



Oceano

Community Services District

Request for Proposal for Engineering &
Related Services

Cannon

Reliable Responsive Solutions

Paavo Ogren, General Manager
Oceano Community Services District
1655 Front Street
Oceano, CA 93445

December 1, 2017

Subject: Request for Proposal for Engineering & Related Services

Dear Mr. Ogren:

The Oceano Community Services District encompasses a very diverse mix of residential, industrial, agricultural, and open space. Long term planning for the water resources available to the community is critical. Retaining as much of this valuable resource locally is key to the longevity of the community and the District. The projects outlined in the Water Resource Reliability Program are aimed at doing just that; keeping this valuable resource right here.

Using recycled water to recharge the groundwater basin provides long term supply benefits, helps prevent seawater intrusion, and keeps water from being discharged out into the ocean before realizing its full potential.

Implementing new Low Impact Development features will capture stormwater runoff, minimize flooding on heavily traveled roads, and infiltrate the water back into the ground instead of discharging untreated runoff directly into the ocean.

A robust leak detection and management plan will locate the water losses in the distribution system, fix them, and ensure that the community is not paying for wasted water. This will also help extend the supply during times of drought.

The consultant you select for this project must be able to work seamlessly with your team to:

- Meet the schedule and criteria established by the IRWSM Grant
- Provide you with the information needed to secure Proposition 1 funding for future improvement projects
- Deliver within your budget and without any costly changes or surprises; and
- Minimize the demand on your limited in-house staff.

For 41 years, Cannon has provided engineering design, construction management, and surveying services for projects including water and wastewater infrastructure upgrades, street improvements, and development of municipal facilities throughout California.

Our team is ready to get started on your project immediately. I am available to answer any questions about this proposal through the contact methods provided below, or to meet and further discuss the details of our approach and the benefits we offer. This proposal is valid for a 90 day period from the submittal date.

Sincerely,



Michael Kielborn, PE No. 70112, LEED AP
Principal Civil Engineer

1050 Southwood Drive, San Luis Obispo, CA 93401

☎ 805.503.4582 📠 310.633.4539 📠 805.544.3863 ✉ MichaelK@CannonCorp.us

We have received the RFP and any associated addendums or responses to inquiries

Cannon

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*Cost Proposal Provided in a Separate .PDF Document

“The City of Pismo Beach has come to expect a high caliber of service from Cannon’s team. For nearly a decade, Cannon has supported our beautiful city in the preservation of safe and steady public infrastructure for residents and tourists alike.”

Benjamin A. Fine, Director of Public Works & City Engineer, City of Pismo Beach



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Qualifications

Cannon Corporation- Providing Reliable Responsive Solutions since 1976

Firm Profile

As a full-service engineering, surveying, and construction management firm with more than 100 staff members, we take pride in our ability to offer clients a broad range of services. Our commitment to providing clients Reliable Responsive Solutions, whether the project scope is expansive or more specialized, spans over 40 years. During that time, we have worked with many cities, counties, and agencies to maintain secure and dependable wastewater and water systems, make streets safer and more pedestrian and bicycle-friendly, and construct buildings and facilities that are structurally sound. Likewise, we are dedicated to creating sustainable landscapes and providing a high level of technical expertise in areas of low impact development (LID) design.

These characteristics have been an integral part of the capital improvement projects we have completed throughout California, including the Oceano Drainage Improvements and Front Street Revitalization projects.

Los Angeles

11900 West Olympic Blvd, Ste 530
Los Angeles, CA 90064

San Luis Obispo

1050 Southwood Drive
San Luis Obispo, CA 93401

Bakersfield

4540 California Ave, Ste 550
Bakersfield, CA 93309

“Cannon’s team members have demonstrated they are diligent in their work product, responsive, and flexible in their communications. All of these characteristics are attributable to Cannon’s high standard for quality and exceptional leadership. We look forward to working with Cannon on future projects, and recommend their services without reservation.”

Ditas Esperanza, PE, Capital Projects Engineer, City of Paso Robles

Michael Kielborn, PE, LEED AP Project Manager

1050 Southwood Drive, San Luis Obispo, CA 93401

☎ 805.503.4582 📠 310.633.4539 📠 805.544.3864 ✉ MichaelK@CannonCorp.us

🌐 CannonCorp.us

Mr. Kielborn specializes in water and wastewater management planning; water supply, storage, and distribution; and sewer system engineering. Since 1999, he has provided construction management/inspection services primarily working in underground utility construction and infrastructure design. Since 2003, he has served as Project Manager for improvements to water supply and wastewater systems for numerous reservoirs, pump stations, wells, surge tanks, major water transmission mains, and trunk sewers. Mr. Kielborn is a certified Horizontal Directional Drilling Inspector, and has effectively translated his knowledge of construction practices into creating facility designs that are more efficiently constructible. In addition, he has developed excellent project management, cost estimation, in-field engineering management, inspection, coordination, and scheduling abilities for multi-million-dollar projects.





Keone Kauo, PE
Principal Civil Engineer

- Experience in designing, planning, managing, and construction of public

- infrastructure and transportation projects since 2000
- Rehabilitative, beautification, new, complete, and green street designs
- Multi-use and bike pathways
- Wet and dry utilities including sanitary sewer, storm drainage, and domestic and recycled water systems
- ADA compliance
- Experienced with California agencies on City, County, and State levels



Melanie Mills, PLA
Senior Landscape Architect

- Experience in the field of landscape architecture since 2000
- Additional six years of

- experience in land conservation and community development
- Focuses on creation of high performance landscapes where low impact development systems are an integral feature
- Considerable experience working on interdisciplinary planning and design teams to incorporate ecological sustainability and function into the built environment



Derek Romer, PE
Senior Principal Electrical Engineer

- Experience in the field of electrical engineering since 1995
- Electrical and control systems design

- in secondary power distribution, lighting, instrumentation, and SCADA
- Pump stations, reservoirs, sewage lift stations, potable and wastewater treatment facilities, wells, and more
- Project management, field investigations, calculations, and design drawings and specifications
- Troubleshooting during project start-up and inspection
- Energy-efficient systems

Organizational Chart

Our team of professionals includes the following:

- Licensed Civil, Structural, Mechanical, Automation/Control Systems, and Electrical Engineers
- Licensed Land Surveyors and Survey Technicians
- Licensed Landscape Architects
- Caltrans Academy Construction Managers, Inspectors, and Administrators
- Qualified Stormwater Practitioners and Developers
- Federal, State, and Local Funding Administrators and Planners

Public Outreach & Education Liz Moody, LEED AP, CPSM

- Community Workshops
- Community Outreach
- Feasibility Studies
- School Outreach Programs
- Technical Assistance
- Permitting Research



Oceano Community Services District

Paavo Ogren
General Manager



Larry Kraemer, PE
Principal-in-Charge (QA/QC Manager)
No. 44813 - MS, Water Resources,
California State University, Long Beach, CA

Michael Kielborn, PE, LEED AP
Project Manager
No. 70112 - BS, Civil Engineering, Loyola
Marymount University, Los Angeles, CA

Keone Kauo, PE
Principal Civil Engineer
No. 75284 - BS, Civil Engineering,
University of Nevada, Reno, NV



Melanie Mills, PLA
Senior Landscape Architect
No. 5394 - MS, Landscape Architecture,
University of Washington, Seattle, WA

Derek Romer, PE
Senior Principal Electrical Engineer
No. 16396 - BS, Electrical Engineering,
California Polytechnic State University
San Luis Obispo, CA

Liz Moody, CPSM, LEED AP
Director, Marketing
BA, English, University of Washington
Seattle, WA

Michael Kielborn, PE, LEED AP Project Manager

Professional Registration

- Registered Civil Engineer, California, No. 70112
- LEED Accredited Professional
- Certified Horizontal Directional Drilling (HDD) Inspector

Education

- Bachelor of Science, Civil Engineering, Loyola Marymount University, Los Angeles, California

Professional Affiliations

- Association of Water Agencies of Ventura County
- American Public Works Association
- American Water Works Association
- California Water Environment Association
- North American Society for Trenchless Technology
- National Association of Sewer Service Companies
- Building Industry Association of Southern California - Los Angeles/Ventura Chapter

As a Project Manager Mr. Kielborn provides technical oversight of the design team; conducts meetings with OCSD staff and subconsultants; provides project status updates, invoicing, and budget control; estimates cost and scheduling; assists with permitting processes (when needed), and provides multi-agency coordination and public outreach assistance. In addition, he is responsible for applying senior-level engineering design practices and techniques, recognizing design discrepancies in results and detailing design processes/economic data to the OCSD.

Select Project Experience Summary

Mr. Kielborn has served as Project Engineer, Manager, or Construction Manager/Resident Engineer on the following projects:

- Plan Check and Construction Inspection for Elizabeth Lake Road/25th Street West Pump Station, Palmdale, California
- Plan and Construction Administration and Inspection for 10-year Sewer Collection System Inspection and Maintenance Program, Solvang, California
- Design and Construction Management for Golf Course Well No. 7, Ventura, California
- Design, Equipping, and Related Site Work for Mound Well Nos. 2 and 3, Ventura, California
- Design and Construction Management for Runkle Canyon Pump Station and 2.0MG Reservoir, Simi Valley, California
- Design for Swivel El Connection, Simi Valley, California
- Design and Construction Management for Romero Canyon Water Tank, Castaic, California
- Design and Construction Management for Water Main Replacement Project, Santa Monica, California
- District Engineer: Design and Construction Support for Highway 246 Lift Station, Gravity Sewer, and Manhole Relining Project, Santa Ynez Community Services District, Santa Ynez, California
- Design and Construction Management for Leanna Drive Waterline Creek Crossing, Arroyo Grande, California
- Design and Construction Management for 21st Street Green/Complete Street Improvements, Paso Robles, California
- Design and Survey for Maryland Avenue Mini Park Recycled Waterline, Glendale, California
- Design, Survey, and Construction Inspection/Observation for 13th Street Sewer Main Upgrades and Lift Station No. 5 Project, Paso Robles, California
- Design and Construction Management for Bonita and Beverly Street Alleyways Backyard Easement Sewer Upgrades, Paso Robles, California
- Design for El Verano Hydropneumatic Tank Replacement, Atascadero, California



Keone Kauo, PE Principal Civil Engineer

Professional Registration

- Registered Civil Engineer, California, No. 75284

Education

- Bachelor of Science, Civil Engineering, University of Nevada, Reno, Nevada

Professional Affiliations

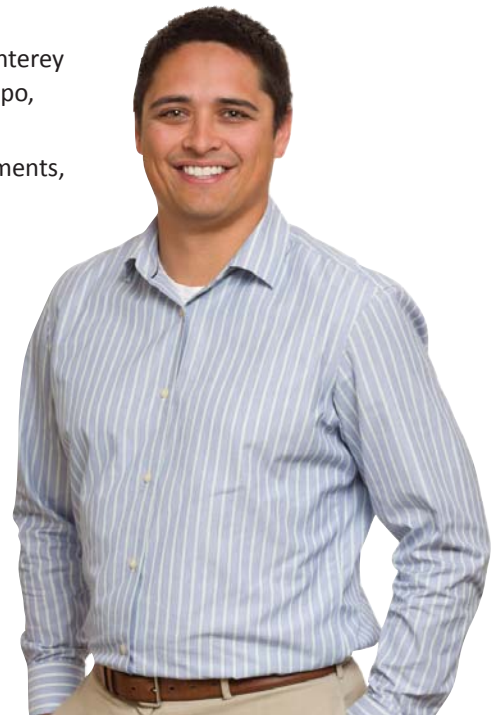
- American Society of Civil Engineers
- American Public Works Association

As a Principal project engineer specializing in street/transportation improvement projects, Mr. Kauo will work as part of the design team and provide leadership of associate and senior project engineers as well as project designers. With a working knowledge of multiple engineering disciplines, he will apply his intensive and diversified insight to project assignments and interact extensively with other design departments. In a supervisory capacity, he will assist with the development of plans, technical specifications, project design, cost and schedule estimation, feasibility assessments, and safety policies.

Select Project Experience Summary

Mr. Kauo has served as Project Engineer, Manager, or Construction Manager/Inspector on the following projects:

- Design for Storm Drainage Improvements, Oceano, California
- Design for Front Street Revitalization Project, Oceano, California
- Design for Measure K 2016-1 Street Rehabilitation and Repair Program, Grover Beach, California
- Design for Measure K 2017-1 Street Rehabilitation and Repair Program, Grover Beach, California
- Construction Engineering for 2015-1 and 2015-2 Street Repair and Rehabilitation Project, Grover Beach, California
- Design for Blosser Road Bioretention Project, Santa Maria, California
- Design for Fiscal Year 2013-14 Street Improvement Projects, South Pasadena, California
- Design and Construction Management for 21st Street Green/Complete Street Improvements, Paso Robles, California
- Design and Construction Management for 12th Street Green Street Improvements, Paso Robles, California
- Design for Sidewalk Infill Project, Lompoc, California
- Conceptual Design for First Street Drainage, Avila Beach, California
- Design and Construction Management for Bluff Stabilization and Sea Walls, Pismo Beach, California
- Design and Construction Management for Monterey Street Water Main Replacement, San Luis Obispo, California
- Design for CSA23 Emergency Intertie Improvements, Santa Margarita, California
- Design for Sherwood Road Maintenance, Paso Robles, California
- Design for Los Osos Valley Road Safe Routes to School Bike Path, San Luis Obispo, California
- Design for Intersection Improvements at Central and H Street (Highway 1), Lompoc, California
- Design for 100 Black North H Street (Highway 1) Sidewalk Improvements, Lompoc, California
- Design for Broadway and Main Street Drainage Repair, Santa Maria, California



“I want to let [Keone] know that his work has been exceptional. I really appreciate the speed and accuracy of his teams’ plans. Cannon’s customer service is exemplary – keep up the good work.”

David Athey, PE,
City Engineer, City of
Paso Robles

Melanie Mills, PLA Senior Landscape Architect

Professional Registration

- Landscape Architect, California, No. 5394

Education

- Master of Landscape Architecture, University of Washington, Seattle, Washington
- Bachelor of Arts, Fine Arts, University of Puget Sound, Seattle, Washington

Professional Affiliations

- Bike SLO County Advocacy Team
- Appointed Member - City of San Luis Obispo Creative Vision Team, 2017

21st Street Green/Complete Street Design, Paso Robles, California: The 21st Street project is an award-winning regional low impact development (LID) demonstration project. This commercial and residential street was redesigned as a complete/green street corridor that meets sustainable infrastructure performance objectives while delivering multiple community benefits. In the past, 21st Street experienced frequent flooding, poor pavement conditions, and inadequate facilities for bicycle and pedestrian mobility.

To remedy this, the City of Paso Robles, in partnership with the Central Coast Low Impact Development Initiative and SvR Design Company, developed a concept for a green/complete street. Cannon took the project from a concept through construction documents, implementation, and the development of an O&M Manual. Ms. Mills was the lead landscape architect on the project from concept development to completion, supporting the City's public outreach efforts throughout the entire process. The landscape is comprised of highly drought tolerant planting areas, including functional bioretention planters where stormwater ponds and is allowed to infiltrate into native soils. Ms. Mills also prepared a landscape maintenance manual for City staff.

12th Street Green Street Project, Paso Robles, California: Cannon provided innovative design to transform this five-block corridor that spans both residential and commercial uses. The new 12th Street right-of-way incorporates low impact development (LID) features such as bioretention planters, permeable paver pedestrian walkways, and dry wells to capture, clean, and infiltrate stormwater. A series of interpretive signs tell the story of the newly designed street, how it fits within the watershed, serves to recharge groundwater, and the positive impact it has on the Salinas River. Ms. Mills served as the lead landscape architect on the project.

Blosser Bioretention Project, Santa Maria, California: The City of Santa Maria, using funds provided by a grant from the State Water Resources Control Board, in partnership with the Central Coast Low Impact Development Initiative (LIDI), required improvements to an existing drainage channel located along Blosser Road. Improvements include intercepting urban stormwater runoff from small storms that are currently not being treated before they are released into the Santa Maria River.

Currently under design, the new channel will include features that facilitate water quality enhancement, infiltration, and groundwater recharge. Based on information gained through a community workshop and additional public outreach, the City determined that a pocket park and small dog off-leash area would be valuable additions to the neighborhood. The new park will incorporate native, drought tolerant landscape areas, high efficiency irrigation, permeable paver surfaces, and amenities such as seating, educational signage, park lighting, and a pet drinking fountain.



Derek Romer, PE Senior Principal Electrical Engineer

Professional Registration

- Registered Electrical Engineer, California, No. 16396
- Registered Electrical Engineer, Nevada, No. E15940
- Registered Electrical Engineer, Washington, No. 46296

Education

- Bachelor of Science, Electrical Engineering, California Polytechnic State University, San Luis Obispo, California

Training and Development

- PMSJ Project Management Bootcamp
- Fundamentals of Overhead Transmission Line Design
- SKM Power Systems Protection and Coordination
- SKM Power Systems Arc Flash Evaluation
- 2015 NFPA 70E: Electrical Safety in the Workplace
- CPR Certified

Professional Affiliations

- International Society of Automation
- Institute of Electrical and Electronics Engineers
- Southern California Water Utilities Association
- National Fire Protection Association
- National Council of Examiners for Engineers and Surveyors

As a Senior Principal engineer, Mr. Romer provides services in tandem with the Project Manager, applying his specialized insight and experience with electrical systems and automated control system processes to project assignments. He has full technical responsibility for assisting with interpreting, analyzing, organizing, implementing, and coordinating projects as well as plan development and designs concerned with unique or controversial requirements that have a significant impact on the OCSD.

Select Project Experience Summary

Mr. Romer has served as Project Engineer, Manager, or Construction Manager/Inspector on the following projects:

- Design for Well No. 10, Arroyo Grande, California
- Equipping and Related Site Work for Well No. 21, Vernon, California
- Design for Pressure Reducing Station and Sustaining Valve Design at Reservoir/Well No. 8, Lynwood, California
- Design and Construction Management for Well No. 16 (Rockhaven Well), Crescenta Valley Water District, Montrose, California
- Design and Construction Management for Golf Course Well No. 7, Ventura, California
- Design for Seven Wells for the Arsenic Mediation Project Water Production Facility, Phase 1, Delano, California
- Design and Construction Management for Runkle Canyon Pump Station and 2.0MG Reservoir, Simi Valley, California
- Design for Moss Avenue Pump Station VFD Replacement, Santa Monica, California
- Design for Plant 224 Pump Station and Back-up Generator, Covina, California
- Design, Survey, and Construction Inspection/Observation for 13th Street Sewer Main Upgrades and Lift Station No. 5 Project, Paso Robles, California
- Arc Flash Protection, Santa Maria Energy, Santa Maria, California
- NFPA 70 Arc Flash Study, Pactiv, Bakersfield, California
- Arc Flash Analysis, Benicia, California
- Design for San Luis Rey Pump Station Modifications, Glendale, California
- Design for Golden Valley Road Wastewater Lift Station, Los Angeles County Department of Public Works, Los Angeles, California
- Design for Leroy Jackson Park Improvements, Ridgecrest, California
- Kern Medical Center Electrical Study, Bakersfield, California
- Antelope Valley Courthouse Lighting and Utility Coordination, Lancaster, California
- Design for Motor Control Center Replacement for Eagle Canyon Reservoir, Crescenta Valley Water District, La Crescenta, California
- Design for Zone 9 Interconnection and Pressure Reducing Station, Beverly Hills, California
- Preliminary Design for SCADA System, Norwalk, California



Liz Moody, LEED AP, CPSM Public Outreach & Education

Professional Registration

- LEED Accredited Professional
- Certified Professional Services Marketer

Education

- Bachelor of Arts, English, University of Washington, Seattle, Washington
- Technical Communications Certificate, California Polytechnic State University, San Luis Obispo, California

Professional Affiliations

- American Society of Civil Engineers
- California Water Environment Association
- Home Builders Association
- Society for Marketing Professional Services

Community Outreach: Changing Perceptions of Recycled Water Through Youth Education, San Luis Obispo and Santa Barbara Counties, California: In 2014, Cannon began an outreach program to educate local students whose grades ranged from third through twelfth. The outreach program consisted of a three-part process. The first step included a survey which measured students understanding of the urban water cycle, water recycling technology, facts about global water supply, and acceptance levels of recycled water use. Cannon team members then entered into the classrooms and presented material developed by the WaterReuse Foundation, including the presentation Downstream and video The Ways of Water, augmented by a poster that detailed the Urban Water System, and a demonstration that asked students to determine which jar was filled with recycled water, bottled water, or tap water. Finally, students were given a follow-up survey that was similar to the first one administered to measure the changes in understanding and acceptance levels of recycled water.

Results from this study and outreach program were presented to the WaterReuse Foundation at their annual conference in March of 2015. Results showed a significant increase in understanding of water supply concerns, the availability of water cleaning technologies, and acceptance of recycled water use. Overall, students had a markedly positive attitude toward recycled water after a relatively short outreach program. Cannon's team has continued the outreach program and presented their findings to the WaterReuse Foundation at their national conference in September of 2015.

Sustainable Design Project Presentation, Poly Canyon Village, California Polytechnic State University, San Luis Obispo: Cannon was selected to provide engineering services and LEED certification assistance for the 2,700-bed student housing facility. As part of this project, Ms. Moody prepared a presentation for the local engineering community, project team and University about the sustainable design elements of the project and how key concepts were incorporated into the project's final design.

Feasibility Study for Avila Beach Clean-up, Avila Beach, California: Cannon was selected to prepare a feasibility study analyzing the methods and costs of an excavation-based cleanup strategy for contaminated soils on this 10-acre site. The area under evaluation consisted of four city blocks and the adjacent beach front. Services provided by Cannon included evaluating the removal of contaminated soil and recommending remediation options; determining types and quantities of barrier and shoring walls; and supervising demolition and replacement of infrastructure. Ms. Moody assisted in the preparation of the feasibility study, which included publishing Administrative and Final Drafts, attending weekly team meetings, and compiling volumes of information from various sources. She also assisted with the technical research, permitting issues, as well as cost estimating and scheduling requirements for the alternative remediation methods.

Tank Siting Study for CSA 10A Water Storage, San Luis Obispo, California: Cannon was selected by the County of San Luis Obispo to provide civil engineering and visual graphics services for a new water storage tank siting study in the area 10A, Cayucos. The scope of work included a preliminary findings and analysis, identifying multiple potential tank sites along an approximately one mile stretch of hill side, south of Cayucos. The CSA 10A Master Plan identified several important requirements to consider in selecting a tank site, including; geologic stability to support the tank; accessibility of the selected site for maintenance and connection to the existing water system; and hydraulic suitability to maintain sufficient system pressure. The potential tank sites were then narrowed down to three potential tank sites based on coordination with the County and the preliminary findings and analysis prepared by Cannon. Ms. Moody assisted in the preparation of the study.



Coco Herda Technical Writer and Bilingual Outreach Coordinator

Education

- Technical Writing Certification, Loyola Marymount University, Los Angeles, California
- Bachelor of Arts, International Studies, Barry University, Miami Shores, Florida

Ms. Herda has worked in different capacities of outreach coordination for the past 12 years, including education support, workshop facilitation, demonstration development, stakeholder coordination, and community outreach. Her dedication and continued involvement in community service opportunities and community-building events focuses on bridging gaps of understanding and inviting collaborative participation in cross-cultural activities. As a technical writer, Ms. Herda has experience working with interdisciplinary teams and on marketing campaigns to support communication, facilitate coordination, and provide end-product reviews.

Cannon Event Marketing and Outreach, San Luis Obispo, California: Ms. Herda has supported Cannon's marketing and outreach efforts for professional projects, community building endeavors, and fundraising activities. The firm's commitment to cross-cultural communication means that materials for regional demonstration projects and fundraisers are also prepared in Spanish. Ms. Herda's responsibilities include, proposal preparation, document editing, language and cultural support, and translation assistance.

Stoke the World Foundation Directory, Project Coordinator and Motivation Focalizer, San Luis Obispo County, California: This 501.c.3 non-profit, committed to philanthropy and promotion of volunteerism, identified a need to improve the means by which people connect with volunteer opportunities. The project began with a market research and has continued into the design phase of an online program and a web app that will serve as a vehicle for participants to connect with community building opportunities in different ways. The proposed interface will deliver access to established organization and agencies, resources to building your own community project, skill-sharing and mentorship opportunities, and connection across a network of people doing good. Ms. Herda responsibilities include assisting with market research, conducting agency interviews, organizing community outreach, and spearheading volunteer recruitment. This project is ongoing and Ms. Herda currently serves in this role.

Workshop Facilitator and Program Lead, Restorative Partners, San Luis Obispo County, California: Restorative Partners provides services and programs designed to meet diverse needs, focused on body, mind and spiritual transformation, incorporate trauma care, address responsibility and accountability, reduce violence and lower recidivism, and provide reentry services including evidence based programs and mentoring for those recently released. Ms. Herda currently serves as a volunteer program lead for various programs, including in-custody yoga and meditation classes, Alternatives to Violence (AVP) workshops, and visionboard workshops. The diverse population of the County facilities means that she often provides additional instruction and support in Spanish. She also provides Restorative Partners community outreach and education support services on a volunteer basis.

Job Developer and Case Manager, Cuesta College Youth Employment Program, San Luis Obispo County, California: This County-, State- and Federally- funded program was designed to, in part, introduce qualifying youth to the workforce through training, mentoring, and education for work-readiness, or enter into life-long learning through postsecondary education. Ms. Herda's responsibilities included facilitating youth workshops, organizing and conducting customer service skills training, program marketing, and case management. Since many program participants were minors in Spanish-only speaking homes, Ms. Herda actively communicated program milestones, such as enrollment, and schedule coordination in Spanish.

Bicycle Safety Instructor and Volunteer Mechanic, Bike SLO County, San Luis Obispo County, California: Bike SLO County's advocacy efforts have been instrumental in creating safer roads and paths and connecting cities and communities on the Central Coast. In addition, Bike SLO County provides bicycle education programming that spans all ages — from elementary to adults, operates a Bike Kitchen, and provides Bike Valet for county farmers' markets and county events. Ms. Herda is currently active in supporting Bike SLO County staff as a volunteer, providing education and assistance to clients in the Bike Kitchen, building bicycles for in-need community members, and supports the organizations mission with community outreach efforts as a Bicycle Safety Instructor.



Larry Kraemer, PE Principal-in-Charge

Professional Registration

- Registered Civil Engineer, California, No. 44813

Education

- Master of Science, Civil Engineering - Water Resources, California State University, Long Beach, California
- Bachelor of Science, Agricultural Engineering, California Polytechnic State University, San Luis Obispo, California

Professional Affiliations

- American Society of Civil Engineers
- American Water Works Association
- American Public Works Association
- California Water Environment Association
- Water Environment Federation
- WaterReuse Association
- Institute for Sustainable Infrastructure

Presentations & Publications

- *Trenchless Technology*, August 2006, ASCE Central Coast Chapter, San Luis Obispo, CA
- *Case Study*, March 2012, City of Paso Robles 21st Street Green/Complete Street, AWWA Sustainable Water Management Conference, Portland, OR

As Principal-in-Charge Mr. Kraemer makes decisions and recommendations recognized as authoritative that have a far-reaching impact on Cannon's engineering design, construction, administrative, and related activities. He negotiates critical and controversial issues along with other Senior Principal engineers and officers of other companies or organizations. In addition, Mr. Kraemer exhibits a superior level of creativity, foresight, and judgment in planning, organizing, and guiding project teams and engineering programs. Recognized as an expert in one or more specialties, he applies his extensive knowledge to complex projects and assumes responsibility for the department of public infrastructure at Cannon.

Select Project Experience Summary

Mr. Kraemer has served as Project Manager, Principal-in-Charge, or District Engineer on the following projects:

- Design for Front Street Revitalization Project, Oceano, California
- Design for Measure K 2016-1 Street Rehabilitation and Repair Program, Grover Beach, California
- Construction Engineering for 2015-1 and 2015-2 Street Repair and Rehabilitation Project, Grover Beach, California
- Design for Blosser Road Bioretention Project, Santa Maria, California
- Design and Construction Management for 21st Street Green/Complete Street Improvements, Paso Robles, California
- Design and Construction Management for 12th Street Green Street Improvements, Paso Robles, California
- Design for Old Town Sidewalk Network Plan, Goleta, California
- Design for Sidewalk Infill Project, Lompoc, California
- Design for CDBG Curb Ramps Phases 1 and 2, San Luis Obispo, California
- Design for Johnson Pavement Repair, San Luis Obispo, California
- Design for Chorro Pavement Repair, San Luis Obispo, California
- Design for Hutton Road Widening, San Luis Obispo, California
- Design for Street Reconstruction Summer 2011, San Luis Obispo, California
- Design for Microsurfacing Summer 2011, San Luis Obispo, California
- Design for Los Osos Valley Road Safe Routes to School Bike Path, San Luis Obispo, California
- District Engineer: Design and Construction Support for Highway 246 Lift Station, Gravity Sewer, and Manhole Relining Project, Santa Ynez Community Services District, Santa Ynez, California
- Design and Construction Management for Monterey Street Water Main Replacement, San Luis Obispo, California



Drainage Improvement Project

Oceano, California



Contract Amount: \$290,282
Construction Cost/Project Size: \$2.5 - 3M
Project Dates (Design): 2010 - Ongoing
Project Dates (CM): Not In Construction



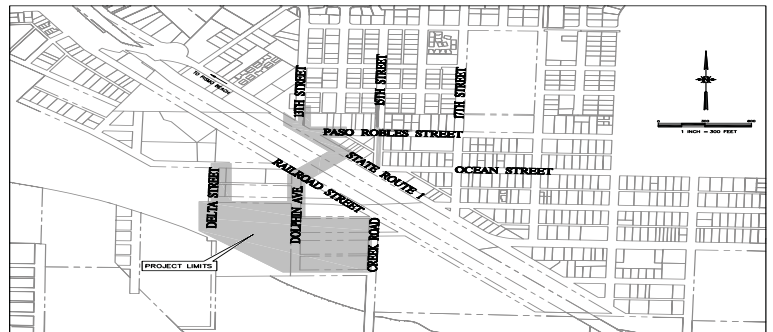
The intersections of 13th Street/Hwy 1 and 17th-19th Street/Hwy 1 in Oceano experience flooding during significant rain events. To alleviate these drainage issues, Cannon has been working with the County of San Luis Obispo to design new storm drain improvements. Improvements include new inlet structures, culvert pipes, junction structures, LID detention basins, and outlet facilities. A new underground storm drain system is helping to alleviate historical flooding of Highway 1 during small storm events.

Cannon's design has provided pragmatic drainage solutions given the complex downstream drainage situation with Oceano Lagoon and Arroyo Grande Creek. It reroutes historical stormwater flow from Meadow Creek Lagoon to reduce flooding of residential homes. In addition, the project provides a detention basin to meter outflow into Arroyo Grande Creek, and minimized property acquisition for improvements.

Other considerations include topography, property access/acquisition, railroad crossings, utility conflicts, environmental permitting, construction and O&M costs, and implementation schedule. As part of the project, Cannon has coordinated with and met the requirements for the following agencies: County of San Luis Obispo, Caltrans, Oceano Community Services District, Federal Aviation Administration, California Coastal Commission, and Union Pacific Railroad.

COUNTY OF SAN LUIS OBISPO, CALIFORNIA
PUBLIC WORKS DEPARTMENT
UTILITIES DIVISION

**PLANS FOR THE
OCEANO DRAINAGE IMPROVEMENT PROJECT
OCEANO, CA
CONTRACT NO. 300465**
To Be Supplemented By State Standard Plans Dated May, 2010.



Client Contact/Project Reference

Jeff Lee, PE, Civil Engineer, County of San Luis Obispo
1050 Monterey Street, Room 207, San Luis Obispo, CA 9341
☎ 805.781.5263 ✉ jlee@co.slo.ca.us

Front Street Revitalization Project

Oceano, California



In 2013, the County of San Luis Obispo finalized a plan to revitalize a portion of Highway 1 in downtown Oceano. The County hired Cannon to assist in turning the vision of the Oceano Revitalization Plan into a prioritized set of projects and developing preliminary engineering plans to facilitate the cost estimating and budgeting needed for implementation.

The project list included accessibility and safety improvements to pedestrian, bicycle, and vehicle mobility; pedestrian amenities along the downtown business district; landscape frontage improvements; and pilot community space-making projects. Cannon provided engineering and landscape design services as well as support of preliminary outreach efforts.

Cannon's project manager provided project coordination, design of complete and green street concepts, project presentations at public meetings, and coordination with partner agencies (Caltrans, Oceano Community Services District, SLO Regional Transit Authority, and Army Corps of Engineers).



Contract Amount: \$143,379
Construction Cost/Project Size: \$N/A
Project Dates (Design): February 2017 - May 2017
Project Dates (CM): Not In Construction



Client Contact/Project Reference

Genaro Diaz, Project Manager/Resident Inspector, County of San Luis Obispo
976 Osos Street, San Luis Obispo, CA 93408
☎ 805.781.5252 ✉ gdiaz@co.slo.ca.us

Water and Wastewater System Master Plans

Water and Sewer Master Plan Update, Nipomo Community Service District, Nipomo, California

The Nipomo Community Services District selected Cannon to update its Water and Sewer Master Plan. The District determined an update was necessary because of many significant changes including: an update to the LAFCO Sphere of Influence Study, a Supplemental Water Inter-tie Project, an update to the Wastewater Treatment Facility Master Plan, changes to the Sewer System Overflow Regulations, and several proposed large development projects. The scope of work included preparing water demand and sewer loading projections; water and sewer modeling and training; analysis of future water and sewer regulation evaluations; recommendations for projects; project identification and prioritization; hazard and security evaluation; O&M work forecast and staffing plan; and master plan report preparation.

Client Contact/Project Reference

Michael LeBrun, General Manager, NCS
148 South Wilson Street, Nipomo, CA 93444
☎ 805.929.1133 ✉ mlebrun@ncsd.ca.gov

Ritter Ranch Development Water System Master Plan, Los Angeles County Waterworks District 40, Palmdale, California

This golf course development encompasses approximately 10,625 acres composed of 7,200 residential homes, open space, recreational, school and commercial land use. The project included preparing a Water System Master Plan for the development and the surrounding neighboring developments such as City Ranch and Joshua Ranch. The Ritter Ranch development land use resulted in sizing over 20 potable water reservoirs, 9 pump stations, pressure reducing stations, supplement wells and miles of water transmission mains. The Master Plan was created using Los Angeles County Waterworks newly adopted water system design standards. In addition to sizing the newly required water system facilities, the existing LACWWD Water System was analyzed hydraulically to determine required improvements necessary to adequately supply the new development and its neighbors. The Water System Master Plan was used as the basis for the Water System Agreement between the developer and the Los Angeles Waterworks District.

Client Contact/Project Reference

Greg Even, Sr. Civil Engineer, County of Los Angeles
P.O. Box 1460, Alhambra, CA 91802
☎ 323.890.4036 ✉ GEven@dpw.lacounty.gov

Castaic Water System Master Plan, Newhall County Water District, Santa Clarita, California

Several members of Cannon's Project Team performed hydraulic modeling and calibration of the existing Castaic Water System. The Master Plan included hydraulic analysis for existing 2010 and 2020 water system conditions, recommending immediate and future water system improvements, providing cost estimates for improvements, and converting a large portion of the system to operate directly off of the Castaic Lake Water Agency's hydraulic gradient. The zone conversion minimized expenditures by eliminating the cost of operating and maintaining equipment for numerous pressure zones.

Client Contact/Project Reference

Stephen Cole, General Manager, Newhall County Water District
23780 North Pine Street, Santa Clarita, CA 91322
☎ 661.259.3610 ✉ scole@ncwd.org

Pinetree and Newhall Water System Master Plans, Newhall County Water District, Santa Clarita, California

This Water System Master Plan included hydraulic analysis for existing, 2010 and 2020 water system conditions, including recommending immediate and future water system improvements, providing cost estimates for improvements, and converting the system to time-of-use pumping.

Anaverde Development Water System Master Plan, Los Angeles County Waterworks District 40, Palmdale, California

This development includes 5200 residential homes, 42 commercial acres, 387 acres of parks and golf courses and open spaces consisting of 471 acres. Because Anaverde is one of several developments in the expanding Antelope Valley, this project was included in an overall Water System Master Plan for the area

including Ritter Ranch and Joshua Ranch. The development also includes a phase plan to be built over 10 years. Reservoir storage was calculated along with pumping capacities for a new pump stations. Several miles of pipelines were sized and routed to maximize the operation of the water system. Anaverde's improvement requirements to the existing water system were determined and outlined based on the development phasing plan. The hydraulic analysis required temporary pipelines be constructed during various phases of the project due to construction obstacles and limitations. The system was planned using LACWWD standards. The Water System Master Plan was used to finalize the Water System Agreement between developer and District.

Client Contact/Project Reference

Greg Even, Sr. Civil Engineer, County of Los Angeles
P.O. Box 1460, Alhambra, CA 91802
☎ 323.890.4036 ✉ GEven@dpw.lacounty.gov

Big Sky Ranch Water System Master Plan, Ventura County Waterworks District, Simi Valley, California

The project included sizing and locating two reservoir sites and determining required pump station capacities for a 2,680-acre residential community including 730 residential homes, 44 estate lots, and 13.5 acres of parks. A water system master plan and hydraulic analyses were performed to determine and design the backbone water system facilities and system pressure after a

four-hour maximum daily demand (MDD) and four-hour MDD plus Fire Flow (MDD+FF) of 1,500 gpm. The development includes two different pressure zones (1248 PZ and 1470 PZ), one pressure reducing and pressure sustaining station, and two pump stations. The hydraulic analyses demonstrated a water system satisfying all VCWWD requirements. Due to this upscale development, the exterior was designed by structural engineers and architects to resemble an Italian villa.

Client Contact/Project Reference

Terry Curson, PE, Camrosa Water District
7385 Santa Rosa Road, Camarillo, CA 93012
☎ 805.388.0226 ✉ TerryC@Camrosa.com

Pipeline Upgrade and Replacement Projects

Project	Size and Project Considerations
Water Main Replacement, Santa Monica, California	<ul style="list-style-type: none"> Installation of 12,500 LF of ductile-iron pipe Abandonment and removal of 12,500 LF of 6-, 8-, and 12-inch cast-iron and asbestos cement pipe
Distribution Main Replacement Project Norwalk, California *	<ul style="list-style-type: none"> Replacement of approximately 7,700 feet of water main Replacement of all house services, fire hydrants, and valves Coordination with affected residential and commercial properties
Water Main Replacement, Various Locations, Beverly Hills, California *	<ul style="list-style-type: none"> Replacement of more than 22,000 LF of 4-, 6-, 8-, and 10-inch water main
Stoneacre and Agnes Water Pipeline Design Projects, Apple Valley, California *	<ul style="list-style-type: none"> Replacement of more than 14,700 LF of pipeline Replacement of all house services, fire hydrants, and valves Coordination with affected residential and commercial properties
Rincon Phase 1 and Mondamon Water Main Replacement Projects Apple Valley, California *	<ul style="list-style-type: none"> Replacement of more than 6,400 LF of pipeline Replacements involved DIP, PVC, and steel pipes Multiple installations in different pressure zones
2013-2014 Water Main Replacement, Manhattan Beach, California	<ul style="list-style-type: none"> Replacement of more than 10,000 LF of 4- to 6-inch water main
Avenue K 36-Inch Transmission Main Phases 1 and 2, Los Angeles County Waterworks District 40, Lancaster, California	<ul style="list-style-type: none"> Design of final plans and specifications for 16,000 LF of 36-inch cement mortar lined and coated steel pipe
Dryden Street Water Main Replacement, Glendale Water & Power, Glendale, California	<ul style="list-style-type: none"> Design and engineering services for replacement of 6,400 LF of existing 4-inch cast-iron water mains with new 6- and 8-inch ductile-iron water mains Additional installation of 1,210 LF of new water mains
Leanna Drive Creek Crossing Water Line Replacement, Arroyo Grande, California	<ul style="list-style-type: none"> Replacement, via horizontal directional drilling, of 365 LF of 8-inch waterline crossing a creek
30th Street Waterline Upgrades, Paso Robles, California	<ul style="list-style-type: none"> 1,800 LF of 8-inch waterline
Sulphur Springs Road Waterline Upgrade, Paso Robles, California	<ul style="list-style-type: none"> 1,800 LF of 4-inch waterline

Well Projects

Project
Design and CM for Golf Course Well No. 7, Ventura, California
Design and CM for CVWD Well No. 16, Crescenta Valley, California
Design for Mound Well Nos. 2 and 3, Ventura, California
Equipping and Related Site Work for Well No. 21, Vernon, California
Upland Well System Integration, Solvang, California
Survey, Design, and Equipping for Well No. 4, Nipomo, California
Design and Equipping for Well No. 3, Lost Hills, California
Design for Seven New Wells - Arsenic Mediation Project, Delano, California
Survey, Design, Equipping, and CM for Tower Road Well, Paso Robles, California
Design for Wilson Well No. 2, South Pasadena, California
Design for M5E Wells, Los Angeles County Waterworks District, Los Angeles, California
Design for PXP Fresh Water Well, Lompoc, California
Installation and Replacement of PRS Valve Stations and a Two-Way Valve at Reservoir/Well No. 8, Lynwood, California
Design for Well 4-77 - Avenue K-8 & 32nd Street East, Lancaster, California
Design for 3.0 MG Terreno Vista Reservoir and K12 Utility Site, Los Angeles County Waterworks District, Antelope Valley, California



FY 2016/17 Sewer System Replacement Project

Norwalk, California



The City of Norwalk required a firm to evaluate and prepare rehabilitation recommendations each of the 38 sewer locations they identified as needing repair or rehabilitation. An initial review of locations revealed varying degrees of wear and the need for subsequent repair, including CIPP, spot repairs, and more substantial repair work.

In 2016, the City had selected Cannon to provide engineering services, including review and evaluation of eight damaged sewer locations within the City. Five of the eight locations were identified as good candidates for CIPP installation and the remaining three locations required spot repairs prior to CIPP.

The City retained Cannon to assist in the ongoing sewer system rehabilitation process and to complete additional review and evaluation of 30 additional locations identified by the City. Cannon prepared plans for 32 locations, and the remaining locations were included in the City's existing ongoing CIPP rehabilitation maintenance project.



Cannon's scope of services included review and evaluation of sewer locations using both CCTV summary information and videos to assess the condition of locations. Cannon used NASSCO PACP guidelines for evaluating the condition of each sewer reach, formulating rehabilitation methods for each location; preparing appropriate repair or rehabilitation recommendation methods, and providing preliminary construction costs. Additionally, we provided support with bid documentation for several critical repair locations, survey services, and utility research for additional sites.

Contract Amount: \$108,696
Construction Cost/Project Size: \$635,444
Project Dates (Design): July 2017 - Ongoing
Project Dates (CM): Not In Construction

Project Accomplishments

- Provided City with sewer locations in need of immediate repair.
- Assisted City with continued maintenance of safe sewer collection system and improved protection of human health and environment.
- Prepared a set of documents that the City was able bid out to complete their rehabilitation efforts for the fiscal year.



Client Contact/Project Reference

Julian Lee, PE, Utilities and Projects Manager, City of Norwalk
12700 Norwalk Blvd, Norwalk, CA 90650
☎ 562.929.5511 ✉ jlee@norwalkca.gov

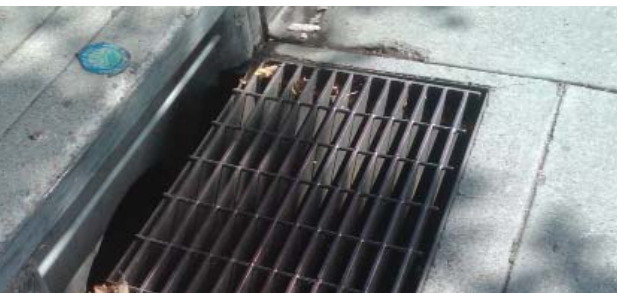
10-Year Sewer System Maintenance Program - Sewer Collection System Inspection and Maintenance

Solvang, California



The sewer collection system in Solvang included approximately **28 miles of pipe, 558 manholes, and 72 cleanouts**. With the protection of human health and the environment at the top of the list for the City of Solvang, the City initiated a project to assess the current state of the system and develop a long-term maintenance plan. Cannon provided engineering services to accomplish these goals.

Tasks included site visits, collecting data, manhole inspection, closed caption television (CCTV) of the interior of the sewers, reviewing and interpreting video and photograph data, and developing a maintenance program that would ensure longevity of City assets. The sewer system inspection involved a visual assessment of sewer manhole interiors, cleanouts, and sewer lines. Conditions of each were rated on a scale of 1 to 5, and maintenance work was prioritized according to the ratings. The rating system with which maintenance work was prioritized and preliminary cost data for the repairs was included in a 10-Year Maintenance Plan document that will be used to outline future sewer projects for the City.



Based on recommendations outlined in the 10-Year Maintenance Plan, Cannon evaluated the high priority sewer manhole deficiencies, recommended corrective action, and prepared construction documents for repair or replacement of those manholes. Several manholes were not located during the initial system wide inspection, so the initial phase of work was to locate missing or buried manholes and raise them to the surface or above grade.

Contract Amount: \$75,000
Construction Cost/Project Size: \$619,231
Project Dates (Design): Ongoing
Project Dates (CM): Not In Construction

Work included developing construction details for manhole rehabilitation, evaluating manholes to be repaired, preparation of a location map exhibit, and preparation of a bid schedule and supporting documents to be included in the bidding documents package. This work culminated in a set of documents which the City could rely upon when referencing typical manhole rehabilitation and/or construction; recommended actions and construction documents for the highest priority manholes was included.



Client Contact/Project Reference

Matt van der Linden, Public Works Director, City of Solvang
1644 Oak Street, Solvang, CA 93463
☎ 805.688.5575 x222 ✉ mattv@cityofsolvang.com

Technical Assistance for LIDI

Central Coast, California

In 2016/2017, the Low Impact Development Initiative (LIDI) worked with Central Coast municipalities to identify green infrastructure opportunities and create concept designs. Cannon provides technical assistance to the municipalities (Cities of San Luis Obispo, Morro Bay, Hollister, Paso Robles, Arroyo Grande, and County of San Luis Obispo) to develop these conceptual low impact development designs for existing CIP projects. Cannon also met with stormwater managers, CIP project managers, and other related staff to identify potential projects using existing CIP as a starting point. General/specific plans and priority wish-list retrofit ideas were included in the meeting, which looked to develop a range of project sizes.

Client Contact/Project Reference

Darla Inglis, Central Coast Regional Water Quality Control Board
895 Aerovista Place, Suite 101, San Luis Obispo, CA 93401

☎ 805.540.0145 ✉ darla@darlaelswick.com

Cannon developed green infrastructure concept designs for the following projects:

San Luis Obispo (City)

- Mitchell Park Bioretention
- Meadow Park Capture and Use
- Victoria Avenue "Village Street"
- California/Taft Roundabout Bioretention

San Luis Obispo (County)

- 2nd Street, Baywood Green/Complete Street

Morro Bay

- Cloisters Infiltration Basin
- Embarcadero Biofiltration Planter

Green infrastructure design deliverables included concept level sizing, plan view, and cross sections using the best available information as well as quantification of estimated stormwater volume and/or pollutant removal. Files included all drawings, images, and a master excel file (project summary, sizing, cost estimates, and performance calculations).

Technical Assistance for the Council of Watershed Health

Various Locations, California

As part of the California State Water Resources Control Board Prop 1 technical assistance to disadvantaged communities program, Cannon serves as a subconsultant to the Council for Watershed Health (CWH) providing technical engineering design to promote low impact development for improved stormwater management.

Client Contact/Project Reference

Eileen Alduenda, Council for Watershed Health
700 N. Alameda Street, Los Angeles, CA 90012

☎ 213.229.9959

The first in a series of efforts, Cannon is working on a project for the City of Sand City to carry out a watershed scale assessment of existing conditions, determine possible green infrastructure strategies, and develop conceptual LID project alternative projects that meet the City's objectives while also providing multiple community benefits.

Working with the City, the project team will carry out preliminary engineering and facilitate stakeholder meetings to discuss and assess the concepts, and to select a preferred alternative to carry forward for grant funding. Cannon will further develop the preferred alternative design (30% construction documents) including quantifying stormwater volume, rate, and/or pollutant removal benefits of LID facilities and developing an estimate of probable cost.

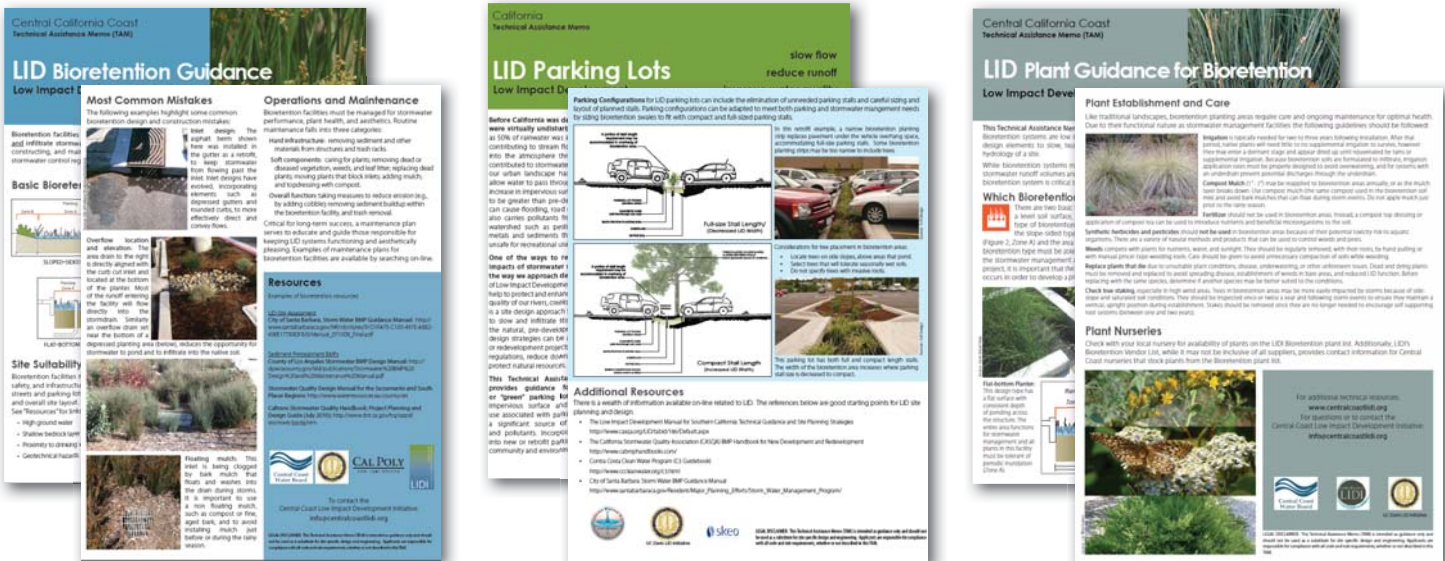
Low Impact Development Initiative (LIDI) Technical Support

Cannon's integrated design team provides green infrastructure technical assistance to a range of non-profit and municipal clients. Efforts include assisting municipalities to incorporate green infrastructure functions into existing CIP projects under a contract with the Central Coast Low Impact Development Initiative (LIDI); providing technical assistance to Disadvantaged Communities (DACs) to help them develop technically feasible stormwater projects for Prop 1 funding under a contract with the Council for Watershed Health (finalizing contract); and technical review of consultant plans submitted for Prop 84 stormwater projects on behalf of Ecology Action under a contract with LIDI.

Our team has played an important role raising the technical capacity in green infrastructure design across the Central Coast region through a long-term contract with LIDI. Contributions range from developing regional AutoCAD standard details for municipalities and consultant use, production of a series of Technical Assistance Memos (TAMs), providing training presentations on various aspects of Low Impact Development (LID) across the region, and providing design services and partnering with design teams on LID demonstration projects.

Technical Assistance Memos (TAMs)

Part of Cannon's support for LIDI includes production of Technical Assistance Memos (TAM). These documents target municipal staff, engineers, landscape architects, contractors and developers and provide guidance and special considerations when it comes to designing and implementing LID features into projects. TAM titles include LID Parking Lots, LID Bioretention Guidance, LID Plant Guidance for Bioretention, and LID for Contractors and Developers.



LID Trainings and Webinar Presentations

Cannon staff had provided ongoing support of LIDI's annual trainings, which have been carried out across the region and state-wide via webinar. Topics have included LID site design, bioretention design, bioretention materials, LID facility construction, and LID maintenance and operations.



Presenter: Pat Riddell

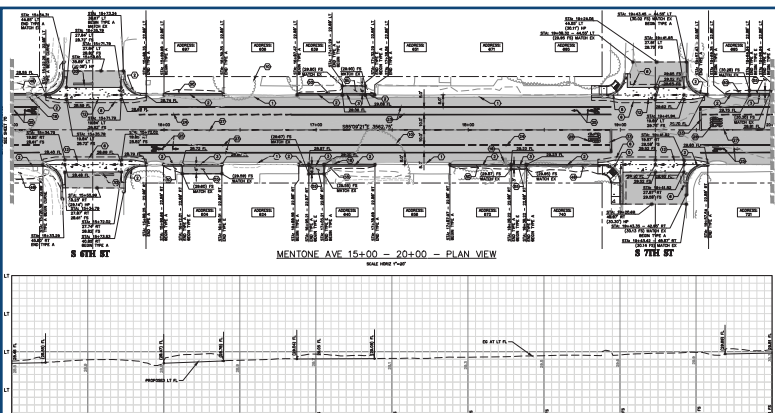
Measure K-14 Street Repair and Rehabilitation Program 2016-1

Grover Beach, California

This project included the design of intersection improvements to alleviate existing drainage/flooding issues using cross gutters as well as re-grading and re-aligning roadways.



Contract Amount: \$741,401
Construction Cost/Project Size: \$6.4M
Project Dates (Design): September 2016 - Ongoing
Project Dates (CM): Not Yet in Construction



The City of Grover Beach applied the lessons learned gathered by Cannon during the Measure K-14 Street Repair and Rehabilitation Program projects during fiscal year 2015 to create a more efficient and cost-effective design package for their newest 2016-1 project.

Cannon was selected to provide design, bidding, and construction phase support services for the project that included the following:

- Pavement rehabilitation for 5 miles of roadway infrastructure
- Analysis of existing ADA ramps for compliance
- Analysis of existing conditions to correct drainage/flooding issues
- Concept drawings for green/complete streets for Longbranch and Newport Avenues
- Public outreach
- Coordination with affected utility providers

Cannon prepared construction documents (plans, specifications, and cost estimates) for roadway design (plan and profile) for a new roadway structural section of approximately five miles; new compliant ADA curb returns; and drainage improvements, including cross gutters, existing wet utility improvements, traffic control, and striping improvements.



Client Contact/Project Reference

Gregory Ray, PE, Public Works Director, City of Grover Beach
154 South 8th Street, Grover Beach, CA 93433
☎ 805.473.4520 ✉ gray@grover.org

Design and Construction Management for 21st Street Green and Complete Improvements

Paso Robles, California



This project was the first of its kind in San Luis Obispo County

Historic runoff from the Mountain Springs Creek watershed along with subsequent development of the urban areas over the course of several decades resulted in frequent flooding, poor pavement condition, and inadequate facilities for bicycles and pedestrians. To improve the situation, the City of Paso Robles developed a conceptual design for a green/complete street and stormwater enhancement project along 21st Street between Vine Street and Riverside Avenue.

Cannon was selected to take the project from conceptual design through implementation. The project reduced the frequency and severity of street flooding, increased groundwater recharge, improved the quality of stormwater runoff reaching the Salinas River, removed sediment, reduced traffic speeds with traffic calming devices, shaded the street with trees, re-mapped the 100-year corridor, promoted infill and redevelopment, and provided Class II bike lanes.

Cannon's scope of work included the following services: landscape architecture; preliminary and final design; railroad right-of-way coordination; subconsultant coordination; preparation of plans, specification, and construction estimate; presentation of exhibits for public outreach; and construction management.

Contract Amount: \$560,00
Construction Cost/Project Size: \$2.7M
Project Dates (Design): June 2001 - January 2013
Project Dates (CM): April 2013 - November 2013



Awards and Recognition

- Outstanding Roads and Streets, League of California Cities
- Green Innovation Award, US Green Building Council
- Project of the Year for Transportation, APWA
- Sustainable Project of the Year, ASCE



“Cannon's construction managers, landscape architects, surveyors, and engineers bring a superior level of understanding and dedication to our projects.”

Client Contact/Project Reference

Ditas Esperanza, PE, Capital Projects Engineer, City of Paso Robles
1000 Spring Street, Paso Robles, CA 93446
☎ 805.237.3861 ✉ DEsperanza@prcity.com

Design and Construction Management for 12th Street Green Improvements

Paso Robles, California



12th Street was assigned funding for street repair as part of the recent half cent sales tax measure. It is designated as a Tier 2 street, which required more than a simple overlay for repair. The City of Paso Robles desired to redesign 12th Street to reduce future pavement maintenance costs, improve pedestrian pathways, and reduce stormwater flow. Cannon was selected to provide innovative design and construction management services to complete the following goals:

- Reduce the overall pavement width
- Replace impervious areas with low-maintenance pervious areas where feasible
- Provide two travel lanes
- Provide parking on both sides of the street
- Provide sidewalks on both sides of the street
- Provide ADA-compliant ramps and crosswalks
- Identify solutions to reduce stormwater flow
- Review potential traffic-calming features
- Identify the approximate location of existing street trees from an aerial survey, and identify the potential for additional street trees and/or ornamental or bio-swale plantings within Right-of-Way

Contract Amount: \$677,000
 Construction Cost/Project Size: \$2.2M
 Project Dates (Design): August 2013
 Project Dates (CM): October 2013 - November 2013

Cannon determined that a majority of the sidewalk and mature street trees were in good condition and prioritized incorporation of these existing street elements into three concept alternatives for the final design. Regional Water Quality Control Board (RWQCB) Post-Construction Stormwater Management Requirements were not applied to this project since Cannon resurfaced with in-kind material that did not expand the road footprint. Once the City selected a final design, Cannon prepared an updated scope and fee for the final design, O&M manual, and construction management services.



Client Contact/Project Reference

Ditas Esperanza, PE, Capital Projects Engineer, City of Paso Robles
 1000 Spring Street, Paso Robles, CA 93446
 ☎ 805.227.7276 ✉ DEsperanza@prcity.com

Blosser Bioretention Project

Santa Maria, California

Contract Amount: \$274,000
Construction Cost/Project Size: \$2M
Project Dates (Design): Summer 2015 - Spring 2018
Project Dates (CM): Spring 2018 - Summer 2018 (Est)



The City of Santa Maria, using funds provided by a grant from the State Water Resources Control Board and in partnership with the Central Coast Low Impact Development Initiative (LIDI), required improvements to an existing drainage and infiltration facility located along Blosser Road. Successful implementation of the project will result in reduced pollutant loads from stormwater leaving the site; incorporation of LID features for water quality treatment and infiltration of stormwater into native soils; increased groundwater recharge; a new public park space, and engagement with the local community to increase public understanding of the project's benefits and role in improving the health of the larger watershed. Cannon was selected to provide engineering and design, landscape architecture, irrigation, and public outreach services.



Client Contact/Project Reference

Roger Olds, Senior Civil Engineer, City of Santa Maria
110 South Pine Street, Suite 101, Santa Maria, CA 93458
☎ 805.925.0951 ✉ rolds@ci.santa-maria.ca.us

Sidewalk Infill and Crosswalk Improvements

Lompoc, California

Contract Amount: \$37,000
Construction Cost/Project Size: \$350,000
Project Dates (Design): June 2014 - June 2015
Project Dates (CM): June 2015 - November 2015



Thanks to the California Safe Routes to School (SR2S) Program, the City of Lompoc had the opportunity to help address issues of pedestrian safety at five local schools. The Sidewalk Infill and Crosswalk Improvement Project added new sidewalk and ADA compliant pedestrian curb ramps along various school routes, bulb-outs at major school crosswalks, and push-button-activated flashing beacons at a crosswalk in front of the Lompoc high school. The project added approximately 30,000 square feet of new sidewalk, 31 new ADA compliant curb ramps, and one set of rapid flashing beacons. Cannon was selected to provide survey, design, contract bidding assistance, and construction support services for this important community project. The scope of work included a site visit with the City to evaluate constraints; topographic survey of project limits for design; utility research; preparation of 60%, 90%, and Final construction documents; special provisions; an estimated opinion of probable construction costs; and responding to requests for information during bidding and construction.



Client Contact/Project Reference

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100 Civic Center Plaza, Lompoc, CA 93436
☎ 805.736.1261 ✉ c_dierling@ci.lompoc.ca.us

CDBG Curb Ramp Replacements Phases 1 & 2

San Luis Obispo, California

Contract Amount: \$195,000
Construction Cost/Project Size: \$750,000
Project Dates (Design): October 2010 - August 2011
Project Dates (CM): Unknown



The City's yearly maintenance program includes new construction, reconstruction, or modification of various curb ramps and crosswalks. Cannon was selected to provide civil engineering, design, and surveying services for the review and analysis of 47 ramp locations to determine whether the ramps complied with current ADA standards. Of the 47 ramps reviewed, 41 required redesign. The scope of work included initial site visits to evaluate existing slopes, obstructions, and drainage issues; a topographic survey of each location to collect and present data on grades, improvements, and Right-of-Way; and preparation of 50%, 90%, and Final construction documents. In addition, Cannon provided special provisions and an engineer's cost estimate at both the 50% and 90% design levels for recommended improvements. This project is part of the City's Community Development Block Grant (CDBG) Recovery Act projects.



Client Contact/Project Reference

Matt Horn, PE, City Engineer, City of Arroyo Grande
300 East Branch Street, Arroyo Grande, CA 93420
☎ 805.473.5400 ✉ mhorn@arroyogrande.org

Engineering Design Services for Fiscal Year 2013/2014 Street Improvement Projects

South Pasadena, California

Contract Amount: \$60,000
Construction Cost/Project Size: \$950,000
Project Dates (Design): July 2013 - August 2014
Project Dates (CM): August 2014 - April 2015



As part of its yearly street maintenance program, the City of South Pasadena contracted Cannon to provide surveying, geotechnical, and engineering services to alleviate significant surface damage to three separate local streets. Design improvements included asphalt concrete overlays; structural dig out and repairs; sidewalk, curb, gutter, and driveway apron repairs; new ADA compliant curb ramps; sewer and water improvements; and striping improvements. Cannon worked closely with the City to assist with public outreach as local residents have a large voice in requesting improvements along their frontage streets. Cannon's scope of services included preparation of project plans, specifications, and cost estimating; topographic survey; utility and as-built research; coordination with local schools, businesses, and residents; and construction engineering and support.

Client Contact/Project Reference

Paul Toor, PE, Public Works Director, City of South Pasadena
1414 Mission Street, South Pasadena, CA 91030
☎ 626.403.7240 ✉ ptoor@ci.south-pasadena.ca.us

2

Project Understanding, Approach, and Scope of Work

The Water Resource Reliability Program will help the Oceano Community Services District prepare for the future through the use of innovative supply strategies, as well as strengthen its distribution system to deliver those supplies.

Overview

The Oceano Community Services District (District) has a unique opportunity to make positive changes to the community as a whole. From enhancing groundwater infiltration, to restocking groundwater supplies, to upgrading the water distribution system, the Water Resource Reliability Program will collectively make a positive change to the community. Cannon understands those challenges, and is ready to help the District implement those changes.

We are committed to helping the District achieve its goals for this project. To do that, our team offers you the following key benefits:

1. Local “one-stop” team with extensive water distribution planning, evaluation, design, and implementation capabilities.
2. Knowledge of AWWA and DWR Water Audit and Leak Detection strategies.
3. In-house LID experts with local and direct knowledge of the Oceano area.
4. Extensive water infrastructure design and planning capabilities, including water mains, valving, metering, pump stations, reservoirs, injection and extraction wells, and all electrical and controls associated with these facilities.
5. Well established and good working relationships with the groundwater hydrogeologists directly involved in the regional groundwater planning studies.

Recycled Water Injection Wells

With the Recycled Water Planning Study underway for southern San Luis Obispo County, it is a prime opportunity for the District to investigate potential locations for installing an injection well to take advantage of the possibilities for indirect potable reuse. Not only would it supplement the water supply to the District, but it would also benefit the entire region by replenishing the groundwater basin.

Although other uses for the recycled water are proposed, including seawater intrusion barriers, injection or spreading

of the water to infiltrate into the ground would provide long term stability to the District. Banking the water for drought related emergencies could help provide the District the buffer to continue to supply its customers with unrestricted, uninterrupted service.

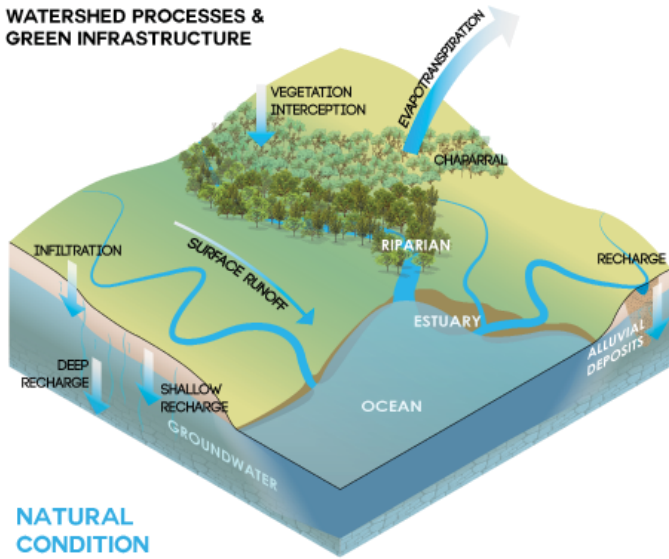
Several studies have been completed already, including the Groundwater Flow Analysis for the Arroyo Grande/Tri-Cities Mesa Area. The hydraulic modeling provided within this report is the foundation for the ability for the District to inject into the groundwater basin.

As part of the proposed study, our team will take a look at the District’s service area as a whole to identify areas where injection is feasible based on groundwater modeling. Three locations are identified in the RFP as follows:

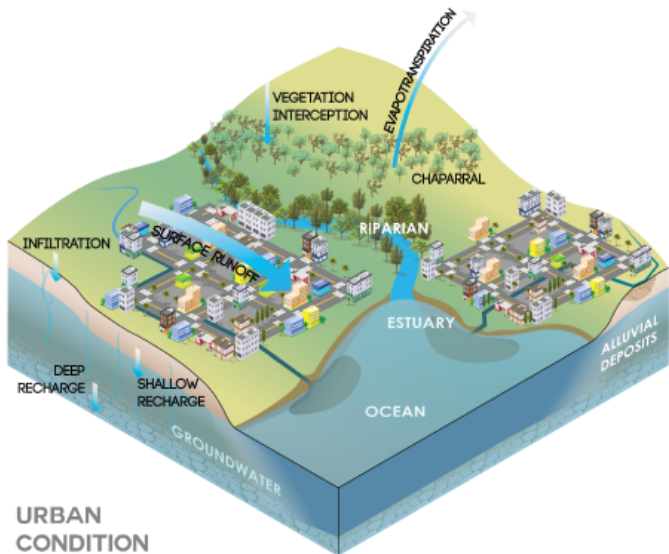
1. The District’s Water Yard
2. Halcyon Area
3. Arroyo Grande Creek Area

There are several advantages and disadvantages to each location, and each will be investigated, evaluated, and discussed in the Study Technical Memorandum. Our team will look at locations, distance from the proposed system, facilities required, land acquisition required, infiltration capabilities, recovery rates, extraction capabilities, and distribution requirements. Overall costs to construct the proposed facilities will be incorporated into the evaluation of each option and presented to the District in the Memo.

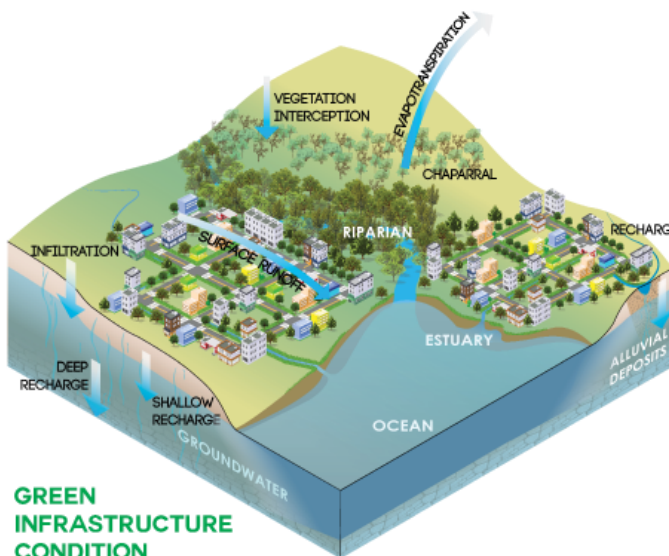
WATERSHED PROCESSES & GREEN INFRASTRUCTURE



NATURAL CONDITION



URBAN CONDITION



GREEN INFRASTRUCTURE CONDITION

Feasibility Study - Low Impact Development Plan

The community of Oceano is located at the lower end of the Arroyo Grande Creek Watershed. Despite high infiltration rates of the native soils, a pattern of urbanization with insufficient drainage facilities combined with the shallow topography and the physical drainage barriers created by the railroad, airport, and levees has resulted in regular flooding.

The patchwork of existing curb, gutter, and sidewalk not only compromises stormwater conveyance and management; it also impacts pedestrian safety, accessibility, and comfort for members of the community. The District seeks to address flooding issues and capture stormwater as a valuable resource to improve groundwater recharge, and has recognized the potential offered by low impact development (LID) strategies.

Successfully meeting the District's goals will require familiarity with the community of Oceano, an understanding of existing drainage conditions and projects already under way, existing lines of communication with County staff, and a high level of technical capacity in the area of low impact development design.

Updating the Oceano Drainage and Flood Control Study to incorporate a tool kit of LID strategies is a critical first step. Our team has been providing technical support for the Central Coast Low Impact Development Initiative (LIDI) since its inception. This has entailed developing bioretention details for the region, LID Technical Assistance Memos, regional LID trainings to raise technical capacity for municipal staff and consultants, and regional LID demonstration projects. We will apply this broad technical LID background to update the 2004 study.

Continued on the following pages

Carrying out an assessment of the existing infrastructure, identifying opportunities, and prioritizing potential LID projects across the community will require listening to stakeholders, thinking outside of the box, applying a long-term vision, bringing real technical know-how to the effort, and clearly communicating the functions and requirements of these technical systems to a diverse audience. Our team has worked with numerous municipalities to help them develop LID concepts for existing CIP projects.

Oceano Location Map



Sample Oceano Green Street Rendering

We will look at the larger Oceano community holistically, apply strategies from the LID tool kit to problem and opportunity areas, and develop an overlay of dispersed LID concept projects across the residential grid, summarizing the findings in the Draft LID Feasibility Study Technical Memo. We are well versed in communicating how these systems work in lay terms, and will bring our experience with construction and operations and maintenance of built LID systems in the region to support the District Board and stakeholders in decision making.

Long-Term Green Infrastructure Vision



Our familiarity working with the County of San Luis Obispo on the Oceano Drainage Improvement Project and the Front Street Revitalization Plan gives us the background and relationships with County staff that will streamline the coordination needed to support development of the agreements that will position the District to lead this effort.

These multiple projects will capture and infiltrate runoff, thereby increasing groundwater recharge and reducing cumulative flows and associated flooding impacts. Refinement of this portfolio of potential projects will be informed by projects specific performance calculations and cost estimates and presented in the Final LID Feasibility Study Technical Memo. We will apply our experience supporting the State Water Resources Control Board's technical assistance for Prop 1 effort to help Oceano develop compelling, technically correct LID concepts that incorporate multiple community benefits and meet the objectives of the Storm Water Grant Program Prop 1.

Please see the following pages for examples of Oceano LID Green Street Concepts

“**Cannon’s contributions** more than met the project objective for 21st Street, providing this well-traveled city street with improved flood control, innovative stormwater management, groundwater recharge, and pedestrian and bicycle safety.”

Ditas Esperanza, PE, Capital Projects Engineer, City of Paso Robles

Sample LID Green Street Concept 1



Sample LID Green Street Concept 2



Leak Detection and Management Plan

Because the District is in the process of re-evaluating the condition of its entire distribution system, water losses identified in the system can be addressed. The age of the system varies, but several reaches of pipe are well beyond 40 years old. The aging facilities are holding up fairly well considering their age, but a break or failure could result in significant damage and water loss.

The City’s goals for this project are clear. Repairing or replacing the at-risk elements of the system is a high priority for the District, and identifying those locations is critical to staging the work effort in the most efficient manner. An update to the 2009 CIP project list is instrumental in getting the funding and planning the work to rehabilitate the system in a timely manner.

Our approach to the work is as follows:

1. Determine system water losses through data collection and calculations
2. Identify areas for further investigation
3. Field investigation
4. Identify and rank existing and new CIP projects needed
5. Update existing CIP list with corresponding estimated budgets

It is understood that there may be a possibility for Proposition 1 funding for these future projects. Our team can provide documentation and/or exhibits as needed to help the District secure the funding to make these projects become a reality. Our design capabilities lend themselves very well to the preparation of design plans for these facilities as funding becomes available.

Challenges

Identifying water losses in the system will require creative solutions to several key challenges. The system is expansive, but isolating the system into smaller sections will allow the District to systematically determine where water losses are occurring. We have reviewed the leak detection data provided by CRWA that showed no significant water loss. We will try to isolate any additional testing to areas that are identified as being more susceptible to leaking.

Several issues have been discussed by our team, and we are ready to tackle them.

- **Meter Replacement** – A current meter replacement program is in place, and is expected to be complete within the next year. Approximately 2/3 of all meters have been replaced by the District, which will help tremendously in cutting down on water losses in the system. We will encourage the completion of this project as soon as possible to assist in our evaluation.
- **Asbestos and Polybutylene Piping** – Old and aging pipe is

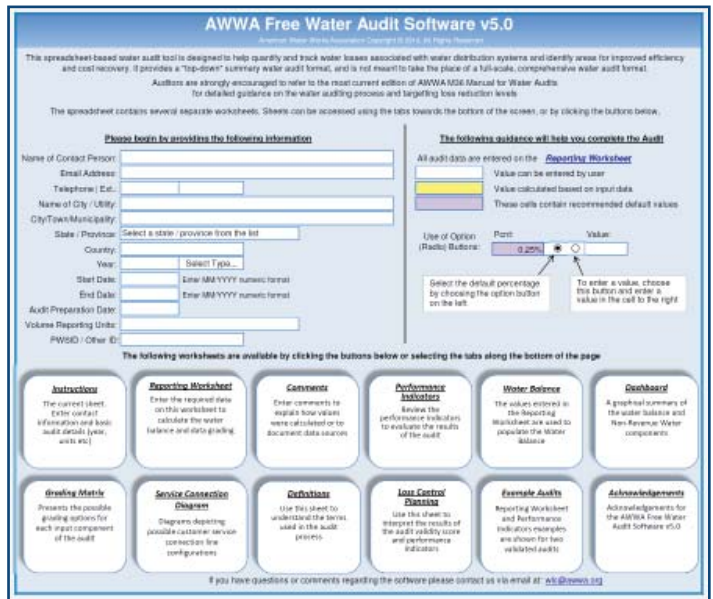
extremely susceptible to leaks and breaks. Asbestos pipe can become brittle and break. Polybutylene was prevalent in past years, but has also been shown to be extremely fragile. District staff have shared that this type of pipe is the number one culprit for breaks in the system. We will identify the neighborhoods that are more prone to these types of breaks, and determine if main replacements in these areas would minimize these issues.

- **Illegal Connections** – It is extremely hard to tell if illegal connections have been made, but during the field investigation, we will see if unmarked trench lines are visible, or if meters are missing to any residences. If so, corrective actions can take place to fix this issue.
- **Leaking Pipes and Valves** – Leaking pipes and valves can cause major damage if left unnoticed. During the field investigation, we will see if any areas appear to be more “green” with vegetation than surrounding areas. We will also look for sink holes or potholes that appear out of place that may indicate subsurface soil erosion. We will use the services of American Leak Detection in areas identified by our team that need additional investigation.
- **Unrecorded Uses** – Other unrecorded uses may occur in the day to day operations of the water system that are unmetered. We will work with operations staff to identify those locations, and determine if they can be metered, or estimated. We will also research the possibility of unmetered water was used for hydrant flushing, fire suppression, or other reasons.

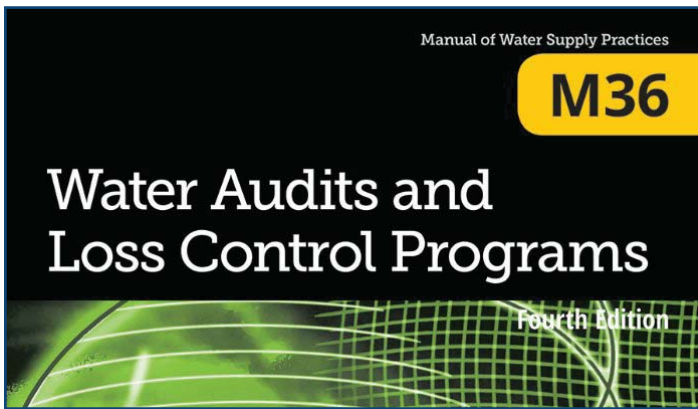
Comprehensive data gathering will allow our team to isolate the areas where water losses are occurring, and prepare a plan to rectify the situation.

The following reference documents are at our disposal to use to make our recommendations.

1. AWWA Water Audit Software v5.0



2. AWWA M36 - Water Audits and Loss Control Programs



3. DWR Water Audit Manual
4. DWR Water Conservation Guidebook No. 5 - Water Audit and Leak Detection Guidebook

Recommended CIP Updates

Twenty seven projects were identified in the 2009 Water Master Plan Update to improve fire flow and water quality. Some of these projects have been completed, while others are ongoing. Most of these projects were unfunded, and will still need to be completed. Once the leak detection investigation has been completed, we will prepare a revised list of projects, including the projects from the previous CIP list, and re-rank the priority of each. Some of the lower priority projects may move up in the ranks depending on the field findings.

If previous projects and new projects can be combined into one new project, the new project list will be updated accordingly to provide overall cost savings for the District. Our team has familiarized ourselves with the existing list and noted where the deficiencies are located.

“My experience with Cannon has been excellent. They provided proactive solutions and their design plans were thorough with minimal change orders. They have been responsive in their communications and diligent in delivering their work product complete and on-time.”

John Knipe, City Engineer
City of Westlake Village

Proj No.	Description	Priority	Existing	Proposed	Length
			in	in	ft
1-1	The Strand	1	4,6	10	2,100
1-2	Utah Ave	1	4	8	360
1-3	Norswing Dr	1	1,2	8	850
1-4	Pershing Dr	1	-	8	200
1-5	Norswing Dr Alley	1	4	8	500
1-6	14th St	1	2	8	380
1-7	16th St	1	2,4,6	8	940
1-8	Cienaga St Front St Area	1	2	8	1020
1-9	River Ave	1	-	8	480
1-10	Trinidad Dr	1	4	8	300
1-11	La Vista Ct	1	4	8	440
1-12a	Tank Inspections	1	-	-	-
1-12b	Tank Re-lining and Re-coating	1	-	-	-
2-1	Jetty Ave Alley	2	-	8	650
2-2a	Creek Road	2	-	8	960
2-2b	Railroad Crossing	2	-	8	170
2-3	Lancaster Dr	2	4	8	600
2-4	Laguna Dr Alley	2	4	8	120
3-1	Norswing Dr Loop	3	-	8	1,220
3-2	Rochelle Way Loop	3	-	8	200
3-3	Vista St Upgrade	3	2	8	480
3-4	Warner St Upgrade	3	2	8	480
3-5	Cienaga St Upgrade	3	2	8	470
3-6	21st St up-grade	3	2	8	320
3-7	South 4th St Upgrade	3	2	8	200
3-8	Security Ct Upgrade	3	2	8	180
3-9	Strand Upgrade	3	3	8	390

Coordinated Public Outreach Program (Optional Services)

The District recognizes the importance of sharing project information with the community and providing opportunities for stakeholders to engage in the process for each of the three proposed studies. Our team is experienced in incorporating meaningful engagement on our public projects. We understand that involving and educating stakeholders during the early stages of projects and at key milestones along the way is critical for achieving overall project success.

We are prepared to support the District through all phases of the public outreach process at the level determined by the District. Through the public meetings we have facilitated for the Oceano Revitalization Plan, we have gained familiarity with the community that will benefit our approach to outreach for these three proposed studies.

Our public outreach team is coordinated by Ms. Moody, Ms. Mills, and Ms. Herda. We are supported by a full-service Marketing department with experience in organizing events, and facilitating workshops and meetings. Our team also includes Spanish speaking outreach staff who can provide translations for materials and facilitate communications during public meetings. We will provide assistance as directed by the District to meet the public outreach objectives for the three proposed studies.



We can support the District in its public outreach effort by providing the following types of assistance:

- Educating stakeholders about the technical aspects of the project
- Presenting conceptual designs
- Facilitating break-out groups
- Summarizing community input for decision-makers
- Reporting back to the community and OCSD Board and stakeholders

Please see the following page for examples of some of the types of materials we can create to educate the community about the District's efforts



Examples of Public Outreach Materials

Mailers

Blosser Channel Project/Proyecto del Canal Blosser
Community Meeting/Reunión de la Comunidad

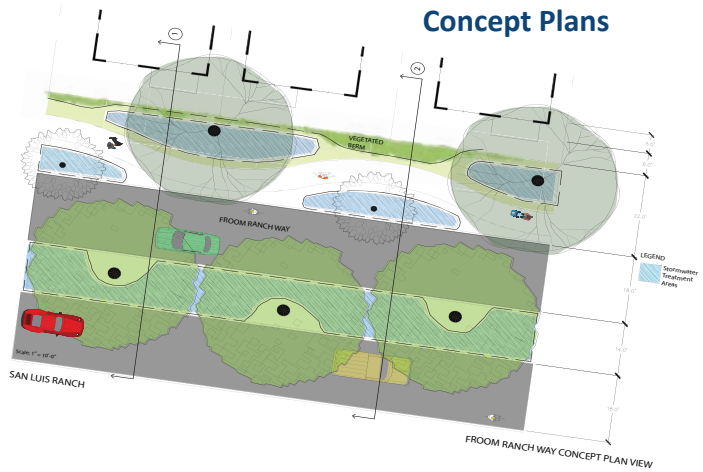
The City of Santa María received grant funding from the State Water Resources Control Board to enhance an existing stormwater channel located along Blosser Road between Canal Street and Atlantic Place. The project is an opportunity for the City to maximize use of the current channel to achieve multiple benefits for the community and the natural environment.

La Ciudad de Santa María recibió la financiación de subvención por el State Water Resources Control Board para mejorar el uso del Canal existente localizado a lo largo de Blosser Road entre Canal Street y Atlántic Place. El proyecto es una oportunidad de la Ciudad para maximizar el uso del canal y para conseguir beneficios múltiples para la comunidad y el ambiente natural.

When: November 12, 2015
Quando: el 12 de noviembre de 2015
6:00 - 6:30 Project Presentation/ Presentación del Proyecto
6:30 - ... Community Questions and Input Preguntas de la Comunidad y Aportación

Where: Santa María Public Library
Donde: Biblioteca del Publico de Santa María
Shepard Hall
421 South McClelland Street
Santa María

www.cityofsantamaria.org



Graphic Renderings



Planting Boards

BLOSSER INFILTRATION CHANNEL

Trees and Plants

CONCEPT TREE LIST

CONCEPT PLANTING LISTS

AREA #1 (BLOSSER) - [List of plants and trees]

AREA #2 (DETENTION) - [List of plants and trees]

Handouts

FRONT STREET REVITALIZATION, OCEANO - DRAFT IMPLEMENTATION PLAN

PRIORITY 1 PROJECTS

- Provide sidewalk upgrades to comply with ADA and provide safe and comfortable access for all users along the east side of Highway 1.
- Provide street lighting improvements along Highway 1 to improve pedestrian experience, includes adding poles and upgrading existing fixtures with LEDs.
- Evaluate pedestrian amenities such as benches, trash and recycling receptacles, bike racks, and planter boxes to enhance the user experience. Create a multi-purpose community space by closing 17th Street between Beach Street and Highway 1. Enclose the space with planters and provide replacement parking.
- Investigate options for installing a "parklet" pilot project where a street parking space is repurposed to create a people-oriented space with planters, seating, and bike parking. Possible locations include restaurant frontages and community meeting places.
- Enhance vacant frontage areas on the west side of Highway 1 with a split rail fence and low water use/low maintenance landscaping. Requires a partner commitment for long-term landscape maintenance.

PRIORITY 2 PROJECTS

- Investigate installing intersection bulb outs to reduce pedestrian crossing widths at 13th/Paso Robles Street, 15th/Ocean Street, Beach Street, Ocean Street, and 19th Street Intersections.
- Evaluate modifying existing street striping on 13th Street to provide proper width for Class II bike lanes.
- Evaluate removing existing striping on Paso Robles Street to emphasize "shared neighborhood street" character.
- Evaluate possible crosswalk locations at north end, central business district area, and south end of corridor.
- Evaluate addition of gateway signage on north and south entrances to define Oceano business district. North location behind back of walk between S. 4th Street and Belridge and south sign coordinated with possible south end crosswalk median.
- Investigate Ocean Street intersection including possible landscape island to create one-way entry and adding new angled parking stalls in existing ROW along south side of Ocean Street, potentially including permeable pavers for improved stormwater management.
- Evaluate need for a bus stop on Highway 1. Requires RTA approval.
- Investigate minor realignment of Railroad Street for improved, more perpendicular intersection with Highway 1 within County ROW.

PRIORITY 3 PROJECTS

- Evaluate feasibility of extending roadway edge and modifying existing striping to incorporate Class II bike lanes, bike buffers, parking, and sidewalk. Requires evaluation and may trigger major grading improvements and processing through Caltrans.

PRIORITY 4 PROJECTS

- Investigate possible locations for temporary community space where farmers' markets, crafts fairs, and community events can be held. Requires organization and implementation by local partners.

SCOPE OF WORK – RECYCLED WATER INJECTION WELL STUDY

Task 1 – Kick-off Meeting

We will orchestrate and attend a project kick-off meeting with appropriate personnel from the District. This meeting agenda will focus on the project understanding, team involvement, project constraints, and the anticipation of design development impediments. This meeting will also include a project introduction, review of background information and project scope, and outline of the project schedule. This meeting represents a key opportunity for representatives from the District to steer the consultant team and further clarify critical elements of the project scope.

Task 2 – Background Research and Data Gathering

We will review the existing reports completed and additional data compiled from known groundwater characteristics to profile the identified injection site locations. We will also work with the District's preferred hydrogeologist to establish areas where further investigation is needed.

Task 3 – Develop Evaluation Criteria

Using the information collected from the research conducted, we will review the specific needs of the District, and establish the parameters for selection of the ideal injection site. The future operating parameters and injection capabilities of the District will help determine what hydrogeologic features surrounding that area need further investigation.

Task 4 – Local Agency Coordination

Several local adjacent agencies are involved in the implementation of providing a sustainable groundwater basin in the Oceano area. As part of the ongoing research and advancement of recycled water, a regional plan must be investigated. Our team has worked with and has extensive relationships with all the agencies involved in this area, including:

- City of Pismo Beach
- City of Arroyo Grande
- City of Grover Beach
- Oceano Community Services District
- The County of San Luis Obispo
- South San Luis Obispo County Sanitation District

Coordination between all key agencies in this region is key to the success of the groundwater basin's health as a whole. As part of this project, keeping all the stakeholders informed of the District's research and progress on this project is essential. We will establish an open line of communication with all the agencies involved so that all input is considered in the plan for the basin.

Task 5 – Identify Injection Well Sites

Three sites were identified by the District for future recycled water injection locations:

1. The District's Water Yard
2. Halcyon Area
3. Arroyo Grande Creek Area

We will review these possible locations, and determine if other areas are more suitable for injection or spreading to replenish the groundwater basin. As we identify these locations, we will coordinate with the District to flush out the impediments associated with the proposed sites, so that a more realistic picture of possibilities is presented. An exhibit will be prepared showing these locations on a map.

Task 6 – Draft Well Site Study Technical Memorandum

Based on the technical findings of the gathered data and field investigations, as well as the discussions that identified project locations, the hydrogeologist team will prepare a draft Well Site Study Technical Memorandum. This will focus on the areas identified for possible groundwater replenishment, facilities associated with getting the water to the site, and costs associated with each location. Overall effectiveness of each option, as well as estimated costs for both facilities and dispersal into the basin will be discussed, with pros and cons of each option.

Task 7 – Draft Well Site Study Review Meeting

We will attend one meeting with OCS staff to review and discuss the Draft Well Site Study and findings.

Task 8 – Final Well Site Study Technical Memorandum

Based on the feedback from the previous task, we will prepare and submit a Final Well Site Study Technical Memorandum. The revised memo will incorporate review comments and provide the groundwork for the District to continue to pursue the option of groundwater replenishment.

SCOPE OF WORK – LOW IMPACT DEVELOPMENT

Task 1 – Kick-off Meeting

We will orchestrate and attend a project kick-off meeting with appropriate personnel from the District. This meeting agenda will focus on the project understanding, team involvement, project constraints, and the anticipation of design development impediments. This meeting will also include a project introduction, review of background information and project scope, and outline of the project schedule. This meeting represents a key opportunity for representatives from the District to steer the consultant team and further clarify critical elements of the project scope.

SCOPE OF WORK - LEAK DETECTION AND MANAGEMENT PLAN

Task 2 – Background Research and Field Data Gathering

We will review the existing data provided by the District and existing data compiled from previous Cannon projects in the area for incorporation into our base map. Additionally, we will conduct utility research with the public and private utility providers who have existing facilities within the proposed project areas and obtain record drawings and as-built information. We will use atlas and as-built information to map general locations of utilities.

A field walk will be conducted to evaluate potential LID improvements within the project limits. This windshield assessment will better identify alternative improvements for further consideration.

Task 3 – Draft Feasibility LID Study

We will develop a draft feasibility LID study including the following information:

- Definitions of the District's primary project objectives
- Definition of priorities for constructed improvements
- Preliminary hydrologic/hydraulic analysis
- Drainage management area calculations
- Potential LID project alternatives with exhibits
- Estimated construction costs
- Evaluation matrix for project alternatives

This draft study will provide the general concept of LID project alternatives to meet the District's goal for Proposition 1 ready project application. We will include recommendations on how additional projects could be phased in to increase groundwater recharge, reduction in non-point source pollution, and enhance the community with pedestrian and gathering areas.

Exhibits and sample renderings of improvements will be proposed within the document.

Task 4 – Draft Feasibility LID Study Review

We will attend one meeting with District staff to review and discuss the Draft Feasibility Study and findings.

Task 5 – Final Feasibility LID Study

Based on the feedback from the previous task, we will prepare and submit a Final Feasibility LID Study. The study will incorporate review comments and provide the groundwork for a final LID project to be implemented when funding is acquired.

The study will include information that can be extracted and used for future Proposition 1 Grant applications for stormwater.

Task 6 – Presentation of Feasibility LID Study to OCSD Board

We will attend a board meeting and present our findings and conclusions to the OCSD Board for final review and approval of the Feasibility LID Study.

Task 1 – Kick-off Meeting

We will orchestrate and attend a project kick-off meeting with appropriate personnel from the District. This meeting agenda will focus on the project understanding, team involvement, project constraints, and the anticipation of design development impediments. This meeting will also include a project introduction, review of background information and project scope, and outline of the project schedule. This meeting represents a key opportunity for representatives from the District to steer the consultant team and further clarify critical elements of the project scope.

Task 2 – Background Research and Data Gathering

We will review the existing data provided by the District and additional data compiled from residential water bills to establish typical water use within the system. We also will gather past water main break information to establish areas where further investigation is needed.

Task 3 – Develop Maps Identifying Leak Areas

Using the information collected from the research conducted, we will isolate specific areas within the District to conduct further investigations and try to isolate the areas where leaks may be occurring. An exhibit will be prepared showing these locations on a map, and what utilities within that area need further investigation.

Task 4 – System Loss Calculations

Unaccounted water losses will be reviewed and analyzed based on the existing data and recording procedures established by the District. Water production compared to water sales will be reviewed, as well as typical non-metered water uses. All possible use categories will be compiled and input into a spreadsheet to see where losses are occurring the most frequently. The following tools will be used to prepare the calculations:

- AWWA Water Audit Calculator
- DWR Water Audit Manual

Task 5 – Identify System Projects

Based on previous tasks, we will sit down with your staff and discuss the areas of concern, and identify the areas and projects that we would like to focus further attention on. As a united team, we will identify the previous CIP projects that have been completed, and prepare a revised list of additional projects that will be needed for strengthening the future of the distribution system.

Task 6 – Field Survey and Summary

Once the problem areas have been identified, we will perform a field survey to identify the areas of concern, and look for

indicators of existing leaks. We will assist in establishing a method to track and meter the losses identified, and prepare a recommendation to repair or quantify the continued loss issue.

Task 7 – Leak Detection Management Plan

Upon completion of the field investigation, we will compile the information gathered, and prepare a document that outlines the plans and procedures to identify further leaks and water loss. This plan can then be utilized by the District for future operating and/or training purposes. The following guidelines will be referenced as part of the plan:

- AWWA M36
- DWR Water Conservation Guidebook

Task 8 – Draft 2009 Master Water Study and CIP Addendum

Based on the technical findings of the gathered data and field investigations, as well as the discussions that identified system projects, we will prepare an addendum to the 2009 Water Master Plan Update, Chapter 9. This update will focus on previous projects that have yet to be completed, as well as future projects that will stabilize the distribution system, and prevent additional water losses in the system. Estimated construction costs will be applied to each project for future budgeting and planning purposes.

Task 9 – Draft CIP Addendum Review Meeting

We will attend one meeting with OCS D staff to review and discuss the Draft CIP Addendum and findings.

Task 10 – Final 2009 Master Water Study and CIP Addendum

Based on the feedback from the previous task, we will prepare and submit a Final CIP Addendum. The revised CIP list will incorporate review comments and provide the groundwork for the most critical projects to be implemented when funding is acquired.

Task 11 – Presentation of CIP Addendum to OCS D Board

We will attend a board meeting and present our findings and conclusions to the OCS D Board for final review and approval of the revised CIP project list.

“**Cannon** provided a creative design to overcome potential obstacles while keeping the project on-time and within budget. I would recommend Cannon without reservation.”

David Hix, Wastewater Division Manager, City of San Luis Obispo



PROJECT SCHEDULE
OCEANO COMMUNITY SERVICES DISTRICT
WATER RESOURCE RELIABILITY PROGRAM

CANNON
1050 Southwood Drive
San Luis Obispo, CA 93401
805.544.7404

ID	Task Name	Duration	Start	Finish	2018											
					21	1	11	21	1	11	21	1	11	21	1	11
1	Oceano Water Resource Reliability Program	2675 days	Fri 4/11/08	Thu 7/12/18												
2	Task 1 - Recycled Water Injection Well Study															
3	Project Kickoff Meeting	1 day	Mon 1/1/18	Mon 1/1/18												
4	Background and Data Gathering	2 wks	Tue 1/2/18	Mon 1/15/18												
5	Develop Evaluation Criteria	2 wks	Tue 1/2/18	Mon 1/15/18												
6	Local Agency Coordination	4 mons	Tue 1/2/18	Mon 4/23/18												
7	Identify Injection Well Sites	2 wks	Tue 1/16/18	Mon 1/29/18												
8	Draft Well Site Study Technical Memorandum	6 wks	Tue 1/30/18	Mon 3/12/18												
9	District Review of Well Site Draft Study	3 wks	Tue 3/13/18	Mon 4/2/18												
10	Draft Well Site Study Review Meeting	1 day	Tue 4/3/18	Tue 4/3/18												
11	Final Well Site Study Technical Memorandum	2 wks	Wed 4/4/18	Tue 4/17/18												
12	Task 2 - Low Impact Development Plan															
13	Project Kickoff Meeting	1 day	Mon 1/8/18	Mon 1/8/18												
14	Background Research and Field Data Gathering	4 wks	Tue 1/9/18	Mon 2/5/18												
15	Local Agency Coordination	4 mons	Tue 1/9/18	Mon 4/30/18												
16	Draft Feasibility LID Study	6 wks	Tue 2/6/18	Mon 3/19/18												
17	District Review of Draft Feasibility LID Study	3 wks	Tue 3/20/18	Mon 4/9/18												
18	Draft Feasibility LID Study Rreview Meeting	1 day	Tue 4/10/18	Tue 4/10/18												
19	Final Feasibility LID Study	3 wks	Wed 4/11/18	Tue 5/1/18												
20	Presentation of LID Study to OCSD Board	1 day	Wed 5/2/18	Wed 5/2/18												
21	Task 3 - Leak Detection and Management Plan															
22	Project Kickoff Meeting	1 day	Tue 1/2/18	Tue 1/2/18												
23	Background Research and Data Gathering	4 wks	Wed 1/3/18	Tue 1/30/18												
24	Develop Maps Identifying Leak Areas	3 wks	Wed 1/31/18	Tue 2/20/18												
25	System Loss Calculations	3 wks	Wed 1/31/18	Tue 2/20/18												
26	Identify System Projects	2 wks	Wed 2/21/18	Tue 3/6/18												
27	Field Survey and Summary	2 mons	Wed 3/7/18	Tue 5/1/18												
28	Leak Detection Management Plan	4 wks	Wed 2/21/18	Tue 3/20/18												
29	Draft 2009 Master Water Study and CIP Addendum	4 wks	Wed 5/2/18	Tue 5/29/18												
30	District Review of Water Study and CIP Addendum	3 wks	Wed 5/30/18	Tue 6/19/18												
31	Draft CIP Addendum Review Meeting	1 day	Wed 6/20/18	Wed 6/20/18												
32	Final 2009 Master Water Study and CIP Addendum	3 wks	Thu 6/21/18	Wed 7/11/18												
33	Presentation of CIP Addendum to OCSD Board	1 day	Thu 7/12/18	Thu 7/12/18												

Task	Summary	External Milestone	Inactive Summary	Manual Summary Rollup	Finish-only	Progress	Deadline
Split	Project Summary	Inactive Task	Manual Task	Manual Summary	Progress	Deadline	
Milestone	External Tasks	Inactive Milestone	Duration-only	Start-only	Progress	Deadline	Start-only

3

Billing Rate Schedule and Cost Proposal*

Accounting Specialist	\$ 45 - \$ 65
Administrative Assistant I - IV	\$ 50 - \$ 70
Assistant Resident Engineer	\$ 130 - \$ 143
Associate Construction Engineer	\$ 110 - \$ 120
Associate Engineer	\$ 140 - \$ 175
Associate Landscape Architect	\$ 135 - \$ 145
Associate Planner	\$ 140 - \$ 150
Automation Analyst	\$ 100 - \$ 110
Automation Design Engineer	\$ 110 - \$ 120
Automation Specialist	\$ 135 - \$ 145
Automation Technician	\$ 95 - \$ 105
Business Development Associate	\$ 120 - \$ 130
CADD Tech	\$ 85 - \$ 95
CADD Manager	\$ 100 - \$ 110
Chief Planner	\$ 155 - \$ 165
Chief Surveyor	\$ 175 - \$ 195
Clerical Assistant	\$ 50 - \$ 65
Construction Admin Assistant	\$ 85 - \$ 90
Construction Coordinator	\$ 90 - \$ 110
Construction Engineer	\$ 165 - \$ 175
Construction Inspector	\$ 90 - \$ 125
Construction Manager	\$ 135 - \$ 165
Controller	\$ 70 - \$ 110
Design Engineer	\$ 110 - \$ 125
Electrical Design Engineer	\$ 120 - \$ 130
Engineer Tech	\$ 90 - \$ 100
Engineering Assistant I - II	\$ 70 - \$ 90
Expert Testimony (Deposition/Trial)	\$ 250 - \$ 450
Forensics Engineer I - III	\$ 230 - \$ 280
Forensics Office Administrator	\$ 150 - \$ 175
Forensics Research & Investigation	\$ 300 - \$ 350
Forensics Survey Tech I - III	\$ 230 - \$ 280
Forensics 2-Man Survey Crew	\$ 350 - \$ 375
GIS Specialist	\$ 140 - \$ 150
GIS Tech	\$ 115 - \$ 125
Grant Funding Manager	\$ 125 - \$ 140
I&E Construction Coordinator I - II	\$ 90 - \$ 110
I&E Services Coordinator	\$ 80 - \$ 90
Information Systems Admin I - II	\$ 70 - \$ 100
Land Surveyor I - V	\$ 140 - \$ 180
Landscape Architect	\$ 105 - \$ 115
Landscape Architect CADD Tech I - II	\$ 55 - \$ 65
Landscape Designer I	\$ 70 - \$ 80
Lead Automation Analyst	\$ 116 - \$ 126
Lead Automation Specialist	\$ 147 - \$ 157
Lead Automation Technician	\$ 105 - \$ 115
Lead Designer	\$ 100 - \$ 118
Marketing Coordinator	\$ 60 - \$ 120
Marketing Director	\$ 140 - \$ 180
Office Engineer	\$ 120 - \$ 130
Planner I - IV	\$ 80 - \$ 115

Planning Assistant I - II	\$ 55 - \$ 70
Principal Construction Engineer	\$ 185 - \$ 195
Principal Designer	\$ 105 - \$ 129
Principal Engineer	\$ 160 - \$ 195
Programmer I - II	\$ 140 - \$ 165
Project Coordinator I - IV	\$ 85 - \$ 125
Project Designer I - IV	\$ 80 - \$ 120
Project Engineer	\$ 120 - \$ 145
Project Manager / Sr. Principal	\$ 210 - \$ 220
Receptionist	\$ 50 - \$ 65
Resident Engineer	\$ 155 - \$ 165
Sr. Associate Engineer	\$ 150 - \$ 175
Sr. Automation Analyst	\$ 126 - \$ 136
Sr. Automation Specialist	\$ 163 - \$ 170
Sr. Automation Technician	\$ 126 - \$ 136
Sr. CADD Tech	\$ 90 - \$ 110
Sr. Construction Engineer	\$ 175 - \$ 195
Sr. Construction Manager	\$ 175 - \$ 200
Sr. Consultant/Director	\$ 163 - \$ 250
Sr. Consultant, Public Admin/Finance	\$ 155 - \$ 165
Sr. Environmental Planner	\$ 153 - \$ 165
Sr. Land Surveyor	\$ 180 - \$ 190
Sr. Landscape Architect	\$ 153 - \$ 163
Sr. Planner	\$ 153 - \$ 163
Sr. Principal Designer	\$ 110 - \$ 139
Sr. Principal Engineer	\$ 175 - \$ 230
Sr. Project Designer	\$ 105 - \$ 130
Sr. Project Engineer	\$ 130 - \$ 150
Sr. Resident Engineer	\$ 165 - \$ 175
Structures Representative	\$ 145 - \$ 155
Survey Engineering Assistant I	\$ 85 - \$ 95
Survey Manager	\$ 180 - \$ 190
Survey Technician I - VI	\$ 90 - \$ 150
Technician	\$ 115 - \$ 125
Technical Writer	\$ 80 - \$ 120
3D HDS Data Modeling I - III	\$ 95 - \$ 125

Survey Crew Rates - Regular

One-Man Field	\$ 130 - \$ 205
Two-Man Field	\$ 185 - \$ 285
Three-Man Field	\$ 245 - \$ 360
One-Man UMO - HDS	\$ 155 - \$ 220
Two-Man UMO - HDS	\$ 238 - \$ 285
Three-Man UMO - HDS	\$ 350 - \$ 375

Survey Crew Rates - Prevailing Wage

One-Man Field	\$ 155 - \$ 220
Two-Man Field	\$ 238 - \$ 325
Three-Man Field	\$ 285 - \$ 425

Electrical - Prevailing Wage

Electrician	\$ 110 - \$ 165
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All of the above hourly rates include all direct labor costs and labor overhead, general and administrative expenses and profit.

If the client requests, or the client's schedule requires work to be done on an overtime basis, a multiplier of 1.5 will be applied to the above rates for weekdays and 2.0 for weekends and holidays.

Other Direct Charges

In-House Reproduction

Printing/Copies 8 ½ x 11	\$0.05 per page	Black Line Plots	\$2.00 per page
Printing/Copies 11 x 17	\$1.00 per page	Color Plots	\$5.00 per page

Outside Reproduction Cost + 15%

Travel and Related Subsistence Cost + 15%
Truck or Field Vehicle \$80.00 per day
Mileage Reimbursement IRS Rate per mile

CAD and Simulation Software \$15.00 per day
Automation & Electrical Materials Cost + 25% (+tax)

Subconsultant Fees Cost + 10%

All direct expenses, such as special equipment, shipping costs, travel other than by automobile, parking expenses, and permit fees will be billed at the actual cost plus 15%.

If the client requests, or the client's schedule requires work to be done on an overtime basis, a multiplier of 1.5 will be applied to the stated rates for weekdays for daily hours in excess of 8 as well as weekends and a multiplier of 2.0 for daily hours in excess of 12 and holidays.

If the client requests field services to be provided outside of normal working hours (between 6:00 p.m. and 6:00 a.m.), a multiplier of 1.5 will be applied to the stated rates.

Survey Crews and Automation Field staff are billed portal to portal, and mileage charges are included in the hourly rate. A minimum charge of 4 hours will be charged for any Automation Field Service calls outside of normal working hours (between 6:00 p.m. and 6:00 a.m.).

The stated rates are subject to change, typically on an annual basis.





Reliable Responsive Solutions

Cannon

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