



Ms. Pam Mitchell
Administrative Staff Assistant
City of Rancho Palos Verdes Public Works Department
30940 Hawthorne Boulevard
Rancho Palos Verdes, CA 90275
(310) 544-5252

RECEIVED
City of Rancho Palos Verdes, June 3rd, 2015

JUN 15 2015

PUBLIC WORKS DEPARTMENT

RE: Terramar Engineering SOQ for City of Rancho Palos Verdes On-Call List of Civil Engineering Services

Dear Ms. Pam Mitchell,

Terramar Engineering is very pleased for this opportunity to present our Statement of Qualifications (SOQ) to continue to provide On-Call Civil Engineering Consultant Services to the City of Rancho Palos Verdes. We believe our experience and qualified staff will provide the City of Rancho Palos Verdes with the best possible service. Our Team of experts at Terramar Engineering has the skill and expertise to meet all of the City's requests. As you will see in the firm experience provided in this proposal, Terramar has successfully completed several projects within the City and surrounding County and we are sufficiently qualified to meet the City's needs.

When we founded Terramar Engineering we selected Southern California as our Headquarters because we love it here – this is where we live, it's where we've chosen to raise our families, and most importantly, we want our work to benefit our local Community. Terramar is uniquely qualified to serve the City as our design operations are all performed within the Carlsbad office and all of our Ownership and Employees live in Southern California. We have proven expertise at designing infrastructure and preparing technical reports in compliance with the current requirements of the City, County and State. Terramar is pleased to submit our Statement of Qualifications (SOQ) to the City of Rancho Palos Verdes for On-Call Civil Engineering Consulting Services as described in the City's Request for Qualifications (RFQ) issued May 28th, 2015.

Terramar has a firm understanding of the local development environment, and City requirements. Terramar has years of experience providing similar services to several Clients within Los Angeles County and throughout Southern California, and we are well positioned to provide the necessary services and expertise to the City. We are skilled at overcoming the challenges involved with designing City infrastructure on a tight timetable and have a proven history of providing clear communication in order to maintain project schedules and budgets. Terramar would be honored to work for the City of Rancho Palos Verdes, and we are pleased to submit our SOQ for these services.

I want to sincerely thank you for considering Terramar to join the City's Team as an On-Call Civil Engineering Consultant, we truly appreciate the opportunity. Please do not hesitate to contact me should you have any questions or concerns regarding our SOQ.

Respectfully Submitted,

Raab Rydeen, PE
Principal Engineer



Table of Contents

- Introduction Letter
- I. Firm Contact Information
- II. Firm Experience and References
- III. Project Team
- IV. Project Approach
- V. Rate Schedule

Appendix

- Resumes



I: Firm Contact

The City of Rancho Palos Verdes has requested qualifications for on-call professional consultant services related Civil Engineering. Terramar Engineering has put a Team together to provide the City with a complimentary skillset to address civil projects at the City. Please review the following project experience, and attached resumes, as we believe that our Team is sufficiently qualified to complete the upcoming projects to the City's satisfaction.

The Consultant information requested:

Lead Contact:

- Legal Name: Terramar Consulting Engineers, Inc.
- Address: 2888 Loker Avenue East, Suite 303
Carlsbad, CA 92010
- Phone/Fax.: (760) 603-1900/(760) 603-1909
- Fed Tax ID No.: 27-3563133
- Contact Person: Raab Rydeen, PE
Principal Engineer
Raab@terrarenq.com

II: Firm Experience

Road Way Design

Project Name: Street Improvements on Poway Road

Location: Poway, CA

Project Manager: Raab Rydeen, PE

Project Engineer: Kyle Flaming, PE

Client Project Manager: Tony Elias

Client Phone: (760) 207-0401

City Project Manager: Steven Strapac

City Phone: (858) 668-4653

Terramar Engineering provided street improvement design from Midland Road to Westmark Way on Poway Road in Poway, California. There were a number of challenges associated with this project. Storm Drain Connections, LID Improvements for the parkway, ADA Ramps at each intersection, Signal intersects, new medians and additional turn lanes, new signal design, and utility relocations. Terramar Engineering provided engineering solutions that satisfactorily resolved each of these items. A complicated part of this design was a new storm drain connection in the street. Conflicts with gas and sewer lines required Terramar to thread the storm drain pipe between these two lines. Terramar Engineering looked at elliptical pipe and box solutions. These were deemed very expensive and Terramar was able to design a standard solution that saved the Client significantly in terms of materials and construction costs.

Terramar Engineering in conjunction with Trames Solution designed a new signal at Poway Road and Gate Drive. The new signal included an intersect with the signals at Community Road and Midland Road along Poway Road. In conjunction with the new signal at Gate, Terramar designed new timing and an additional turn lane at the Midland and Poway Road signal. Terramar and Trames also designed the new striping for Poway Road, new ADA ramps for each corner of Gate Road and Poway Road and additional driveways along Poway Road. The most difficult part of the ADA ramp improvements was ensuring clearance of the signal poles. Terramar provided details showing the location of the signal poles relative to the ADA ramps,

2888 LOKER AVE EAST STE. 303 • CARLSBAD • CA • 92010 • (760) 603-1900

TerramarEngineering.com • Info@TerramarEng.com



and provided As Built documentation to show the signal and Ramps were designed and installed per the latest code requirements. Terramar Engineering coordinated with SDG&E, and AT&T to relocate several utility vaults and boxes along the property frontage to accommodate the new parkway design. Terramar was required to incorporate Low Impact (LID) into the new parkway. Terramar Engineering designed a reverse flow sidewalk and bioretention swales/self-retaining areas into the parkway landscaping.

Project Name: Street Improvements at Foothill Boulevard and Benson Avenue

Location: Upland, CA

Project Manager: Raab Rydeen, PE

Project Engineer: Kyle Flaming, PE

Client Project Manager: Brad Urie

Client Phone: (619) 990-4310

Terramar Engineering provided civil consultant services to upgrade the existing intersection of Foothill Boulevard and Benson Avenue in Upland, CA. The scope of work included a survey of the existing intersection and streets, a drainage study analyzing the 100 yr, 24 hr flood events, and potholing potential utility conflicts, designing a new signal, new medians, traffic control plans and an additional thru lane and right turn lane into the adjacent shopping center. New ADA ramps and inlets were required as well as the undergrounding of dry utilities including CATV, phone and electric. This project had a number of unique issues to be addressed. The project had to be processed through Caltrans and the City of Upland. Terramar Engineering had to revise the projects cross slope as the pavement fell to the gutter the cross-slope exceeded 5% on the street, with 5% slope from the driveways, Terramar Engineering had to design a vertical curve at each driveway to prevent cars bottoming out. Another issue that needed to be addressed was the slope of the existing gutter was less than 0.01%. Terramar Engineering had to meet this existing slope within the street while addressing the street cross slope.

Project Name: Street Improvements at Mission Avenue and Quince Street

Location: Escondido, CA

Project Manager: Raab Rydeen, PE

Project Engineer: Kyle Flaming, PE

Client Project Manager: Homi Namdari

Client Phone: (760) 839-4651

Terramar Engineering provided civil design consulting services to upgrade the existing intersection of Mission Avenue and Quince Street. The scope of work included a survey of the existing intersection and streets, a drainage study analyzing the 100 yr, 24 hr flood events, and potholing potential utility conflicts, designing a new signal, new medians, traffic control plans and an additional thru lane and right turn lane into the adjacent shopping center. New ADA ramps and inlets were required as well as the undergrounding of dry utilities including CATV, phone and electric. This project had a number of unique issues to be addressed. The existing area drained to the street with no available storm drain to discharge to Escondido Creek. A new storm drain had to be sized, designed and constructed to convey the 100 yr 24 hr storm event to the nearby Escondido Creek. New ADA ramps installed and coordination with NCTD on a new bus stop in the vicinity.

Parkway Design

Project Name: Hawthorne Boulevard Pedestrian Improvements.

Location: Rancho Palos Verdes



*Project Manager: Raab Rydeen, PE
Project Engineer: Kyle Flaming, PE
Client Project Manager: Nicole Jules
Client Phone: (310) 544-5275*

Terramar Engineering is currently designing the Hawthorne Boulevard Pedestrian Linkage project in the City of Rancho Palos Verdes. This project provides pedestrian access in between 11 bus stops from Rancho Palos Verdes Road on the west to Crest Boulevard on the east, with over 2.5 miles of parkway design. There were a number of challenges on this project that Terramar was able to overcome through careful coordination with the City and other sub consultants. The first and most difficult problem for the project was that the street was over 10% slope exceeding ADA guidelines. There were also signal poles to be relocated, retaining walls to be designed, utility coordination, and the landscaping had to be redesigned to accommodate the state's water restrictions. Terramar Engineering coordinated with all the utility providers to move, relocate, or raise the infrastructure to the appropriate grade the utilities along this stretch of Hawthorne Boulevard Terramar prepared the notices to the utility companies and called the stations and utility within the plans for these services relocation. Terramar worked with Trames Solutions to minimize the impacts to the existing signals in conflict with the proposed ADA ramps. Where necessary, Trames Solutions provided the design for the relocation of the signals.

Due to the current drought throughout California, the State has issued requirements to reduce water usage, and the City asked for a redesign of the parkway to minimize landscaping, and make the landscaping more drought tolerant. Terramar worked with the City and the Landscape Architect to make this design work. There is significant cross slope in the parkway along this Road. Terramar Engineering designed retaining walls to create the space in the right-of-way for the parkway design. The final issue on this project was that the City has entered into a consent decree with the land Surveyors Board. All Survey Monuments have to be found prior to construction and if not found or disturbed during construction then they must be set and a corner monument must be recorded with the County. Terramar engineering is assisting in this effort. Along 2.5 miles of road there are over 50 monuments to be identified.

Site Design

Project Name: Lowe's of Carlsbad

Location: Southwest Corner of Palomar Airport Road and El Camino Real

Project Manager: Raab Rydeen, PE

Project Engineer: Kyle Flaming, PE

Client Contact: Tony Elias

Client Phone: (760) 207-0401

City Contact(s) Van Lynch, Steve Bobbett

Terramar Engineering was part of the team that developed the Palomar Commons shopping center at the intersection of Palomar Airport Road and El Camino Real in Carlsbad, CA. Terramar worked directly for Lowe's as their site designer and project developer. There were numerous challenges facing this development. It was on top of an old landfill, the property belongs to the Palomar Airport, and had to comply with all the necessary FAA regulations. There were several unique site challenges as well. There are two major storm water discharges entering the site that merge into one channel and flow through the site. The site was severely lower than the surrounding streets and had to be raised 40 feet at the rear of the property. Terramar Engineering worked with the developers consultants to overcome each of these challenges. While



too numerous to discuss all the challenges facing the project, we will highlight a few these and Terramar's solutions to these issues.

The first challenge that Terramar addressed was the Floor Area Ratio (FAR) requirements. The FAR, is the measurement that the County Airports utilize to determine the amount of buildable area is allowed within the applicable safety zones. The site being directly adjacent to the airport encroached into the defined safety zones. Terramar was able to use the Airport Land Use Committee's newly published requirements to successfully develop the site plan for the shopping center. The next challenge that Terramar addressed for the site was the Low Impact Development (LID) requirements. Terramar designed Lowe's building to drain to an underground detention/infiltration basin, and graded the site to send the front of the store to bioretention basins at the front of the parking lot. This dual design was successful in treating the storm water quality and addressing flood control concerns

Project Name: Parker Residence

Location: 3215 Maezel Lane

Terramar Project Manager: Raab Rydeen, PE

Property Owner: Jobe Parker

Client Phone: (760) 533-6191

City Contact(s) Chris Garcia, David Rick

In 2013 Jobe Parker approached Terramar Engineering to assist him in developing his approximately 1 acre property at the end of Maezel lane. The Land consisted of 43,017 SF. Jobe's intent was to divide the parcel, creating two lots, constructing a separate residence on the newly created parcel. Terramar Engineering processed the Tentative Parcel Map, the Final map, Grading Plans and Hydrology Report for this project.

There were several challenges in processing the Tentative Parcel Map and Parcel Map for this project; setback requirements, easement locations, zoning and density requirements. Terramar was able to provide design solutions to each of these items. To address the setback issue Terramar worked with the Owner and Architect to modify the dimensions of the building to meet the newly created parcel dimensions. There were also number of existing easements on the property that interfered with the development of the site, Terramar worked with the City and the project Attorney to track down and nullify the easements that interfered with the development of the property. Each of the requirements for zoning, site density, building coverage, provided unique challenges to the development of the property. Terramar was able to provide solutions for each of these items. The grading and drainage of the site had their own challenges. All of Maezel Lane and part of Basswood Dr. drained through the site creating a natural channel draining through the property. Terramar had to show that the site could be developed and maintain the current drainage patterns while saving several existing site features. Terramar engineering utilized the natural terrain, retaining walls, and existing trees onsite to provide a creative solution to meet these site challenges.

Storm Water Engineering

Storm Water Engineering Services for the County of San Diego -- East Mesa Detention Facility Expansion (April, 2013 – June, 2014) Working as a sub-consultant under GHD, Terramar designed post-construction Low Impact Development (LID) Best Management Practices (BMPs), including eleven (11) Bioretention Basins to accommodate Water Quality, Hydromodification Management and Flood Control concerns in accordance with the San Diego County Standard Urban Storm Water Mitigation Plan (SUSMP) and San Diego County Hydrology Manual. In addition to the LID BMP design, Terramar prepared a Storm Water Management Plan (SWMP), a Hydromodification Management Plan (HMP) and a



Hydrologic/Hydraulic Drainage Report for the project and assisted the Client with consulting services regarding BMP selection and site layout options. Additionally, Terramar worked closely with the Design Team and the County to optimize the design of the Bioretention Basins using a combination of SWMM and Excel modeling procedures and specialized outlet structures to significantly reduce the BMPs required volumes. This was a design-build project and the LID BMP optimization did not commence until after construction had already begun. Terramar completed the analysis and amended the SWMP, HMP and Drainage Reports under an extremely tight deadline. The BMP optimization resulted in a significant savings to the County in terms of materials and construction costs without causing any delays in construction as the volume of gravel required was reduced from 13,364 cu-ft down to 2,754 cu-ft, and the volume of amended soils required were reduced from 12,527 cu-ft down to 8,261 cu-ft.

- Client: County of San Diego, (as a sub-consultant under GHD)
- Contact: David Salud, San Diego County Project Manager – (858) 694-8906, and Tim Monroe, GHD Project Engineer – (858) 244-0440
- Project Manager: Jason Evans, PE
- Project Hydrologist: Luis Parra PhD, PE

Stormwater Engineering Services for the City of San Diego – Plan Checking/QA/QC for the Storm Water BMP Retrofit Project at Breen Park (December, 2014 – March, 2014) Working as a sub-consultant under Orion Construction Corporation Terramar reviewed the preliminary design calculations for retrofitting the existing Breen Park with LID BMPs for water quality only (i.e. no Hydromodification). Terramar optimized/redesigned three (3) Bioretention Basins in order to reduce the required area and volumes without compromising compliance with San Diego SUSMP requirements. Terramar worked with the City, Contractor and Design Engineer to coordinate the optimization into the Construction Documents and technical reports. The BMP optimization resulted in a significant savings to the City in terms of materials and construction costs without causing any delays in construction as the total area required was reduced by 63%, the volume of amended soils required was reduced by 70%, and the volume of gravel required was reduced by 75%.

- Client: City of San Diego (as a sub-consultant under Orion Construction Corporation)
- Contact: Jim Nabong, City of San Diego Associate Engineer – (858) 541-4327, and Matt Dorman, Orion Construction Corporation Design Manager (760) 597-9660
- Project Manager: Jason Evans, PE
- Project Hydrologist: Phillip Patague, PE

Civil Engineering Services for the San Diego Unified Port District -- Marine Parkway Sand Filter (January, 2010 – March, 2012) Working as a sub-consultant under Adams Engineering Terramar designed post-construction Low Impact Development (LID) Best Management Practices (BMPs), and prepared a BMP Design Technical Report, a Hydrological/Hydraulic Drainage Report and two Storm Water Pollution Prevention Plans (SWPPPs) for the 50-acre former BF Goodrich South Campus in Chula Vista, California. Project involved remediation of contaminated soils, abandonment of the existing storm drain system and the design of permanent stormwater BMPs (i.e. sand filters and constructed wetlands). Additionally, Terramar prepared Improvement Plans for three acres of constructed wetlands habitat, which served as mitigation for the loss of wetland plant species related to the soils remediation. In addition to the Grading and Demolition Plans, Terramar designed the LID BMPs and prepared the Hydrologic Study, the BMP Technical Report, two independent sets of Erosion Control Plans and SWPPPs in accordance with the District's SUSMP and State's Construction General Permit requirements. Additionally Terramar assisted the District with project bidding and construction management.

- Client: San Diego Unified Port District, (as a sub-consultant under Adams Engineering)



- Contact: Ernie Medina, San Diego Unified Port District Capital Project Manager – (619) 686-7229, and Rob Adams, Adams Engineering Principal Engineer – (817) 328-3212
- Stormwater Engineer: Jason Evans, PE

Stormwater Engineering Services for the City of Menifee – Water Quality, Hydromodification and Drainage Report Plan Checking (January, 2014 – May, 2014) Working as a sub-consultant under SDH & Associates Terramar reviewed and provided plan check comments on Water Quality Management Plans (WQMPs), Hydromodification Management Plans (HMPs) and Hydrologic/Hydraulic Drainage Reports prepared by other Engineers throughout the City of Menifee. This work included review of the hydrologic/hydraulic calculations used to size LID/hydromodification features and storm drain infrastructure. Plan checks were performed to verify that the LID BMP design and technical reports had been prepared in accordance with NPDES Santa Ana River Watershed MS4 Permit (Order No. R8-2010-0033)

- Client: City of Menifee, (as a sub-consultant under SDH & Associates)
- Contact: Amad Qattan, City of Menifee Interim Assistant City Engineer – (951) 677-7914, and Steve Sommers, SDH & Associates President – (951) 683-3691
- Project Manager: Jason Evans, PE

Stormwater Engineering Services for the City of La Habra Heights – Water Quality/Drainage Report Plan Checking (May, 2013 – March, 2013) Working as a sub-consultant under SDH & Associates Terramar reviewed and provided plan check comments on site-specific Standard Urban Stormwater Mitigation Plans (SUSMPs) and Hydrologic/Hydraulic Drainage Reports prepared by other Engineers as part of development projects throughout the City of La Habra Heights. This work included review of the hydrologic/hydraulic calculations used to size LID BMPs, flood control features and storm drain infrastructure. Plan checks were performed to verify that the LID BMP design and technical reports had been prepared in accordance with NPDES Los Angeles County MS4 Permit (Order No. 01-182) and subsequent amendments.

- Client: City of La Habra Heights, (as a sub-consultant under SDH & Associates)
- Contact: Amad Qattan, City of La Habra Heights City Engineer – (951) 677-7914, and Steve Sommers, SDH & Associates President – (951) 683-3691
- Project Manager: Jason Evans, PE

Civil Engineering Services for KB Home -- Hidden Hills Park -- Terramar is currently performing civil engineering services for the 5.25 acre Hidden Hills Park located within the City of Menifee. This is ongoing Design-Build Project for KB Home. Terramar Engineering is in charge of the design and preparation of the Construction Documents. Hidden Hills Park includes soccer fields, tennis courts, basketball courts, playground equipment, a parking lot and numerous picnic tables and shade structures. Terramar designed the grading and drainage to convey stormwater runoff away from the playground equipment, and play areas (fields and courts) safety surfaces, and low laying areas within the park. The design also included ADA coordination throughout the park along with ADA accessibility to each surrounding street, as well as water and sewer utilities, trash enclosures and site lighting throughout the park.

- Client: KB Home
- Contact: Rudy Provoost, Senior Forward Planner/Project Manager -- (951) 691-5241
- Project Manager: Raab Rydeen, PE,
- Project Engineer: Kyle Flaming, PE
- Project Hydrologist: Phillip Patague, PE

As-Needed Civil Engineering Services for the City of Rancho Palos Verdes (2011 – Present) Terramar has been preparing construction documents, and assisting the City of Rancho Palos Verdes with RFPs/RFQs,



bidding, permitting, and construction management on a variety roadway, sidewalk and parking lot improvement projects, including the following:

- **Palos Verdes Drive South Landslide Emergency Stabilization Project** – Terramar coordinated closely with the City, Water Board, General Contractor, Seeding Specialist, and the neighboring residents design a stabilization solution amenable to all parties. Additionally Terramar prepared a Site Stabilization Plan and obtained an Erosivity Waiver for the project.
- **Hawthorne Boulevard Refuge Lane Project** – Terramar worked closely with the City to design a safe lane in the median for cars turning left onto Hawthorne Boulevard out of City Hall. This project required extensive coordination to incorporate a Caltrans certified crash cushion for public safety. During construction, Project Engineer, Kyle Flaming made crucial field observations and revised the crash cushion design and extended the refuge lane --the revisions were approved by the City/Caltrans and incorporated during construction.
- **Hawthorne Boulevard Sidewalk Improvement Project** – Terramar is currently working with the City to design approximately five miles of sidewalk improvements to link 11 bus stops along Hawthorne Boulevard, (work includes ADA ramp replacement, grading and landscape design, wet and dry utility coordination, signal modification, retaining wall design, SWPPP, traffic control plans and assisting the City with bidding and construction management).
 - Client: City of Rancho Palos Verdes
 - Contact: Nicole Jules, City Engineer -- (310) 377-0360
 - Project Manager: Raab Rydeen, PE,
 - Project Engineer: Kyle Flaming
 - Stormwater Engineer: Jason Evans, PE

Stormwater Engineering Services for Grossmont Union High School District (Oct. 2013—Present). Working as a sub-consultant under Southern California Soils and Testing, Terramar currently provides stormwater consulting services to the Grossmont Union High School District for the construction of new Physical Education Buildings, Basketball Courts and Field Areas at El Cajon Valley High School and at El Capitan High School. Terramar Principal Engineer Jason Evans is the Project Manager for both of these projects where he continues to serve as the Qualified Storm Water Pollution Prevention Plan Practitioner/Developer (QSP/QSD) for the District. Mr. Evans also serves as a Data Submitter for the District on the State Water Resources Control Boards (SWRCB) Storm Water Multiple Application and Report Tracking System (SMARTS) database. Mr. Evans trained Contractors and Construction Mangers hired by the District to perform site-specific inspections in accordance with the project SWPPP and State regulations. Mr. Evans also performs routine Site Inspections/SWPPP Audits to ensure that the projects maintain compliance with the California State Construction General Permit (SWRCB Order No. 2009-0009-DWQ). Additionally, Terramar has prepared SWPPP Amendments and Annual Reports for both projects. At El Capitan High School, Terramar was able to re-evaluate the projects threat to water quality by analyzing the onsite slopes and local watershed and ultimately reduce the Risk Level down from Risk Level 2 to Risk Level 1 (even while increasing the area of disturbance to incorporate the Contractors staging area). This reduction Risk Level was accurate in terms of water quality and provided the District with significant financial savings as Risk Level 1 sites do not require Rain Event Action Plans (REAPs) or sampling/monitoring for pH and turbidity. Terramar continues to work closely with District staff as well as the Contractors and Construction Mangers hired by the District to ensure that improvements at El Cajon Valley and El Capitan High Schools are completed on time and on budget with as little disturbance as possible to the students, parents, teachers staff, neighbors surrounding environment and downstream water quality of these two very active campuses.



- Client: Grossmont Union High School District (GUHSD), (as a sub-consultant under Southern California Soils and Testing – SCS&T)
- Contact: Dena Johnson, GUHSD Project Manager – (619) 644-8150, and Scott Goldman, SCS&T VP of Business Development – (619) 944-0303
- Project Manager: Jason Evans, PE

Stormwater Engineering Services for Cajon Valley Union School District, (May, 2013—January, 2014). Contracting directly with the Cajon Valley Union School District, Terramar was originally asked to prepare SWPPPs and provide QSP/QSD services at for their 2013 Summer Paving Program at four separate campuses. Terramar coordinated closely with the District, the City of El Cajon and the State Water Resources Control Board (SWRCB) to evaluate each project and determine its suitability for coverage under the Construction General Permit (SWRCB Order No. 2009-0009-DWQ). By looking closely at each project Terramar was able to determine that 3 of the 4 sites did not require permit coverage (because their areas of disturbance were each less than an acre). For the one site that did require permit coverage (EJE Academies), Terramar was able to successfully obtain an Erosivity Waiver from the SWRCB for the project. Through careful examination of each project, Terramar was, able to save the District the costs related to the preparation of four SWPPPs as well as the regular QSP inspections and monitoring on all four (4) of the sites. Mr. Evans served as the Project Manager QSD and Data Submitter for the Cajon Valley Union School District on the SWRCB Storm Water Multiple Applications and Tracking Systems (SMARTS) database. Mr. Evans also prepared the Notice of Intent (NOI) for the project, and designed Erosion Control Plans in accordance with the requirements of the Cajon Valley Union School District and the City of El Cajon. Each project was evaluated and suggestions made to minimize the impact of the construction to the students and staff on Campus as well as the surrounding community and environment. Services included project planning and coordination, stabilization plans, erosion and sedimentation control plans, site inspection and construction coordination, and coordination with the City, School District and Water Board.

- Client: Cajon Valley Union School District
- Contact: John Forrest, Construction Project Manager – (619) 588-3651
- Project Manager: Jason Evans, PE

As-Needed Civil Engineering Services for Lowe's Companies, Inc. – For the past five years, Terramar has been providing as-needed civil engineering services to Lowe's for projects throughout the southwest region. Services include civil design of building pads, parking lots, sidewalks, roadway improvements, traffic signals, hydrology reports, LID BMP design, SWPPP, entitlement, permitting, construction documents, construction management and project close out. Additionally Terramar performs 3rd party plan checks and site inspections for Lowe's and assists with the bidding process. Recent Lowe's projects include:

- **Lowe's of Oxnard, CA** – Terramar provided civil, grading, and utility design, SWPPP, SQUIMP, permitting and construction management services on an 120,587 sq-ft single-story Lowe's building for slab-on-grade construction with an attached 31,658 sq-ft Garden Center and the associated utility connections, drive aisles, parking, sidewalks, loading zones, landscaping and post-construction storm-water quality BMPs (including an infiltration basin and hydrodynamic separator) on an 10.58 acre property in Oxnard, CA. Construction at the Lowe's of Oxnard was completed in October, 2013.
- **Lowe's at Palomar Airport Commons (Carlsbad, CA)** – Terramar provided civil, grading, and utility design, SWPPP, SWMP, permitting and construction management services on an 122,256 sq-ft single-story Lowe's building for slab-on-grade construction with an attached 31,718 sq-ft Garden Center and the associated utility connections, drive aisles, parking, sidewalks, loading zones, landscaping and post-construction storm-water quality BMPs (including an infiltration basin



and several bio-retention facilities) on an 11.91 acre property in Carlsbad, CA. Construction at the Lowe's of Carlsbad was completed in October, 2013.

- **Lowe's of Poway, CA** --Terramar provided civil, grading, and utility design, SWPPP, WQTR, permitting and construction management services on an 111,539 sq-ft single-story Lowe's building for slab-on-grade construction with an attached 27,720 sq-ft Garden Center and the associated utility connections, drive aisles, parking, sidewalks, loading zones, landscaping and post-construction storm-water quality BMPs (including an infiltration basin and several bio-retention facilities) on an 11.61 acre property in Poway, CA. Additionally, Terramar provided engineering services to upgrade the existing intersection of Poway Road and Gate Drive. The scope of work included a survey of the existing intersection and streets. A drainage study analyzing the 100 yr, 24 hr flood events, and Potholing potential utility conflicts, designing a new signal, and an additional thru lane and right turn lane into the adjacent shopping center (Lowe's). New ADA ramps and inlets were required as well as the overlay and restriping of the existing roadway. Terramar has worked closely with the City to address the interconnect concerns and the location of the new bus stop. This project is currently under construction.
 - Client: Lowe's Companies, Inc.
 - Contact: Tony Elias, Project Manager -- (760) 539-7418
 - Project Manager: Raab Rydeen, PE,
 - Project Engineer: Kyle Flaming, PE (Carlsbad and Poway), Raab Rydeen, PE (Oxnard)
 - Stormwater Engineer: Jason Evans, PE

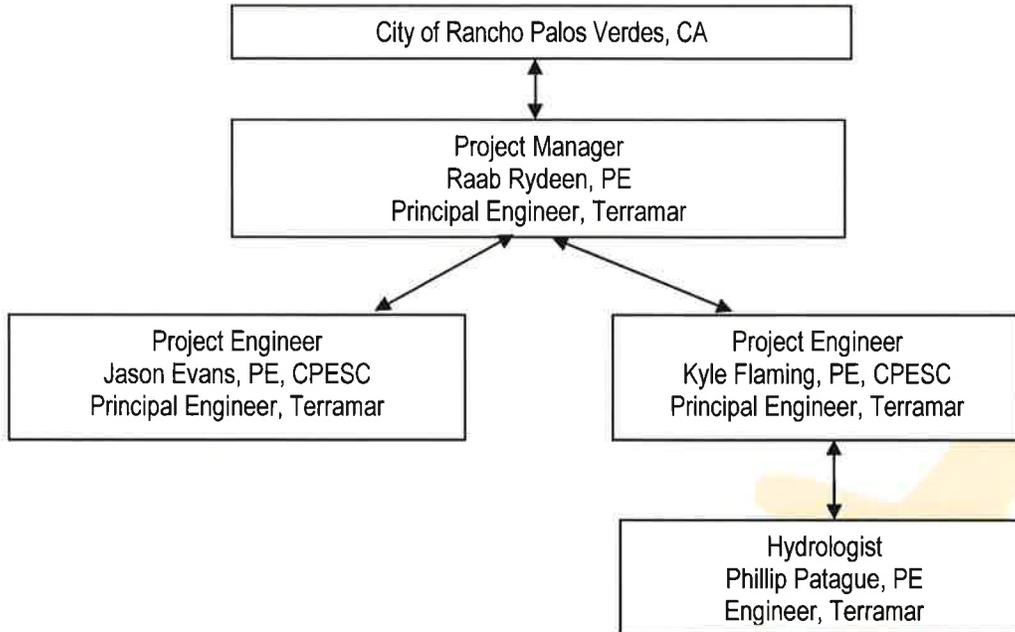
Stormwater Consulting Services for California Department of Corrections and Rehabilitation (CDCR) California State Prison, Los Angeles County – Working as a sub-consultant under Southern California Soils and Testing, Terramar provided a QSP (Jason Evans) for the Enhanced Outpatient Program, Treatment and Office Space development within the exiting Los Angeles County Prison in Lancaster, CA. Terramar reviewed the original SWPPP, amended the SWPPP, and implemented the SWPPP and Construction Site Monitoring Program. Terramar conducted or had supervision over all of the required site inspections, sampling and monitoring conducted onsite throughout the project, prepared the 2011-2012 Annual Report and the Notice of Termination, which was approved by the Water Board in October, 2012. Additionally Mr. Evans served as a Data Submitter for the CDCR on the Water Boards SMARTS database throughout the duration of the project.

- Client: California Department of Corrections and Rehabilitation (CDCR), (as a sub-consultant under Southern California Soils and Testing – SCS&T)
- Contact: Kim Stein, CDCR Construction Supervisor – (661) 729-200 ext. 7559, and Scott Goldman, SCS&T VP of Business Development – (619) 944-0303
- Project Manager: Jason Evans, PE



III. Project Team

Terramar has put together the following well qualified Team which we believe is capable of exceeding the expectations of the City of Rancho Palos Verdes with regards to On-Call Civil Engineering Services:



Resumes of key personnel listed in the Project Team Flow Chart above are included within the appendices. All projects will be directed by the City who will award each project individually to the Design Team. Project Manager and Principal Engineer Raab Rydeen will be leading the Design Team and will be the point of contact in charge of all communication between the Design Team and the City. Terramar believes that clear and consistent communication is vital to any projects success and we strive to manage the flow of information as efficiently and effectively as possible (flow arrows above point in both directions to emphasize the back and forth communication). There are two Project Engineers (Jason Evans and Kyle Flaming) that will be working directly underneath Mr. Rydeen. Both Project Engineers are experienced at designing within the City of Rancho Palos Verdes and Los Angeles County in compliance with Local and State regulations, and are licensed as Professional Engineers (PEs) in the State of California. The Team also Phillip Patague (also a California licensed PE) to assist with the designs as-needed with Hydrologic/Hydraulic Drainage Reports and storm drain design.

IV: Project Approach and QA/QC

Project Approach

Terramar plans on utilizing an approach which has proven successful on many past projects and we are confident that it will keep the projects that we do with the City of Rancho Palos Verdes ahead of schedule and under budget. As the Project Manager, Raab Rydeen will coordinate with the City early and often to make sure that permitting and stakeholder coordination efforts will be seamless. Our approach is to prepare a Permitting Work Plan in the very early stage of the project to identify all of the permits and items that require coordination with various agencies and stakeholders and map out key milestone dates relative to the overall project schedule such that each member of the Project Team knows exactly what information needs to be developed, submitted, to which agency, and when. Terramar understands that some of the permitting



efforts will be led by the City, and that some may be led by us, but regardless of who is leading the coordination, we will keep track of all activities and help navigate the overall process. We have successfully used this approach on many of our past projects, and we are confident that it will keep our project on track.

Terramar will coordinate closely with the City to determine a budget and schedule that satisfies the City's needs. Terramar is able to meet budgets and schedules by accurately assessing the scope of work required to complete the project along with the costs associated with completing the work. Terramar divides the scope of work required into tasks and then determines the personnel and hours required to complete each task, and then calculate the pricing to successfully complete each task (based on the billing rates of the professionals performing the tasks). Cost estimates for the proposed services are prepared in-house by the Project Engineer and reviewed by the QA/QC Engineer and the Project Manager to make sure that they are current, cost effectiveness and accurate for the scope of work required. The schedule must prioritize the needs of the City, but also must account for the budget and time necessary to complete the work. The Team at Terramar reviews project progress and outlines the tasks that need to be completed and allotted budget as part of our daily morning meetings to make sure that our staff is prioritizing the workload and staying on schedule and budget. Once a week the Project Manager coordinates a telephone conference with the Client to review project status and address any foreseen issues with maintaining project schedule and budget at the end of each month Terramar invoices the Client for the work performed during that month and provides a status update on the percentage of work completed. This system ensures a strict adherence to project schedule and budget.

Terramar understands the challenges related to providing On-Call Civil Engineering Consultant services in accordance with current regulations, and we have the qualified staff to satisfy the City's needs. We are also experienced with Design-Build Projects and we know how to prioritize our workload in order to be able to provide the staff and resources necessary to complete the work on time and within the budget. Terramar incorporates a buffer into the timelines that we set on our projects under design. This buffer gives our staff the ability to respond to the most pressing matters of the hour. Terramar has the staff and resources to rapidly respond to any situation, and still maintain project schedules, budgets and deadlines. It is our intention to make the City of Rancho Palos Verdes a top priority and we will respond quickly to provide the City with the staff and resources necessary to complete the projects.

Our prior experience providing On-Call Civil Engineering Services for the City has taught us that each project is unique, requiring distinct innovations to resolve complicated issues. Our Team's approach to projects is to listen to the City, our Client. Our team understands that we are not selling a service or even our expertise, but rather our ability to resolve issues and solve problems on our Clients behalf. Therefore, in our approach to developing a solution, we must first focus on understanding our Client's needs and constraints. Working closely with our Client, we collaborate to develop the approach to each project and remain flexible to shifting priorities.

The key to successfully completing a project is detailed planning and careful coordination with the City and the other agencies/stakeholders in order to identify as many conflicts as possible prior to final design and construction. The Terramar Team will remain in close communication with the City throughout the entire project. Informing the City via email and phone of all design related issues and concerns prior to incorporating these decisions into the final reports and plans. Additionally, Terramar will coordinate closely with the relevant agencies for successfully resolving any conflicts affecting the project. We understand each project is a unique entity requiring distinct innovations to solve the problems surrounding each job. Below is the typical project approach to a typical street improvement job. This approach will be modified per each project to address the individual nature of the project.



Terramar understands that there is not a one-size-fits-all approach that will work for every project and we will remain flexible and adaptable throughout the process until each project is successfully completed. We will develop a distinct approach for each project issued, to ensure that the City's concerns are addressed early and that permitting, design and construction of the proposed improvements go as smooth and seamlessly as possible. With a clear Team organization and defined project approach for managing the process, our staff is equipped with the skills needed to provide On-Call Civil Engineering Consultant services to the City of Rancho Palos Verdes.

Quality Assurance & Quality Control Procedures

Quality Assurance and Quality Control (QA/QC) starts with the Project Managers understanding of the scope of work. It is imperative that the Project Manager understands the City's objectives and the role each person plays throughout the project. In the initial scoping meeting of the project the Project Manager listen to the City and provide written meeting minutes outlining the process moving forwards and the objectives to be met. As the project progresses the project manager will consistently update the City on project progress and goals obtained.

In a perfect world everything would be correct all the time. Unfortunately in the world which we exist very few things are ever correct at any time. To minimize mistakes, errors and omissions in our final plans, estimates and reports Terramar Engineering has a multilayered review process designed to check for mistakes throughout the project.

Initial responsibility for accuracy and compliance with accepted engineering/consulting practices lies with the Engineering Designer or specialist assigned to the project, under the direct supervision of the Project Manager or Project Engineer. Secondary responsibility lies with the assigned reviewer(s) from the Review Team (one or more of a group of Senior Engineering Designers or Professional Engineers) who is not the primary designer. The designation of the Review Team member(s) who perform this function is made by the Project Manager or Project Engineer. This individual will be someone who has not worked on the project that will review the project for concurrence with the outlines design goal and any constructability issues. Final responsibility lies with the Licensed Professional Engineer who reviews, signs and seals the project drawings, specifications or reports. Review by one or more members of the Review Team will be accomplished prior to the issuance of any set of plans and/or specifications that leave the office for any purpose, but will typically be for 40% completion, 90% completion, comment by permitting agencies, comment by client and 100% completion (bid or permit set).

An essential part of the plan review is the use of company and/or client-specific plan review checklists. The appropriate checklist will be used first by the primary designer or specialist and then by those who review the reports, plans and/or specifications. These reviews also ensure the finished product incorporates Terramar Engineering standard design elements, as well as presentation and appearance to Terramar Engineering's high standards.

The design process also incorporates extensive coordination with other design professionals, and all appropriate governing agencies and jurisdictional authorities such as City staff, State Department of Transportation utility agencies, and other stake holders.



On certain projects, as a final check for constructability, Terramar has an outside surveyor review the final plans prior to printing mylars. This will provide a necessary final step to ensure that all proper steps have been addressed.

V: Rate Schedule

STAFF			
	NAME	TITLE	HOURLY RATE
1.	Raab Rydeen, PE, CEPSC	Principal/Project Manager	\$135.00
2.	Kyle Flaming, PE, QSP/QSD, CPESC	Hydrologist	\$135.00
3.	Jason Evans, PE, MS, QSP/QSD, ToR, CPESC	Principal/Project Engineer	\$135.00
4.	Phillip Patague, PE	Principal/Project Engineer	\$135.00
5.	Debbie DiSpaltro	Administrative Assistant	\$60.00
EXPENSES			
	DESCRIPTION	COST	% MARKUP
1.	Mileage	\$0.575/mile	0%
2.	Copy Services (outside service)	At cost	10%
3.	Copy Services (in-house prints/binding)		
	8.5 x 11 (Black and White)	\$0.10/sheet	0%
	8.5 x 11 (Color)	\$0.17/sheet	0%
	11 x 17 (Black and White)	\$0.80/sheet	0%
	11 x 17 (Color)	\$1.60/sheet	0%
	½ Size Plans (Black and White)	\$0.90/sheet	0%
	½ Size Plans (Color)	\$1.60/sheet	0%
	24 x 36 Bond (Black and White)	\$1.65/sheet	0%
	24 x 36 Bond (Color)	\$4.10/sheet	0%
	24 x 36 Mylar (Black and White)	\$8.50/sheet	0%
	24 x 36 Mylar (Color)	\$10.95/sheet	0%
	30 x 42 Bond (Black and White)	\$2.45/sheet	0%
	30 x 42 Bond (Color)	\$5.90/sheet	0%
	30 x 42 Mylar (Black and White)	\$12.40/sheet	0%
	30 x 42 Mylar (Color)	\$15.90/sheet	0%
4.	Other (in-house printing services)		
	CD Rom	\$10.00 each	0%
	Map Pocket	\$2.00 each	0%
	Edge Binder	\$1.20 each	0%
	Protective Cover	\$0.85 each	0%
	3-Ring Binder (1/2"-to-1")	\$6.00 each	0%
	3-Ring Binder (2")	\$7.00 each	0%
	3-Ring Binder (3")	\$8.00 each	0%
	3-Ring Binder (4")	\$18.00 each	0%
	Comb Binder (2-to-100 Sheets)	\$1.25 each	0%
	Comb Binder (101-to-200 Sheets)	\$1.35 each	0%
	Comb Binder (201-to-300 Sheets)	\$1.85 each	0%
	Tabs	\$0.40 each	0%



Attachment 1 - Resumes of Key Personnel





Raab Rydeen, PE
Project Manager

Mr. Rydeen has over 19 years of experience in coordination of civil engineering projects from the pre-design process through construction management and final project acceptance. He has dedicated his career to providing innovative design and planning solutions to an impressive list of local and national clients throughout southern California. Mr. Rydeen is a licensed Professional Engineer (PE) for the State of California.

**Registration/
Accreditation**

PE C64811

**Years of
Experience**

19

Education

BS Civil
Engineering
1995 San Diego
State University

Mr. Rydeen's experience includes an array of commercial developments and municipal engineering projects. Mr. Rydeen maintains a strong communications link between his clientele; his staff, design team and projects engineers, the project team members, as well as local government agencies.

Mr. Rydeen's specializes in Parking Lot Design, BMP integration into site design, Low Impact Development, Project Cost Estimating, Street Improvements and Storm Drainage Design. Mr. Rydeen has experience in a number of projects throughout his career.

Mr. Rydeen is a Principal at Terramar Engineering Inc. He is recognized as a professional with a tremendous amount of experience in all aspects of land development and is an effective communicator and representative, working well with clients, the public and jurisdictional agencies to forestall or resolve conflicts and achieve positive results. Mr. Rydeen's experience as a civil engineer extends to projects of all complexities and sizes, such as:

- Commercial Shopping Centers Including BMP design and Low Impact development
- Cost Estimating
- Road Design and Associated Infrastructure (*State, County, and private roads*)
- Water Hydraulic Analysis and Design

Selected Project Experience:

Lowe's Home Improvement Warehouse Projects - *Escondido, Fairfield, Lancaster, Murrieta, National City, Oceanside, Rancho Cucamonga, Upland, Moreno Valley*

Terramar Engineering is the Civil Engineer of Record and provides a wide-range of civil services to various Lowe's Home Improvement Warehouse projects located throughout California. Mr. Rydeen serves as the Program Director for these projects. Scope of services includes: full civil, landscape design, irrigation design, construction administration, SWPPP, WQMPs, and on and off-site road improvements. Mr. Rydeen also serves as the developer and manages all the permitting and processing stages of the projects.

Lowe's Flatbed Distribution Center, Beaumont CA - Mr. Rydeen served as the Project Director of this 250,000 sq. ft. main distribution center located on over 50 acres. Mr. Rydeen worked with the Public Utilities Commission to obtain PUC approval on the rail crossing adjacent to the site. The scope of work included: full civil, project administration, zoning and annexation activities, preparation of preliminary onsite plans, highway and street offsite plans, rough and precise grading plans, water and sewer plans, SWPPP and WQMPs.

Camp Pendleton RV & Vehicle Storage Facility, Oceanside, CA - Mr. Rydeen served as the Project Director and Engineer for the 14.55 acre RV/vehicle storage unit and offsite road improvements. Mr. Rydeen's team provided services for each of the following phases: project planning, entitlements, onsite grading plans, on and offsite utility plans, offsite Improvement plans, and construction coordination.



Jason Evans, PE, MS, QSP/QSD, CGP-ToR, CPESC
Project Engineer

Mr. Evans has served as a Project Engineer on a variety of environmental projects over the past 9 years. Mr. Evans is an expert on the California Construction General Permit, a Certified Professional in Erosion and Sediment Control (CPESC), and a licensed Professional Engineer (PE) in California. His additional certifications include: Storm Water Pollution Prevention Plan (SWPPP) Practitioner (QSP), Qualified SWPPP Developer (QSD), and he has been approved by the California Stormwater Quality Association (CASOA) and the California Construction General Permit Training Team (CCGPTT) as a Trainer of Record (ToR) for the QSD and QSP Training Course.

**Registration/
Accreditation**

PE - 74792
QSP/QSD - 00074
CPESC - 4610
CGP-ToR

**Years of
Experience**

9

Education

BA Environmental
Studies, University
of Colorado (2000)
MS Civil
Engineering, San
Diego State
University (2007)

Mr. Evans is a Principal at Terramar Engineering Inc. and is responsible for all environmental and stormwater engineering projects. Mr. Evans provides training related to stormwater quality protection, design, inspections, operations, and maintenance to both engineers and contractors. Mr. Evans designs Erosion Control Plans, prepares SWPPPs and helps clients obtain permit coverage by serving as a Data Submitter on the State Water Resources Control Board (SWRCB) Stormwater Multiple Application and Report Tracking System (SMARTS). Mr. Evans assists Clients with filing Notices of Intent (NOIs), Erosivity Waivers, Notices of Termination (NOTs) and preparing/uploading SWPPPs, Annual Reports and other compliance documentation.

Mr. Evans is experienced at performing Site Inspections/SWPPP audits and checking plans and reports to ensure compliance with Construction General Permit. Mr. Evans prepares technical reports and construction documents for permanent Low Impact Development (LID) Best Management Practices (BMPs) along with Water Quality Technical Reports (WQTRs), Hydrologic/Hydraulic Drainage Reports, Storm Water Management Plans (SWMPs), and Hydromodification Management Plans (HMPs).

Selected Project Experience:

East Mesa Detention Facility, County of San Diego, San Diego, CA – Stormwater Engineer.

Mr. Evans designed post-construction Low Impact Development (LID) Best Management Practices (BMPs), including eleven (11) Bioretention Basins to accommodate Water Quality, Hydromodification Management and Flood Control concerns in accordance with the San Diego County Standard Urban Storm Water Mitigation Plan (SUSMP) and San Diego County Hydrology Manual. In addition to the LID BMP design, Mr. Evans prepared a Storm Water Management Plan (SWMP), a Hydromodification Management Plan (HMP) and a Hydrologic/Hydraulic Report for the project and assisted the Client with consulting services regarding BMP selection and site layout options. Mr. Evans worked closely with the Client and County to optimize the design of the Bioretention Basins using SWMM modeling procedures and specialized outlet structures to significantly reduce the BMPs required volumes and construction costs.

Marine Parkway Sand Filter, San Diego Unified Port District, Chula Vista, CA – Stormwater Engineer.

Mr. Evans designed post-construction Low Impact Development (LID) BMPs, and prepared a BMP Design Technical Report, a Hydrologic Study and two SWPPPs for the 50-acre former BF Goodrich South Campus in Chula Vista, California. Project involved remediation of contaminated soils, abandonment of the existing storm drain system and the design of permanent stormwater BMPs (i.e. sand filters and constructed wetlands). Additionally, three acres of wetlands habitat were designed as mitigation for the loss of wetland plant species related to the remediation. Mr. Evans designed the LID BMPs and prepared the Hydrologic Study, the BMP Technical Report, two independent sets of Erosion Control Plans and SWPPPs in accordance with the District's SUSMP and State's Construction General Permit requirements. Additionally Mr. Evans assisted the District with project bidding and construction management.



Kyle Flaming, PE, QSPI/QSD, CPESC
Project Engineer

Mr. Flaming has over 13 years of experience in project management of civil engineering projects from the pre-design selection process through construction management and final project acceptance. Mr. Flaming is a Certified Professional in Erosion and Sediment Control (CPESC) and a licensed Professional Engineer (PE) in the States of California, Nevada, Arizona, and Texas.

Mr. Flaming is a Principal at Terramar Engineering Inc. and is responsible for the management and design of all engineering projects. He is an expert in all aspects of land development and uses his expertise to consult with private and public clients. He successfully coordinates with the client, governing agencies, and his staff to efficiently finish each project.

Mr. Flaming's experience includes: commercial and residential subdivisions; commercial and residential site engineering; roadway design, streets, major arterial streets and freeways; hydrology, water sewer and storm drainage design; construction management and inspection. He also has experience with processing of projects through agencies with very demanding review processes including the Regional Water Quality Control Board, The California Department of Fish and Game, and CALTRANS.

Mr. Flaming's experience as a civil engineer extends to projects of all complexities and sizes, such as:

- Public Schools
- Residential Developments
- Commercial Developments
- Environmentally Sensitive Issues
- Public Works Projects
- Road Design and Associated Infrastructure
(State, County, and private roads)

Selected Project Experience:

San Diego Unified Port District, Marina Parkway Sand Filter & Remediation - Mr. Flaming served as the Project Engineer for these two projects. The scope of work Included: the design of stormwater quality treatment control best management practices (sand filters), and an under-drain system and grading to be performed in coordination with soil remediation activities at the L-Ditch site. Additionally wetlands remediation and channel design was implemented.

Walmart Stores Inc. Projects - *El Monte, Fountain Valley, Menifee, Murrieta, Redlands, Rialto, San Jacinto*

Mr. Flaming served as the Project Manager for various Walmart Stores Inc. projects located throughout California. Scope of services Includes: full civil, landscape design, irrigation design, construction administration, SWPPP, WQMPs, and on and off-site road improvements.

Lowe's Home Improvement Warehouse Projects - *Oxnard, Carlsbad, National City, Poway*

Terramar Engineering is the Civil Engineer of Record and provides a wide-range of civil services to various Lowe's Home Improvement Warehouse projects located throughout California. Mr. Flaming serves as the Project Manager for these projects. Scope at services Includes: full civil, landscape design, Irrigation design, construction administration, SWPPP, WQMPs, and on and off-site road improvements.

**Registration/
Accreditation**

PE Registration
C76432

CPESC #4609

**Years of
Experience**

13

Education

BS Physics &
Math
2001 Cameron
University, OK



Phillip Patague, PE
Hydrologist/Engineer

Mr. Patague has over 3 years of experience in Land Development and Drainage Design of civil engineering projects from the pre-design selection process through construction management and final project acceptance. Mr. Patague is a licensed Professional Engineer (PE) in California.

Mr. Patague is responsible for the management and design of all engineering projects. He is adept in all aspects of land development and uses his expertise to consult with private and public clients. He successfully coordinates with the client, governing agencies, and his staff to efficiently finish each project. Mr. Patague's experience as a civil engineer extends to projects of all complexities and sizes, such as:

- Public Schools
- Commercial Developments
- Public Works Projects
- Road Design and Associated Infrastructure (*State, County, and private roads*)

Furthermore, Mr. Patague is experienced in drainage design and generating the relevant calculations and reports pertaining. He is knowledgeable in performing the necessary calculations to meet Flood Control, Water Quality and Hydromodification requirements.

Selected Project Experience:

AutoZone – Vista; Holtville; Imperial

Mr. Patague designed and analyzed post-construction Low Impact Development (LID) Best Management Practices (BMPs, including two (2) Bioretention Basins to accommodate Water Quality, Hydromodification Management and Flood Control concerns in accordance with the San Diego County Standard Urban Storm Water Mitigation Plan (SUSMP) and San Diego County Hydrology Manual. In addition to the LID BMP design, Mr. Patague prepared a Hydrologic/Hydraulic Report for the project. Furthermore, he was an integral part of plan production including: drafting, grading, and compilation of Construction Documents.

Pacifica San Marcos - San Marcos, CA

Mr. Patague aided in the design and analysis of a post-construction LID BMP in the form of Bioretention system with an Extended Detention Basin. The BMP accommodated the Water Quality, Hydromodification Management and Flood Control concerns in accordance with the San Diego County Standard Urban Storm Water Mitigation Plan (SUSMP) and San Diego County Hydrology Manual. In addition to the LID BMP design, Mr. Patague prepared a Hydromodification Management Plan (HMP) and a Hydrologic/Hydraulic Report for the project. Mr. Patague worked closely with the Client and County to optimize the design of the LID BMP using SWMM modeling procedures and specialized outlet structures to significantly reduce the BMPs required volumes and construction costs. Furthermore, he was an integral part of plan production including: drafting, grading, and compilation of Construction Documents.

Breen Park BMP Retrofit- San Diego, CA

Mr. Patague designed and analyzed post-construction LID BMPs, including three (3) Bioretention Basins to accommodate Water Quality and Flood Control concerns in accordance with the San Diego County Standard Urban Storm Water Mitigation Plan (SUSMP) and San Diego County Hydrology Manual. Mr. Patague coordinated with the client to ensure that the geometry of the BMPs made an efficient use of space while optimizing earthwork and meeting design constraints.

**Registration/
Accreditation**

PE Registration
C84169

**Years of
Experience**

3

Education

BS Civil
Engineering
2012 San Diego
State University