill, enhancement of the riparian corridor, and recreational use on the landfill cap. Design methods included a geomorphic impact analysis based on comparing long-term sediment transport capacity for the baseline and proposed channel conditions; consistency with past restorations and lessons learned in the

watershed; and comparison to empirical bankfull width and depth relationships in the region. He also designed the stormwater management system for the landfill cap.

Hydrology and Hydraulics

Hydrologic/Hydraulic Analyses, Altamont Landfill, *Livermore, California.* Mr. Goodman performed hydrologic and hydraulic analyses for the surface water management system. Hydrologic analyses were based on the TR-55 method. He designed a sedimentation basin and outlet structure using HEC-HMS and customized spreadsheet files to meet sediment control, water quality, and flood control objectives. Additionally, Mr. Goodman sized energy dissipation structures at storm drain outlets.

Water Quality

NPDES Industrial General Permit Compliance, Confidential Client, *Alameda County, California.* Mr. Goodman performed field work to comply with the monitoring program and reporting requirements of California's NPDES Industrial General Permit. He conducted additional hydrologic analyses to determine the feasibility of a future zero discharge retention pond and helped draft design drawings of a temporary outlet structure.

North Natomas Detention Basin No. 4, Confidential Client, *Sacramento, California.* Mr. Goodman assisted in the setup of water quality sampling stations at the inlet and outlet of a wet pond. He calculated volume increments for sampling based on pump data provided by the client. Mr. Goodman prepared training materials for sub-consultants on the operation and programming of the sampler equipment. He also created tables and graphs summarizing the hydrologic results of monitoring events.

PROFESSIONAL EXPERIENCE

Geosyntec Consultants, Oakland, California, July 2007 – Present
AKM Consulting Engineers, Irvine, California, April 2004 – August 2006
University of California at Berkeley, Geomorphology Research Assistant,
June 2003 – August 2003
Alan Kropp and Associates, Berkeley, California, June 2002 – December 2002
Siskiyou National Forest, Gold Beach, Oregon, June 2000 – August 2000

Geosyntec consultants

KELLY L. HAVENS, P.E.

urban stormwater management
hydrologic and water quality modeling

EDUCATION

M.S., Civil Engineering, University of California, Los Angeles, 2008
B.S., Engineering Geology, University of California, Los Angeles, 2007

CERTIFICATIONS

Professional Civil Engineer, California, License Number: 80044
40-hour HAZWOPER

CAREER SUMMARY

Ms. Havens has ten years of experience with management and technical analyses for stormwater management and water quality projects, with a focus on urban and municipal areas, including stormwater best management practices (BMP) technical guidance and feasibility studies, sizing and design, hydrologic, hydraulic, and water quality modeling, and National Pollutant Discharge Elimination System (NPDES) permit and stormwater requirements evaluation and compliance.

Stormwater and Water Quality

Caltrans TMDL Phase I Plan, Michael Baker International, *Alameda, Contra Costa, and Santa Clara Counties, California.* Ms. Havens served as a technical advisor for a Phase I Plan for TMDL implementation and trash reduction in Caltrans District 4 to address compliance requirements in the Caltrans Statewide NPDES Permit. The project included evaluation of sites along the Caltrans right-of-way (ROW) for implementation of stormwater BMPs.

San Francisco Bay Area Reasonable Assurance Analysis Guidance Document, ***BASMAA,*** *Alameda County, California.* Ms. Havens served as project manager for a regional project to develop a guidance document for conducting modeling and analyses required to demonstrate reasonable assurance that permittees can meet water quality goals required by the MRP.

City of Dublin Green Infrastructure Plan/Stormwater Resource Plan, *City of Dublin, California*. Ms. Havens serves as Project Manager for a project for the City of Dublin aimed to provide technical support for their Green Infrastructure (GI) Plan in compliance with the San Francisco Bay Area Municipal Regional Permit (MRP). The project includes calculations of the load reductions, BMP Opportunity and Prioritization Analyses, Cost Estimates, and GI Details.

Monterey Peninsula Stormwater Resource Plan, *Monterey Regional Water Pollution Control Agency, Monterey, CA.* Ms. Havens serves as Project Manager for a large project to develop a Stormwater Resource Plan for the Monterey Peninsula region. The project includes development of the Plan per the Guidelines as well as conducting the Peninsula Water Recovery Study, which aims to identify opportunities in the region to capture and use stormwater for water supply.

Clean Watersheds for a Clean Bay, BASMAA, *Alameda County, California.* Ms. Havens assisted with multiple portions of the Clean Watersheds for a Clean Bay project, funded by the United States Environmental Protection Agency (EPA). She assisted with siting, sizing, conceptual design, and monitoring plans for urban treatment retrofit BMPs required through the MRP, as well as the BMP effectiveness assessment to calculate load reduction performance.

Industrial Site BMP Design, Hanson Pipe & Precast, Inc., *Tacoma, Washington.* Ms. Havens assisted in development of an engineering design for stormwater management and treatment at a manufacturing facility, included in a grading permit submittal to the City of Tacoma. She conducted BMP sizing and design for a detention basin, bioretention facility, and other measures.

Grapevine Hydrology and Hydraulics Report, *Grapevine, California.* Ms. Havens compiled flood control, BMP sizing, and erosion and sediment control modeling results and approaches to develop a hydrology and hydraulics report in accordance with CEQA.

RISE:NYC Active Floodproofing Project, *New York City Economic Development Corporation, New York City, New York.* Ms. Havens is co-managing a storm surge resiliency project in New York City. The project includes conducting field assessments to provide floodproofing information to small businesses through a resiliency report and Opti dashboard so they can increase their resiliency during extreme events. The project also includes pilot project design.

Green Infrastructure BMP Sizing for CSO Reduction, *City of Akron, OH.* Ms. Havens was the lead Stormwater Management Model (SWMM) modeler for a large-scale project set in Akron, OH, aimed at reducing instances of city CSOs from the combined storm sewer. She conducted GIS analyses, SWMM modeling, including modeling of Opti control logic to examine facility performance with the addition of real-time controls, and developed/enhanced spreadsheet and Python-based tools to develop model inputs.

Summer Street Stormwater Improvement Project - *Windham, NH.* Ms. Havens conducted storm drainage delineations using GIS, and sized storm drain pipes and grass swales for a stormwater improvement project located in New Hampshire.

Newport Bay Trash Management Plan – *Orange County, CA.* Ms. Havens assisted with the development of a trash management plan for the Newport Bay watershed. Tasks include development of priority land use maps, a trash management approach, and delivering memorandums and webinars to stakeholders.

BRANDON LANTHIER, P.E.

geotechnical engineering
foundation engineering
temporary shoring
BMP/SWPPP

EDUCATION

M.S., Geotechnical Engineering, University of California, Los Angeles, 2013
B.S., Civil Engineering, University of California, Los Angeles, 2012

REGISTRATIONS AND CERTIFICATIONS

Professional Civil Engineer (P.E.), California, Number C84309

CAREER SUMMARY

Mr. Lanthier is an engineer specializing in the geotechnical design of civil infrastructure projects. Prior to joining Geosyntec, Mr. Lanthier worked as a drilling and shoring contractor performing design-built and design-bid-build infrastructure and foundation retrofit projects through Southern California. He has designed over 200 permanent micropiles and tension piles, as well as numerous soil nail retaining walls and cantilevered soldier pile walls. He has performed project management and estimating services on a wide variety of soil nail retaining wall, tieback shoring, soldier pile shoring, cast in drilled hole (CIDH) pile construction, and micropile foundation retrofit projects. He also has performed proof, performance, and investigatory load testing on a full range of soil nail, tieback, tension pile, micropile, and augercast pile installations.

At Geosyntec, Mr. Lanthier has worked as an engineer and field technician on a variety of projects in the western United States. He has performed settlement and stability analyses on contaminated organic soils for a major Bay Area refinery. Mr. Lanthier has experience conducting CQA services during a landfill construction in Arizona and California. He also has interdisciplinary experience performing field investigations, plan drafting, and design of BMP and stormwater system improvements along I-880.

BMP and Stormwater Engineering Design

Caltrans TMDL Phase I Plan, I-880, *Caltrans District No. 4, California.* Mr. Lanthier was a designer on this project, and his responsibilities included: a virtual survey to identify over 150 potential BMP improvement sites along 57 miles of I-880; development of aerial plans to conduct

field surveys of potential BMP improvement sites; review of Caltrans as-builts from the past 80 years to identify drainage network and utility and structural conflicts; leading field crews with 2 additional engineers to survey existing site conditions; preparing recommendations for 20% conceptual plans on recommended BMP improvements; drafting 20% conceptual designs of BMP sites; and collaborating with Caltrans to ensure that their preferred BMPs were being recommended. This project was particularly challenging due to the vast area that required surveying, the scarcity of consistent and accurate as-builts, and changing project emphases in response to client requests.

Geotechnical Soil Nail and Other Specialty Retaining Walls Design and Construction

Loma Linda Hospital, *Loma Linda, California*. Mr. Lanthier served as a design engineer for the drilling subcontractor. He worked as part of the team comprised of the drilling subcontractor and their subcontracted structural engineer to design a permanent tieback supported concrete lagging soldier pile wall for a new hospital. The wall completed encased the subgrade portions of the hospital to allow for the installation of a base isolation system. The designed wall included over 20,000 square foot of new wall and over 200 permanent tiebacks. The challenging aspects of this project included determining the location of the tiebacks to miss existing and planned utility installations and to design details and specifications to higher OSHPD standards.

Regional Corridor Connector, *Los Angeles, California.* Mr. Lanthier was the project manager for the drilling subcontractor. His responsibilities included: constant communication with design engineer team and general contractor to iterate and improve upon conceptual design drawings; mitigating groundwater conditions; procuring material for over 1,000+ temporary tiebacks and over 100+ steel and fiberglass soil nails; managing multiple concurrent crews on day and swing shifts; performing and interpreting testing and locking-off of temporary tieback elements; evaluating existing utilities to modify steel element layout; and training crews for confined space safety. The challenging aspect of this project involved working under existing Los Angeles utilities and infrastructure and installing a shotcrete temporary soil nail shoring system on a wet sand material that was not receptive to shotcrete application. The team created a new technique to stabilize the exposed cut soils prior to shotcrete application.

PROFESSIONAL EXPERIENCE

Geosyntec Consultants, Oakland, California, July 2016 – Present
Drill Tech Drilling & Shoring, Inc., Corona, California, June 2013 – July 2016

Geosyntec consultants

DANIEL LEE, PE, CCM

civil design
stormwater management

EDUCATION

M.S., Civil Engineering, UCLA, Los Angeles, California, 2007
B.S., Civil Engineering, UCLA, Los Angeles, California, 2006

REGISTRATIONS AND CERTIFICATIONS

Professional Engineer (Civil), California, No. 73263

Leadership in Energy & Environmental Design (LEED AP), US Green Building Council
Envision Sustainability Professional (ENV SP), Institute for Sustainable Infrastructure
Qualified SWPPP Developer/Practitioner, California Stormwater Quality Association

CAREER SUMMARY

Mr. Lee has over 12 years of experience working on a variety of private and public development projects in all phases of the project life cycle, including planning, engineering design, regulatory compliance, and construction management. His experience focuses on design and construction of stormwater facilities and various civil infrastructure projects. Other work experience includes alternative project deliveries; hydrology and hydraulic modeling; stormwater management; and design of streets, potable and recycled water, and drainage and sanitary sewer facilities.

Van Nuys Terminal Stormwater Improvement*, Chevron, Los Angeles, CA*. Provided design, permitting, construction support, and inspection services as Engineer of Record for construction of a stormwater management system including 50,000 gallon underground containment vault, clarifier, lift station, metering system, and repair of existing stormwater treatment system to comply with industrial stormwater discharge requirements.

Lower Water 109 and Station 1060 Drainage Channel Stabilization*, Confidential Client, Confidential Location, CA*. Provided complete engineering, permitting, and construction support services as Engineer or Record for stabilization of an eroded ephemeral stream (Lower Water 109) and another eroded natural drainage channel (Station 1060), located at a former aerospace facility. Both stream and channel were stabilized using engineered natural treatment design techniques.

Project tasks included preparation of construction documents, permitting, and construction support.

***Puerco Canyon Campgrounds Infrastructure**, Mountains Recreation and Conservation Authority, Malibu, CA.* Currently providing infrastructure engineering services as Engineer of Record for development of new 10-acre campground facility and 1.2-mile fire access road at a remote location with no existing infrastructure. New infrastructure includes water supply (groundwater), treatment, and distribution system, wastewater and solid waste management, power system, and fire/site access road. Services provided include infrastructure feasibility study and detailed design of fire/site access road.

***Kenneth Hahn State Recreation Area Overflow Parking Improvement**, Los Angeles County Department of Parks & Recreation, Los Angeles, CA.* Currently providing complete engineering, permitting, and construction support services as Engineer of Record for development of an overflow parking lot at Kenneth State Recreation Area. Proposed development includes 105 parking spaces, retaining walls, and stormwater facilities including infiltration basins.

***University Park Rain Gardens Neighborhood Rain Gardens**, City of Los Angeles, Los Angeles, CA.* Provided design, public outreach, and construction (integrated project delivery) services as construction manager for retrofit of 35 rain gardens along existing parkways to improve urban runoff quality and to assist the City in development of standard rain garden plans.

***Playa Del Rey Storage Field Drainage Improvements**, Southern California Gas Company, Los Angeles, CA.* Provided engineering services to map existing drainage facilities, evaluate existing drainage and bluff failure issues, conduct hydrology study for future planned developments, and develop construction documents for drainage improvements at a 40-acre natural gas storage and transmission facility.

***Hansen Dam Wetlands Restoration**, City of Los Angeles, Los Angeles, CA.* Provided complete engineering, permitting, and construction support services as project engineer for development of a regional stormwater treatment for a 150-acre watershed contributing to riparian wetlands at Hansen Lake. Project tasks included preliminary design report, drainage analysis, and preparation of construction documents for construction of vegetated infiltration basins and swales, landscaping, and parking lot modifications.

***Santa Anita Park NPDES Compliance**, Los Angeles Turf Club, Arcadia CA.* Provided regulatory support and engineering services as project engineer to develop a stormwater management plan for 135 acres of horse stables, race tracks, and parking lots within Santa Anita Park. Regulatory services include preparation and filing of individual NPDES permit renewal application, which included special provisions for CAFO (Concentrated Animal Feeding Operation) areas.

Engineering services included preliminary design of series of complex BMPs to detain, treat, and reuse 25-year 24-hour stormwater runoff from CAFO areas. Engineering services also included development and evaluation of several design concept alternatives, hydrology and hydraulics modeling, and preparation of water quality management plan and construction documents including stormwater BMPs, grading and drainage improvements, and utility relocations.

Los Angeles Aqueduct UV Filtration Plant and Los Angeles Reservoir UV Disinfection Plant, *Los Angeles Department of Water and Power, Los Angeles, CA*. Provided construction support services for construction of 650 MGD UV treatment facility at LA Aqueduct, which includes installation of pipelines up to 144 inches in diameter, 48-inch diameter medium pressure UV reactor trains, utility station and electrical building, inlet and outlet channels, weir gates, and 15,000 square feet metal building, at LA Aqueduct. Also provided design management, project coordination, and engineering services as assistant design manager for design of 600 MGD UV treatment facility at LA Reservoir, which includes pipelines and valves up to 144 inches in diameter, 48-inch diameter UV reactor trains, utility station and electrical buildings, and 30,000 square feet metal building, at LA Reservoir.

SYED A. REHAN, P.E.

remediation engineering
stormwater management

EDUCATION

M.Sc., Environmental Science and Technology, UNESCO-IHE, Delft, Netherlands, 2000
B.Sc., Civil Engineering, Aligarh Muslim University, Aligarh, India, 1995

REGISTRATIONS AND CERTIFICATIONS

Professional Engineer (P.E.), California, Number C67805
Board Certified Environmental Engineer (BCEE), Number 16-20004

CAREER SUMMARY

Mr. Rehan is a senior practitioner in environmental engineering and a Principal at Geosyntec's San Francisco Bay Area branch office in Oakland, California. He has more than 19 years of experience and specializes in developing engineering solutions and regulatory compliance strategies for environmentally impaired sites impacted by the presence of chlorinated solvents, heavy metals, hydrocarbons, and petroleum products in soil, groundwater, and indoor air.

Mr. Rehan is experienced with United States Environmental Protection Agency (USEPA) and California Environmental Protection Agency (Cal-EPA) regulations, such as Resource Conservation and Recovery Act (RCRA), Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Voluntary Clean-up Program, Prospective Purchaser Policy, and California Land Reuse and Revitalization Act. He has developed trust and established working relationships with several regulators at the local, state, and federal regulatory agencies, such as Department of Toxic Substances Control (DTSC), Regional State Water Quality Control Resources, local Water Districts, County Environmental Control agencies, and USEPA Region 9.

Mr. Rehan has evaluated and provided detailed design of structural BMPs such as multi-media filtration systems; biofiltration swales; infiltration and detention basins; and porous and impermeable pavements.

Environmental Remediation Engineering

Soil/Groundwater Treatment Systems, BP, *Alameda, Santa Clara, San Francisco, San Mateo and Sacramento Counties, California.* Mr. Rehan served as the engineering manager for 29

various types of treatment systems located in the Bay Area and Sacramento Counties. His responsibilities included overseeing system O&M, system evaluation for efficient treatment and system shut down, technical staff supervision, agency negotiation, and reporting.

Storm Water Management and Treatment

Storm Water Management and Treatment, Redwood Empire Inc., *Cloverdale, California.* Mr. Rehan developed and implemented action plans in accordance with the Consent Decree for the chemicals that exceeded USEPA Benchmark Values and Water Quality Standards. The action plan included: a Pollution Source Assessment Work Plan, a new BMP Work Plan, and a BMP Effectiveness Study Work Plan. He was responsible for the design of stormwater treatment system activities included determining site hydrology, storm water catch basin and sub-basin, improving existing storm water conveyance system, hydrodynamic filtration unit and infiltration basin, and preparation of the design and construction drawings.

Landfill Storm Water BMPs, CALCO, *Colma, California.* Mr. Rehan served as project manager for the development of the stormwater BMPs for the active landfill. The scope of work included updating a Storm Water Pollution Prevention Plan (SWPPP); evaluation and selection of best available structural BMPs; design of a modified multi-media filtration system and biofiltration swale at two locations to address impacted storm water, and preparation of the process; and civil and structural design drawings and specifications for the selected structural BMPs.

Metal Recycling Facility BMPs, Standard Iron Company, *Oakland, California.* Mr. Rehan was the project manager and selected BMPs for the client's facility. The scope of work included updating the SWPPP, evaluating the existing stormwater treatment plant, conducting an evaluation and field investigation for feasibility of an infiltration pond at the facility, and providing recommendations for reducing run-off from the facility. In addition, he conducted detailed hydraulic and civil design of infiltration basin yield and prepared civil drawings.

PROFESSIONAL EXPERIENCE

Geosyntec Consultants, Oakland, California, 2011 – Present
AMEC Geomatrix, Inc., Oakland, California, 2005 – 2011
URS Corporation, Oakland, California, 2002 – 2005
TEC Accutite, South San Francisco, California, 2000 – 2002
IRAMconsult Pvt. Ltd., New Delhi, India, 1995 – 1998

Geosyntec consultants

FABRIZIO SETTEPANI, P.E., G.E.

geotechnical engineering/foundation design
wetlands and waterway reconstruction
landfill re-use

EDUCATION

M.S., Civil Engineering, University of Michigan, Ann Arbor, 1990
M.S., Construction Engineering and Management, University of Michigan, Ann Arbor, 1989
B.S., Civil Engineering, University of Michigan, Ann Arbor, 1988
Continuing Education Seminars on Liquefaction, San Francisco State University, 1991 and 1997

REGISTRATIONS AND CERTIFICATIONS

Civil Engineer (P.E.), California, Number C51836
Geotechnical Engineer (G.E.), California, Number GE2472

CAREER SUMMARY

Mr. Settepani has more than 25 years of experience providing design recommendations for open and closed solid waste disposal facilities. Mr. Settepani provides geotechnical and civil engineering design services for various clients and facilities in California, Oregon, Washington, Hawaii, Arizona, and foreign countries (Venezuela, Russia, and Kazakhstan). His responsibilities have included leadership of geotechnical field investigations; analysis and evaluation of field and laboratory data; performance of engineering design analyses; preparation of design drawings, specifications, and engineering reports; and preparation of engineers' cost estimates and contract documents.

Property and Landfill Re-use/Brownfields/Geotechnical Engineering

Home Depot Store*, Colma, California.* For this urban property undergoing Brownfields redevelopment project, Mr. Settepani provided deep foundation design for construction of a retail facility and parking lot located over a closed landfill. He assigned engineering tests, performed engineering calculations (consolidation, settlement, and bearing capacity), and prepared reports to evaluate and recommend foundation design methodologies.

IKEA Store, *Emeryville, California.* For this urban property undergoing Brownfields redevelopment project, Mr. Settepani provided deep foundation design for a retail store built

over a contaminated site. He assigned engineering tests, performed engineering calculations (consolidation, settlement, and bearing capacity), and prepared design reports for foundation recommendations. He also provided construction quality assurance, including the Construction Quality Assurance (CQA) Manual, construction drawings, and technical specifications.

City of Sunnyvale Landfill, *Sunnyvale, California.* Mr. Settepani was the project manager for a feasibility report for establishing a community animal farm and alternative recreational landfill uses at the closed Sunnyvale Landfill. The work included evaluation of four options (animal farm, sports fields, bike skills park, and park enhancements) from a planning and cost analyses perspective when conceptual designs were not available and attendance of public meetings with City Council, Park Commission, City Engineers, and the public.

Wetlands and Waterway Reconstruction

Corinda Los Trancos Creek, *San Mateo County, California*. Mr. Settepani designed the restoration and mitigation of erosion along approximately 1 mile of the Corinda Los Trancos Creek, near the Ox Mountain Landfill. The project involved field investigations, design, and preparation of plans and specifications.

Colma Creek, *South San Francisco, California.* Mr. Settepani managed the reconstruction of approximately 1,000 feet of the southern bank of Colma Creek along the San Bruno/South San Francisco Water Treatment Plant. The project involved field investigations, design, and preparation of plans and specifications.

Bair Island Wetlands, *near Redwood City, South San Francisco Bay, California.* Bair Island Wetlands is the largest remaining wetland in the South San Francisco Bay. Mr. Settepani evaluated the proposed construction sequencing so that mud waves and slope instability would not result due to earthmoving operations over soft soils.

Mud Slough Levee Repair, *San Francisco Bay, California.* Mr. Settepani managed the design and construction of levee repairs near Mud Slough. The project involved field investigations, design, and preparation of plans and specifications on behalf of Waste Management's Tri-Cities Landfill on property controlled by Union Pacific Railroad and the Don Edwards San Francisco Bay National Wildlife Refuge.

PROFESSIONAL EXPERIENCE

Geosyntec Consultants, Oakland, California, 1998 – Present
EMCON, Inc., San Jose, California, 1990 – 1998

Geosyntec consultants

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

integrated water resources
watershed management and water quality planning
hydraulic and water quality design
erosion, scour, sediment transport evaluations

EDUCATION

MS, Civil Engineering, University of California, Berkeley, CA 1991
BS, 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 25 years of experience in planning, permitting, engineering, design, hydraulics, hydrology, stormwater management, and integrated water resources. His projects have been recognized by the American Society of Civil Engineers (ASCE), Water Environment Federation (WEF), California Stormwater Quality Association (CASQA), American Public Works Association (APWA), League of California Cities, and California Water Environment Association (CWEA). Mr. Susilo recently served on the WEF Stormwater Steering Committee, co-chairing the subcommittee for Technical Excellence.

Watershed Management and Water Quality

City of Los Angeles Public Right of Way LID (PROWL) and Green Stormwater Infrastructure Ordinance and Handbook Support, *Los Angeles, CA.* Project Manager for multi-department effort to conform with 2015 City Council green streets/green infrastructure action, ordinance, and LID for public streets Handbook. Effort included strategic implementation optimization methodologies to maximize benefits and optimize implementation opportunities.

Stormwater Capture Master Plan, *LADWP, Los Angeles, California.* Project Director for the LADWP Stormwater Capture Master Plan. Plan objectives are to characterize the potential of stormwater that can be realistically and reliably captured to augment the City's water supply

portfolio, looking at existing and proposed programs, projects, policies, and ordinances to identify actions and general planning.

City of Los Angeles Metals and Bacteria TMDL Implementation Plans, *Los Angeles, CA.* Geosyntec Project Director (as subconsultant) responsible for TMDL Implementation Plans for Ballona Creek Metals (Copper, Lead, Zinc, Selenium) and Bacteria. Also participated in BMP prioritization development for Los Angeles River.

County-Wide Structural BMP Prioritization Methodology and Structural BMP Priorization and Analysis Tool (SBPAT), *Los Angeles County, CA.* Project Manager for the development of a prioritization study for structural Best Management Practices, focusing on optimizing water quality benefits and pollutant removals for Heal the Bay, the City and County of Los Angeles. Pollutant families evaluated include metals, nutrients (nitrates), bacteria (fecal coliform), trash, and TSS. Project included pilot implementation in the Ballona Watershed, and county-wide presentations.

Los Angeles Countywide Study Evaluating the Feasibility of Potential Regional Funding to Address the County and Cities' Urban Runoff Pollution Improvement Needs (Green Solutions Project), *Los Angeles County, CA.* Geosyntec Project Manager for Los Angeles County-wide study evaluating the feasibility of potential regional funding to address the County and Cities' urban runoff pollution improvement needs. Project scope encompasses all areas within the County of Los Angeles Flood Control District and involved the identification of high priority areas and conceptual approaches for stormwater quality improvement with multi-benefit objectives, specifically park development.

Malibu Creek TMDL Implementation Plan and Regional Watershed Implementation Plan (RWIP), *Ventura County, CA.* Technical consultant for TMDL Implementation Plan (all program elements), which addresses integrated water resources, site-specific source controls and structural BMPs. Task manager for hydrology and structural BMP tasks, multiple stakeholder presentations and outreach. Primary focus for TMDL implementation planning was bacteria, while RWIP focused on bacteria and nutrients (nitrogen and phosphorous).

Alameda County Urban Runoff Clean Water Program, *Alameda County, CA.* Assistant Project Manager for program that addressed the hydrology of Alameda County and the impacts of pollutant loads. Task Leader for the Management of Storm Water Facilities, inventoried facilities and operations; developed, implemented, and evaluated potential structural or operational modifications to reduce pollutants to the San Francisco Bay.

Caltrans Litter Management Pilot Project, *Statewide, CA.* Project (Task Order) Manager responsible for the initial phases of the project, including baseline data collection, project scoping,

and conceptual study design, and coordination with the Technical Advisory Group.

Related Technical and Financial Studies

Green Stormwater Infrastructure Jobs Study, *Los Angeles, CA.* Project Director supporting Los Angeles Alliance for a New Economy (LAANE), spearheading a jobs study to lay the groundwork for future funding of stormwater and green infrastructure projects. Identified representative green infrastructure projects and working with city and county leaders to obtain necessary information (e.g., project cost, labor hours and type, union involvement, and other job-related information) for all stages of the project including design, construction, optimization, and O&M) Study purpose is to make reasonable prediction of the job increase potential of future green infrastructure projects.

Design of Hydraulic and Water Quality Structures

City of Los Angeles Argo Stormwater BMP Project, *Los Angeles, CA.* Technical Project Manager (as subconsultant to AECOM) for the Stormwater BMP Project (Proposition O) involving stormwater diversion, treatment and infiltration for Bacteria TMDL compliance, supporting Industrial General Permit compliance and LID conformance for flows discharging to Santa Monica Bay. Project included concept design validation, pre-design, geotechnical investigations, survey, environmental clearance, permitting, final design, and construction-phase support.

Los Angeles StreetEnds (Oros Street and Steelhead Park) Water Quality BMP Project, *Los Angeles, CA.* Project Director of Geosyntec team responsible for engineering analysis, design, survey, geotechnical investigation and CEQA clearance for an innovative street retrofit and park conversion project that involves structural water quality BMPs that are directly tributary to the Los Angeles River. Participants included North East Trees and the City of Los Angeles, Bureau of Street Services, CD 13.

Broad Beach Road Biofilter*, Malibu, CA.* Project Director for development of Green Street LID Project. Project requirements included compliance with ASBS exceptions, Malibu Local Coastal Program, Bacteria TMDLs, and litigation settlement agreement. Constraints included geotechnical stability (Caltrans slopes for PCH), high groundwater, and proximate local OWTS systems.

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

Geosyntec consultants

GORDON THRUPP, Ph.D.

groundwater resources evaluation and modeling
remedial design

EDUCATION

Ph.D., Earth Sciences, University of California, Santa Cruz, 1987
B.S., Geology, Stanford University, Stanford, California, 1980

REGISTRATIONS AND CERTIFICATIONS

Certified Hydrogeologist, California, Number 541
Registered Geologist, California, Number 5849

CAREER SUMMARY

Dr. Thrupp has over 25 years of experience as a consulting hydrogeologist. His technical expertise includes quantitative analysis of flow of groundwater and soil-gas. He has designed wells and hydraulic testing programs, designed and evaluated testing to estimate hydraulic and pneumatic properties, and developed groundwater flow models as tools for assessing water resources and engineering design alternatives. Dr. Thrupp's general areas of expertise and experience include investigation of the potential for contaminant migration and evaluation of remediation and mitigation alternatives; optimization and assessment of groundwater and soil vapor extraction (SVE) wells; evaluation of contaminant fate and transport to estimate stable plume configuration; and evaluation of natural attenuation. He has also directed studies to locate and design municipal supply wells and sewage and groundwater infiltration basins.

Site Characterization and Remedial Design

Characterization and Remediation of Soil and Groundwater, Confidential Client, *Port of Richmond, California.* Dr. Thrupp managed multiple phases of a field investigation to characterize impacts to soil and groundwater near former storage facilities for fuel, chemicals, and food-oils near the bay margin at Point San Pablo in Contra Costa County, California. He determined that leakage from a water supply pipe mobilized fuel oil in the subsurface that resulted in seepage of oil at the bay margin. Dr. Thrupp utilized hydrocarbon chromatograms to distinguish between different sources of impacts to soil. He developed and implemented remedial measures that included introduction of calcium peroxide in 50 2-foot-diameter borings to provide an oxygen source to shallow groundwater and enhance bioremediation of linear alkylbenzenes; a remedial

excavation to remove residual separate phase petroleum hydrocarbons, and SVE to remove benzene and other volatile hydrocarbons from soil.

Model Refinement/Recalibration, and Capture Zone Evaluation, Confidential Client, *Santa Clara County, California.* Dr. Thrupp refined and re-calibrated a multi-layer MODFLOW groundwater flow model originally developed by another consultant to evaluate re-injection options and extent of groundwater capture provided by multiple extraction wells at three adjacent sites with VOC impacts to groundwater. After calibration to pumping test data, the refined model was used as a tool to evaluate system effectiveness and remedial engineering alternatives. For each problem, hydraulic properties were assigned to ensure that the model provided a conservative result. This refined/recalibrated model was instrumental in determining that capture of shallow groundwater was maintained despite a regional rise in elevation of the water table aquifer.

Groundwater Modeling and Design of Injection Wells, Confidential Client, *Morgan Hill, California.* Dr. Thrupp developed and used a groundwater model to evaluate feasibility of remediation alternatives for containment of perchlorate impacts to groundwater near Morgan Hill, Santa Clara Valley, California. He designed, installed, and tested three injection wells that were used to re-inject treated groundwater into a shallow alluvial aquifer. The injection capacity of wells continued to exceed project needs for several years.

Groundwater Modeling and Remediation Design, Confidential Client, *Mountain View, California.* Dr. Thrupp designed an aquifer-testing program, updated a groundwater model, and evaluated the extent of containment provided by pumping from off-site extraction wells at a superfund site in Mountain View. Assessment of vertical hydraulic connection (leakage) between aquifer zones was a key component. An updated and re-calibrated model was used to evaluate source control containment within the B2 aquifer provided by pumping within the B1 aquifer above. To address concerns about hydraulic containment, model parameters were assigned to provide a conservative estimate of hydraulic containment.

Remedial Engineering Alternatives, Confidential Client, *Mission Bay, San Francisco, California.* Dr. Thrupp conducted groundwater modeling for an evaluation of a site with petroleum hydrocarbon contamination near the San Francisco Bay. The work included sampling for stable isotope analysis, interpreting the isotopic and other geochemical data, analyzing slug tests and tidal influence data, and developing groundwater flow and fate and transport models. The stable isotope data were used to assess biodegradation activity. The MODFLOW and MT3D models served as tools to evaluate natural attenuation and remedial design alternatives.

Geosyntec consultants

CLAIRE F. WILDMAN, Ph.D., P.E.

environmental engineering
geochemistry
remediation

EDUCATION

Ph.D., Environmental Science and Engineering, California Institute of Technology, Pasadena, 2011
M.S., Environmental Science and Engineering, California Institute of Technology, Pasadena, 2007
B.S., Civil Engineering, magna cum laude, Washington University, St. Louis, Missouri, 2005

REGISTRATIONS AND CERTIFICATIONS

Civil Engineer (P.E.), California, Number C83691

CAREER SUMMARY

Dr. Wildman is a professional engineer, working within the Environmental Science and Engineering Group in Geosyntec's San Francisco Bay Area branch office in Oakland, California. She applies her background in environmental engineering, water chemistry, and geochemistry to remediation and litigation technical support. Dr. Wildman has experience in developing remediation strategies, work plans, feasibility studies, treatability studies, pilot studies, cost estimates, and remedial design and specification documents under the oversight of various regulatory agencies. Her primary technical focus is on metals, and she has worked on multiple projects to design and operate bioreactors for metals removal.

Site Investigation, Characterization, and Remediation

Remedy Design, Pacific Gas and Electric Company, *Hinkley, California.* Dr. Wildman prepared technical design and engineering drawings for an ex situ fixed-bed bioreactor pilot test to remove hexavalent chromium from groundwater. The two-stage bioreactor design also accommodates removal of naturally occurring iron and manganese from local soil and groundwater, which have interfered with an existing in situ treatment process. Dr. Wildman was the task manager for procurement, installation of equipment, and performance monitoring. Results of the pilot test confirm that the two-stage bioreactor successfully achieved total and hexavalent chromium removal to below the laboratory reporting limits (removal efficiency consistently exceeding 95%) during summer and winter temperature extremes.

Omega Chemical Corporation Superfund Site, *Whittier, California.* Dr. Wildman manages a site with a large groundwater plume of chlorinated solvents in southern California. Geosyntec supports a large potentially responsible parties (PRP) group in tasks such as groundwater monitoring and investigation of deeper groundwater in the leading edge of the plume. Geosyntec also leads current groundwater modeling efforts, with a focus on optimal placement of extraction wells for a future pump and treat remedy with potential end use as potable water supply.

Callahan Mine Superfund Site Composting Bioreactor Design, *Brooksville, Maine.* Geosyntec supported CES, Inc. and the Maine Department of Environmental Protection in the remedial design for a passive sulfate-reducing, composting bioreactor to treat copper, lead, and zinc, among other metals, from a dewatered tailings pile. Dr. Wildman performed value engineering and geochemical analysis to move project from 90% design drawings to final construction drawings, procurement, and installation. The design did not require powered sensors, meters, or valves, and had to accommodate an accelerated construction schedule as well as performance of microbial processes during winter operations. Monitoring of the bioreactor performance is ongoing.

Groundwater Extraction and Treatment System (GETS) Operations and Maintenance (O&M), Confidential Client, *California.* Dr. Wildman was the task manager for a 30-gpm groundwater extraction and treatment system, featuring a fixed-bed bioreactor for removal of VOCs, selenium, chromium, and perchlorate. Dr. Wildman prepared a project-wide approach to preemptive monitoring of extraction wells for biofouling.

Technical Expert Review

Hunter's Point Naval Shipyard, Confidential Client, *San Francisco, California.* Geosyntec supports its client in reviewing the transition of site parcels from United States Navy management to closure of environmental issues and transfer to a developer. Dr. Wildman provides as-needed technical support to review remedial investigation and remedy implementation documents produced by the Navy and its consultants, particularly related to ongoing issues with metals such as mercury.

PROFESSIONAL EXPERIENCE

Geosyntec Consultants, Oakland, California, 2012 – Present
Swiss Federal Institute of Aquatic Science and Technology (EAWAG), Duebendorf, Switzerland, Visiting Scientist, 2007 – 2011
California Institute of Technology, Pasadena, California, Graduate Research Assistant, 2005 – 2011

Barbara Beard

DIRECTOR OF ENVIRONMENTAL ANALYSIS

AREAS OF EXPERTISE

Environmental Analysis / Project Management / CEQA NEPA / Land Use Compatibility / Public Infrastructure

QUALIFICATIONS

Barbara Beard is an MIG Senior Project Manager and Senior Analyst with over 20 years of experience in preparing documentation pursuant to NEPA and CEQA. As a Senior Project Manager she has directed the preparation of CEQA documents on a wide variety of projects including those for landfills and waste processing facilities, pipelines, linear recreational trails, concrete and asphalt recycling facilities, schools, a new county jail and other municipal infrastructure projects in San Mateo and Santa Clara Counties. She is skilled in working with clients and lead agencies to determine the scope and content of environmental analysis documents and guiding complex and controversial projects through the CEQA process. She provides technical expertise on a variety of work products, including constraints analyses, Initial Studies, EAs and EIRs/EISs.

Ms. Beard brings numerous years of project management experience to CEQA projects. She assists clients and CEQA lead agencies in successfully navigating the sometimes complex and nuanced CEQA process. She works with clients to identify potential problem issues and works with the project team to devise an acceptable solution to CEQA issues.

In her capacity as the Director of Environmental Analysis at MIG, Ms. Beard directs staff in the technical analysis and preparation of environmental documents, provides quality control over environmental impact analysis work products, assigns staff to projects based on the required expertise needed for the project and maintains contact with the client, project engineers and the lead agency.

EDUCATION

- Bachelor of Science, Natural Resource Policy and Management, University of Michigan, Ann Arbor, 1982

RELEVANT EXPERIENCE

- Coyote Point Recreation Area Eastern Promenade Rejuvenation Project, CEQA Compliance, *San Mateo County, California*
- California Water Tank and Pump Station EIR, *Redwood City, California*
- Sky Londa Fire Station Replacement Project IS/MND, *San Mateo County, California*
- Big Wave Wellness Center and Office Park EIR Addendum, Princeton, *San Mateo County, California*
- Edgewood Canyon Subdivision Supplemental EIR, *San Mateo County, California*
- Carlmont High School Usher Field Lights IS/MND, *Belmont, California*
- Transportation and Maintenance Facility IS/MND, *Redwood City, California*
- Maple Street Replacement Facility IS/MND, San Mateo County Sheriff's Office, *Redwood City, California*
- ACE Charter School IS/MND, *San Jose, California*
- Naples Beach Sewer Project IS/MND, Coastal Development Permit, Implementation of MMRP, *Half Moon Bay, California*
- North Coast County Water District Water Transmission Pipeline IS/MND, *Pacifica, California*
- Stevens Creek Corridor Master Plan Phase 1 and 2 IS/MNDs, *Cupertino, California*
- Andreini Concrete and Asphalt Recycling Facility Project IS/MND, *Half Moon Bay, California*
- 2350 Mission College Boulevard Office Retail Project, *Santa Clara, California*
- Guadalupe Landfill Materials Recovery Facility IS/MND, *San Jose, California*
- San Francisco Bay Trail Constraints Analysis and Detailed IS, *San Jose, California*

BkF 100+ YEARS
ENGINEERS . SURVEYORS . PLANNERS

RESUME

BRIAN SCOTT, PE

PRINCIPAL IN CHARGE/QA/QC MANAGER

As a Principal and Vice President, Brian is responsible for all phases of project development including master planning, schematic design, final design, subdivision and parcel mapping, contract document preparation, cost estimation, contract administration during construction and surveying. He provides coordination among clients, other professional consultants, and review agencies throughout the development process. In a supervisory role, he has been responsible for design and administration of utility, roadway, site improvement, and land surveying projects serving public works, educational, medical, residential, commercial, industrial, research, and recreational facilities throughout the Bay Area.

SELECT PROJECT EXPERIENCE

Menlo Atherton High School, Atherton

- Prepared civil improvement plans to install about 500 L.F. of new water line
- To save trees, concrete paving and walkways, the water line was installed by trenchless construction using fusible PVC pipe
- 500 L.F. of 6-inch, fusible PVC pipe installed using trenchless construction
- Careful planning was needed to select the routes to avoid large trees, canopy footings and other site improvements
- Coordinated with the specialty contractor who installed the water line, to develop plans and specifications tailored to trenchless water line installation

Manzanita Street Water Main Replacement, Redwood City

- Associate/Project Manager for the civil improvement plans to replace the existing 4-inch water main with approximately 250 LF of new 12-inch water main
- Existing residential water services were reconnected to the water main in a timely fashion to minimize the interruption of water service
- Design of a three-story, self-storage facility located on a 1.3-acre site
- Design of new on-site storm drainage, sanitary sewer and domestic water
- Prepared hydraulic calculations for the new water main to demonstrate to the City of Redwood City that the required fire flows would be met with the new water main improvements

Delta Coves Diablo Water District Off-Site Water Line & Breach Line, Oakley

- Principal in Charge of 6,450 LF of 18-inch DIP to be installed along Bethel Island Road
- Design of 1,000 LF of 20-inch welded steel water pipe on Bethel Island Bridge
- Survey and Design of 1,100 LF of 12" Fused PVC in 16" fused PVC and 30" steel casing under the Delta Coves breach by HDD
- Design required special considerations for the anticipated ground settlement and seismic forces
- Worked with the structural and geotechnical engineers to design a cost efficient, reliable solution

EDUCATION

B.S. Civil Engineering, University of California, Davis

REGISTRATION

Professional Civil Engineer CA No. 61034

TOTAL YEARS EXPERIENCE

20 years, 20 with firm

ADDITIONAL EXPERIENCE

- Mountain View Storm Drain Trash Capture Project
- Dublin Storm Drain Trash Capture Project
- Candlestick Point, Treasure Island, and Yerba Buena Island Development Projects
- Town of Hillsborough Storm Water Master Plan
- Moss Beach, Intertie Pipeline System Reinforcement Phase 3

BKF 100+ YEARS
ENGINEERS . SURVEYORS . PLANNERS

RESUME

SRAVAN PALADUGU, PE, CFM, QSP / QSD

PROJECT MANAGER

EDUCATION

M.S., Civil Engineering, University of Utah, Salt Lake City

B.S., Civil Engineering, Osmania University, India

REGISTRATION

Professional Civil Engineer, CA No. 74343

Certified Floodplain Manager

QSP / QSD

TOTAL YEARS EXPERIENCE

15 years, 4 with firm

ADDITIONAL EXPERIENCE

- Central Valley Floodplain Evaluation & Delineation Program
- Pleasant Grove Creek Watershed Calibration
- Atherton Drainage Criteria
- Belmont Storm Master Plan
- Seaport Levee Improvements
- Mission Bay Pump Station
- I-880 Drainage Improvements
- Candlestick/Hunters Point Drainage Master Plan
- Pier 70 Drainage
- Golden State Warriors Stadium
- Treasure Island Redevelopment
- Gilead Foster City Master Plan
- SR-4 Wagon Trail Realignment Project

Mr. Paladugu has over 15 years of water resources planning and design experience with an emphasis on hydrology, hydraulic, and water quality. He is experienced in conducting technical analysis and in preparing plans, specifications and estimates for several drainage, flood control and storm water management facilities. He has extensive experience overseeing construction aspects of the projects. He has prepared several master plan and highway drainage studies, and, worked on regional floodplain mapping projects. He has extensive experience usingprograms such as XPSWMM, FLO-2D, HEC-GeoRAS, HEC-RAS, ArcGIS and other commonly used hydrology and hydraulic tools.

SELECT PROJECT EXPERIENCE

Marsh Road Drainage Channel, Atherton

- Project includes replace 1,800 linear feet of open trapezoidal channel made of battered stone and motor walls with cast-in-place U-shape concrete channel
- Provided base mapping, topographic surveys, biological assessment and environmental permitting (JARPA)
- Prepared extensive traffic control and detour plans to re-route ADT of 25,000 vehicles through surrounding neighborhoods
- Assisted with public outreach efforts to address traffic concerns and prepared traffic calming measures.
- Coordinated with other jurisdictions for traffic calming measures

Mountain View Trash Capture, Mountain View

- BKF was responsible for the design of a hydrodynamic separator placed within a residential area
- BKF determined the final placement of the device based upon the results of a utility analysis, as gas lines, sewer lines and overhead wires were in the immediate vicinity
- Work included 25-foot deep pit with shoring
- BKF coordinated with the trash device provider and the City of Mountain View to ensure a design that properly conveyed the expected hydrologic flows and caused the least disruption to the local neighborhood

Hillsborough Storm Drain Improvements, Hillsborough

- Prepared 30-year Stormwater Master Plan and CIP budget
- Provided field investigation & visual identification of existing system deficiencies
- Developed inventory of deficient systems and prioritization criteria to identify CIP projects
- Provided design for projects worth $1.2M in construction costs
- Prepared PS&E for rehabilitation/replacement of eleven (11) storm drain and culvert repair projects using trenchless and cut-open type installations
- Conducted alternative analyses for various trenchless methods
- Provided services during construction

Bayfront Canal, Redwood City

- Project Engineer responsible for developing improvement alternatives to alleviate regional flooding and meet various other goals
- Developed hydrology using HEC-HMS for the 9.5 square mile tributary drainage area to the Bayfront Canal
- Used XPSWMM to model network of storm drain systems, pumps, culverts, weirs, Canal and tide gate
- Balanced various goals such as reducing flooding, creating wetlands habitat, and minimizing environmental impacts

BKF 100+ YEARS
ENGINEERS . SURVEYORS . PLANNERS

RESUME

JEFF FIDELIN, PE (JEAN FRANCOIS)

PRE-TREATMENT AND PUMP STATION DESIGN

Engineering professional with 15 years of work experience in the municipal and private water industry, both in California and in Europe. Skills include strategic planning, civil/mechanical design, and construction managements.

EDUCATION

M.S. Fluid Mechanics, ENSTA, Paris, France

REGISTRATION

Professional Civil Engineer
CA No. 82280

TOTAL YEARS EXPERIENCE

15 years, 1 with firm

ADDITIONAL EXPERIENCE

- Treasure Island Redevelopment
- Brooklyn Basin Development Project
- Central and Wolfe Campus Storm Drain Pump Station Project
- Town of Hillsborough Storm Water Master Plan

SELECT PROJECT EXPERIENCE

San Jose Trash Capture

- Design of multiple large trash capture devices installed on existing 66" to 78" diameter storm drains
- Preparation of plans, specifications, and cost estimates
- Coordination with San Jose Water Company and PG&E for existing utility relocation
- Expedite design to comply with the state-mandated deadline for project completion

Dublin Trash Capture

Responsible for the design of three (3) project sites within the City of Dublin. Two residential sites received hydrodynamic separators, installed in accordance with the City of Dublin requirements, while the third site, adjacent to the 680 on-ramp, warranted a vegetated swale, installed in accordance with Caltrans Standards. Analyzed the hydrology of the catchment areas to each treatment device, the localized areas for any aberrant conditions and properly sized the units and swale for the design storm conditions.

Treasure Island/Yerba Buena Island Redevelopment, San Francisco

- Design Engineer for the new 5th Street sewer pump station. Station includes:
  - Two 10-HP, Flygt submersible pumps
  - One exterior Motor Control Center (MCC)
- Design engineer for the new Cityside Park storm drain pump station. Station includes
  - Two 12-HP, Flygt submersible pumps
  - One exterior Motor Control Center

Candlestick Point Redevelopment Project, San Francisco

- Design Engineer for the new Wedge Park sewer pump station. Station includes:
  - Two 10-HP, Flygt submersible pumps in a trench type wet well
  - One new building housing the pumps' MCC
  - One exterior 80-kW back-up power generator
  - One odor control unit

Portola Pump Station Rehabilitation, El Granada

- Project engineer for the feasibility study of the raw sewage pump station upgrade. Project consisted in replacing existing extended shaft centrifugal pumps with three 60-HP dry-pit submersible pumps and one 25-HP chopper pump.

BkF 100+ YEARS
ENGINEERS . SURVEYORS . PLANNERS

RESUME

YOUSRA TILDEN, PE

POTABLE WATER, RECYCLED WATER & SEWER SYSTEMS

Ms. Tilden has over 30 years of project management experience including water and recycled water, and sewer pipeline projects, rate studies, and water and sewer system master plans. She has been responsible for design and construction administration, and the preparation of plans, specifications and cost estimates. She has an in-depth background in permitting and grant process, preparation of contract documents, and the ability to coordinate many agencies and consultants.

SELECT PROJECT EXPERIENCE

City of Palo Alto/Mountain View Moffet Field Recycled Water Pipeline Project

- Managed a team of engineers, draftsmen and sub-consultants to prepare contract documents, including design of nine miles of pipeline ranging in size from six to 30 inches (C303 CCP, HDPE, C151 DIP, C200 Welded Steel, and C900 PVC)
- Obtained all environmental and construction permits.
- Assisted in obtaining the grant and loan funds for $20 million
- Conducted value-engineering session

Santa Clara Valley Water District, Central Pipeline Relocation at Upper Penitencia Creek, San Jose

- Project Manager for the Relocation of Central Pipeline at the Upper Penitencia Bypass.
- This project included the design of the relocation of 1200-feet of 60-inch C303 CCP with C200 welded steel pipeline under the Upper Penitencia bypass.
- Tasks included coordination of the shutdown of the Central pipeline with other projects and the shutdown of the South Bay Aqueduct, and coordination with the flood control project.
- Acquired the required permits and environmental clearance, and preparation of plans and specifications.

City of San Jose, South Bay Water Recycling Program, Transmission Pipeline Project, San Jose

- Project Engineer for City of San Jose's South Bay Water Recycling Transmission project as the project engineer
- The project comprises of 15,000-feet of 60-inch C200 welded steel pipeline from the main pump station across Highway 237, and along the Coyote Creek overflow channel
- Duties included preparation of plans and specifications, pipe design, applying for permits, coordination with a multitude of agencies and other consultants, supervising the technicians and other engineers' work, preparation of cost estimates and quantities, reviewing submittals, responding to contractor's request for information, reviewing change orders, preparation of the as-builts and O&M manuals, and reviewing labor, consultant fees, and construction invoices to the City of San Jose

EDUCATION

M.S., Civil/Water Resources Engineering Stanford University

B.S., Civil Engineering & Engineering Mechanics, California State University Fullerton

REGISTRATION

Professional Civil Engineer CA No. 48742

AFFILIATIONS

Member of the ASCE and APWA

TOTAL YEARS EXPERIENCE

30 years, 4 with firm

ADDITIONAL EXPERIENCE

- Delta Coves Diablo Water District Off-Site Water Line
- Santa Clara Valley Water District, Relocation of Milpitas Pipeline
- South San Francisco, Sanitary Sewer Rehab of Various Sewer Mains
- Northrop Grumman Utilities Replacement
- City of Milpitas, Water System Master Plan
- Hillsborough 30-Year Storm Water Master and Implementation

BkF 100+ YEARS
ENGINEERS . SURVEYORS . PLANNERS

RESUME

JASON MANSFIELD, PE, PMP, LEED AP

TRAFFIC

Jason has provided design support and project management for a variety of projects including levee design, site development, utility design and relocations, roadway design, signing and striping design, and traffic signal design. He has facilitated coordination between community members, committees and commissions, city, county, and state agencies. Frequently involved in evaluating alternatives for a local agency, Jason is able to identify and summarize key factors that assist the local agency to select a preferred alternative. On all his project, large or small, Jason strives to deliver value to the project team by exploring innovative design alternatives, understanding the value of stakeholder and community involvement, and respecting all aspects of the environment.

EDUCATION

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

REGISTRATION

Professional Civil Engineer CA No. 59567

AFFILIATIONS

San Carlos Transportation & Circulation Commission, Past Chair Past Commissioner

San Carlos General Plan update Advisory Committee

Peninsula Association of Contractors and Engineers (PACE), Past President

Past-President of City Talk Toastmasters

San Carlos Chamber, Member of the Board

APWA - Silicon Valley, Member of the Board

TOTAL YEARS EXPERIENCE

21 years total; Since 1998 with firm

SELECT PROJECT EXPERIENCE

Foster City Blvd & Chess Drive Median Modifications & Road Improvements, Foster City

- Roadway Improvements for Foster City Blvd and Chess Drive
- Intersection and traffic signal modifications
- Lengthen Northbound left-turn lane on Foster City Blvd at Chess Drive
- Lengthening the westbound left turn lane on Chess Drive at Foster City Blvd
- Modifications to the bridge structure for the median and sidewalk

Triton Widening and Various Roadways, Foster City

- Eleven capacity improvement projects to mitigate future cumulative development project traffic impacts
- Route 92 ramp widening with PEER document for Caltrans review
- Traffic signal operations and timing analysis
- Multiple stakeholder coordination and accounting
- Right of Way acquisition for widened roadway
- Pavement design over Bay Mud

Alpine Road / Highway 280 Interchange, San Mateo County

- 800 LF re-paving of Alpine Road within the State right-of-way
- 200 LF re-paving of County right-of-way
- Restriping at Alpine Road and I-280 to improve bicycle safety
- Schedule was critical for grant funding
- Innovative green pavement treatments
- Buffered bike lanes for heavily traveled route
- Caltrans Encroachment Permit
- Obtained consensus between County of San Mateo, Silicon Valley Bicycle Coalition (SVBC), and Caltrans

Highway 92 PSR, PR, San Mateo County

- Preliminary civil design for curve corrections and widening project
- Much of the design was based on traffic flow and construction staging
- Alternatives to minimize right of way impacts

BkF 100+ YEARS
ENGINEERS . SURVEYORS . PLANNERS

RESUME

MICHAEL LIU, PE

PUMP STATION

Mr. Liu has been involved in final design and construction coordination of water distribution systems, pipelines, pump stations, storage reservoirs, tank design, storm drainage and sewer systems, public works, and assessment projects. His experience also includes flood insurance studies, intake and discharge structure systems, and construction, flood control project master plan and designs.

SELECT PROJECT EXPERIENCE

Mission Bay Storm Water Pump Station #3, San Francisco

- Processed and discharged stormwater runoff from over 41 acres of Mission Bay
- Engineering design for a major underground pump station located in Mission Bay
- Pump station consists of seven submersible pumps and discharges to San Francisco
- Bay via China Basin Channel
- Included shoreline protection along China Basin Channel, storm drain improvement systems and trash capture facilities

Mission Bay Storm Water Pump Station #5, San Francisco

- Processed and discharged stormwater runoff from over 55 acres of Mission Bay
- Engineering design for major underground pump station located in Mission Bay next to San Francisco Bay
- Pump station consists of nine submersible pumps and discharge structural discharges to San Francisco Bay including shoreline protection, pedestrian path along San Francisco Bay, storm drain improvement systems, and trash capture facilities
- Low Impact Design

Fifth Avenue Pump Station, Redwood City

- Feasibility study
- Identified 100-year flood for pump station outflow to optimize number of pumps
- needed
- Two 240 HP and two 170 HP submersible pumps and one 14 HP low-flow submersible pump
- Underground pump station with trash removal facilities chosen for final design
- 500 kw diesel emergency generator with auto transfer switch and electrical control panel located within concrete block building

Stanford University Stadium Storm Drain and Sanitary Sewer Pump Stations Study, Design And Construction, Stanford

- Development of pump station alternatives for complete rehabilitation of existing stadium which was lowered by 30 feet, completed engineering study, bid documents and construction in record time of 42 months
- Storm drain pump station with four major submersible pumps, and two force main
- Sanitary Sewer pump station with two submersible pumps to meet peak demand and force main to existing collect system

Bayport Storm Pump Station, Alameda

- Feasibility study and identification of 100-year flood
- Final pump station design and construction support services
- 30-foot wet well, four 70 HP submersible pumps and one 25 HP low-flow submersible pump
- Automatic mechanical trash rack cleaning device
- 275 kw diesel generator with auto transfer switch and motor control center
- Housed in concrete block building with tile roof to match local housing development
- 1,200 l.f. of 48" force main to San Francisco Bay through Alameda Harbor

EDUCATION

M.S., Civil Engineering, University of Utah, Salt Lake

B.S., Hydraulic Engineering, National Cheng-Kung University, Taiwan R.O.C.

REGISTRATION

Professional Civil Engineer, CA No. 18870

TOTAL YEARS EXPERIENCE

53 years, 28 with firm

ADDITIONAL EXPERIENCE

- Levin Park Pump Station Upgrade, Santa Clara County Parks
- Santa Clara Pump Station
- Stanford Reservoir and Pump Station
- Pleasanton Pumping Station S-6 Evaluation & Pre-Design Study
- Belmont Dokoven Pump Station
- Daly City South Hill Pump Station and Water Main Project

BkF 100+ YEARS
ENGINEERS . SURVEYORS . PLANNERS

RESUME

ALEX CALDER, PLS

SURVEYOR

Mr. Calder has experience in all facets of surveying, including boundary, topographic, ALTA and control surveys; construction staking, tentative maps, final subdivision maps, assessment district maps, parcel maps, and horizontal control plans for on-site improvements.

SELECT PROJECT EXPERIENCE

San Francisco Public Utility Commission Projects (SFPUC), Alameda, Santa Clara, and San Mateo Counties

- Project Surveyor for this 100+ mile on-call Surveying Services contract
- High Accuracy Control Surveys, boundary and right of way surveys
- Prepare Legal Descriptions and Plats to facilitate fee takes and easements
- Prepare corresponding Appraisal Maps
- Encroachment surveys, topographic and utility
- Extensive Title Research and easement review

Mountain View Force Trunk Main Manhole Construction, Mountain View

- Project Surveyor for the installation of manholes on existing 42-inch sewer force main near landfill
- Proposed locations for the over 20-feet deep mandholes, determined the best method of installation and prepared the contract documents for the construction of the manholes
- Coordination with the golfing activities and customers of Michael's restaurant were incorporated in the project construction staging and sequencing

Woodside Priory School Sewer Pipe and Pump Station Relocation, Portola Valley

- Conducted the field survey to verify sewer invert elevations
- Estimated the earthwork required to remove the berm

Parkmerced Mixed-Used Redevelopment, San Francisco

- Lead Project Manager for this 110+ Acre Development Project
- Resolved boundary survey and Pre-Construction Record of Survey
- High Accuracy Control survey on new CCSF 2013 High Precision Network
- Working closely with SFBSM with respect to San Francisco's new 2015 Subdivision Regulations, Vacation / Dedication processes, and other San Francisco agencies with respect to Conditions of Approval mapping requirements
- Tentative Maps / Final Maps
- Design level Topographic surveys

Treasure Island Redevelopment, San Francisco

Redevelopment of former 450-acre Naval Base includes 120 acres of residential and commercial development and 330 acres of open space and park land

- GPS, Conventional and Differential Land Survey
- Control Networks to facilitate:
- Design of Island Flood Protection
- Hydrographic Surveys
- Utility Surveys
- Topographic and Planimetric Surveys
- Cross-sectional Surveys
- Boundary Surveys

EDUCATION

B.S., Geomatics Engineering, California State University, Fresno

REGISTRATION

Professional Land Surveyor, CA No. 8863

TOTAL YEARS EXPERIENCE

10 years, 6 with firm

ADDITIONAL EXPERIENCE

- Parkmerced Mixed-Used Redevelopment, San Francisco
- Salesforce Tower, San Francisco
- Bay View On-Site and Off-Site utility location, Moffett Field
- San Mateo County On-Call Services, Devil's Slide Section of the California Coastal Trail, San Mateo

Callander Associates
Landscape Architecture
40 YEARS

A. Mark Slichter, PLA, ASLA
Principal

For over 30 years, Mark has been providing public agencies with an impressive array of design, project management and agency processing skills critical to the successful implementation of projects throughout Northern California. His agency processing expertise is complemented by strong technical knowledge, enhanced by extensive field review experience and his technical expertise in ADA and SWPPP compliance has proven extremely valuable to a growing list of public facility managers. Within the heavily regulated Bay Area, Mark has utilized these skills to successfully process and obtain approvals, design alternatives sensitive to existing environmental conditions, and complete numerous multiple site bid packages for numerous public facilities.

Background

Education
Bachelor of Science in Landscape Architecture, U.C. Davis, 1983

Caltrans Plan and Specifications Training – San Francisco

Water Conservation (AB 325) Training - Association of Bay Area Governments Training Session

Registrations
Landscape Architect, CA #4692

Organizations
Member, American Society of Landscape Architects

30+ Years of Experience

Similar Projects
Holbrook-Palmer Field, Atherton
Las Lomitas School Flood Abatement, Atherton
Las Lomitas Detention Basin, Atherton
Hacienda Avenue, Campbell
California Tank and Pump CEQA, Redwood City
Camino Pablo Field Renovation, Moraga
Campbell Union High School District Stadium and Track Facilities, San Jose
Creekside Sports Park, Los Gatos
Prospect School Field, Saratoga
Kelly Park, Menlo Park

Callander Associates
Landscape Architecture
40 YEARS

Nate Ritchie
Project Manager

Nate has been part of Callander Associates off and on since 2002. During that time he took some time to explore his other passions including organic farming and computer science but has since returned to Landscape Architecture with renewed focus. Nate possesses a unique combination of deep environmental awareness and computer skills both of which can be seen in his project work, including his efforts in realizing a new entrance for Castle Rock State Park and his leadership in establishing office standards for CAD and project coordination. Our clients have appreciated his attention to detail and coordination skills which have allowed him to successfully manage larger multi-disciplinary design teams.

Background
Education

Bachelor of Landscape Architecture,
Ohio State University

Project Management Training,
Professional Services Management
Journal

15+ Years of Experience

Similar Projects
Brentwood Library, Brentwood
Castle Rock State Park, Los Gatos
SSF Linear Park CD's, South San Francisco
Centennial Way Phases 2/3, South San Francisco
Ravenswood Bay Trail, East Palo Alto
Roseville Bridges, Roseville
Pleasanton Civic Center, Pleasanton

Castle Rock State Park