October 22, 2024

Allison Medley
Madera County Department of Water and Natural Resources
200 W. 4th Street, Suite 3100
Madera, CA 93637

Dear Ms. Medley:

Wood Rodgers, Inc. (Wood Rodgers) is responding to the request from Madera County Department of Water and Natural Resources (County) for statements of qualifications to provide engineering services for FEMA MAP CHANGES APPLICATIONS & FLOOD ELEVATION CERTIFICATES.

It is Wood Rodgers' understanding that the County seeks to pre-qualify consultants with FEMA expertise and the County will post (indefinitely) the qualified consultant list on the County's website for reference by residents. Based on this understanding, Wood Rodgers assumes that the list is informational only and meant to be helpful to Madera County citizens who may enlist the services of a professional engineering firm to identify base floodplain elevations. That being said, Wood Rodgers seeks to be placed on this qualified list with the following contact information:

Michael C. Nowlan, PE, CFM
Principal Engineer
Wood Rodgers, Inc.
3301 C Street, Building 100B
Sacramento, CA 95816
Phone: (916) 341-7760
Email: mnowlan@woodrodgers.com

Wood Rodgers proposes to provide FEMA application preparation services to residents, based on mutually agreed upon fees, schedules, rates and scopes of work applicable to each unique project, to be negotiated during the scoping process. Flood elevation certificate preparation is not included.

Experience and Qualifications

Michael is a licensed civil engineer in the state of California (License Number 55954) with 35 years of experience in the planning and detailed study of complex drainage and flooding systems dealing with urban pipe networks and drainage infrastructure, regional flood control levees and large river systems, statistical and empirical analysis of stream flow hydrology, design frequency rainfall, dam break analysis, and floodplain mapping. Mr. Nowlan is an expert in applied hydrology and hydraulics using and directing others in numerical simulation programs such as HEC-HMS, SacCalc, HEC-RAS, XP-SWMM, EPA-SWMM, InfoWorks ICM, FLO-2D, MIKE 11/21 and MIKE FLOOD, as well as legacy programs such as HEC-1, HEC-2 and UNET. Michael regularly utilizes GIS to assist in developing and reviewing simulation results and authoring report documentation. In addition to work

duties Michael currently serves as a member of the Board of Directors for the Floodplain Management Association after serving as Chair in 2022 and 2023 (resume attached).

Michael has been successfully completing various applications for Letters of Map Revision (Conditional and Final) to modify FEMA's mapping for the past 25+ years across the California Central Valley, primarily in Sacramento Couty, Yolo County, and Butte County. He has been performing detailed dynamic flood studies and storm drainage master planning work for public agencies including the City of Sacramento, the City of Winters, the City of Woodland, the City of West Sacramento, the County of Yolo and the County of Sacramento. These studies and plans regularly include detailed hydrologic and hydraulic modeling to determine the extents of existing floodplains, base flood elevations, and to determine the impacts of future development. Such studies identify required facilities for mitigating flooding impacts, including detention basins, pump stations, channels and storm drain networks. Michael also supports private development interests and is regularly contracted to perform flood studies for development projects, which often include FEMA mapping revisions to remove developable areas from floodplains/floodways.

The process for revising FEMA's maps for various projects typically begins with a scoping phase where Michael, or staff working under his direction, would meet with the individual(s) requiring assistance to identify the mapping needs. Once the project location and extents are identified, preliminary research will identify the current floodplain modeling and mapping affecting the project area. Wood Rodgers will develop a plan for completing a map revision application and submit the plan/cost to the individual(s) for their contracting approval, based on FEMA's current software acceptance. Once under contract, Wood Rodgers would prepare the application and submit the application and supporting documentation to the County for its review and approval/acknowledgement on the appropriate form, in either digital or paper form, whichever is preferred. Wood Rodgers is very familiar with the FEMA application review process and dealing with FEMA's contracted reviewers, and responding to technical comments in the most efficient manner. The RFQ did not request specific references, but these can be provided upon request.

We look forward to hearing from you regarding the acceptance of our qualifications.

Sincerely,

Michael C. Nowlan, P.E., CFM
Principal, Wood Rodgers, Inc.

Michael Nowlan, PE, CFM

PROJECT ROLE
Will Vary

CLASSIFICATION
Senior Engineer II

EDUCATION
BS, Civil Engineering, Worcester Polytechnic Institute, Worcester, MA, 1989

REGISTRATIONS/CERTIFICATIONS
Professional Engineer, CA #55954; Certified Floodplain Manager, US-08-03529

YEARS OF EXPERIENCE
- 35 years total
- 22 years with Wood Rodgers

Michael Nowlan is a professional civil engineer with 35 years of experience focused on the planning and detailed study of complex drainage and flooding systems dealing with urban pipe networks and drainage infrastructure, regional flood control levees and large river systems, statistical and empirical analysis of stream flow hydrology, design frequency rainfall, dam break analysis, and floodplain mapping. Michael is an expert in applied hydrology and hydraulics using and directing others in numerical simulation programs such as HEC-HMS, SacCalc, HEC-RAS, XP-SWMM, EPA-SWMM, InfoWorks ICM, FLO-2D, MIKE 11/21 and MIKE FLOOD, as well as legacy programs such as HEC-1, HEC-2 and UNET. Michael regularly utilizes GIS to assist in developing and reviewing simulation results, and authoring report documentation. In addition to work duties Michael currently serves on the Board of Directors for the Floodplain Management Association.

RELEVANT PROJECT EXPERIENCE

Cache Creek Flood Modeling – Woodland, CA | Oversaw all technical aspects and managed the development of this project for the city of Woodland to provide a detailed 2D MIKE FLOOD model to define the spill and levee removal floodplain envelope south of
Cache Creek, affecting over 6,000 properties within the city of Woodland and Yolo County.
Wood Rodgers has evaluated multiple scenarios for the City on a regional and localized scale and is submitting the model and associated mapping to Federal Emergency Management Agency (FEMA) under a Letter of Map Revision application, which was processed as Physical Map Revision.

Sierra Valley FEMA 100-Year Floodplain Evaluation and Delineation, Department of Water Resources – Sierra County and Plumas County, CA | Directed and managed the development of the HEC-HMS hydrology for the 588-square mile watershed study accounting for accumulated snow, peak rainfall distributions, snow melt contributions, storm centering, areal reductions, soils/infiltration, routing and other factors. The hydrology report described the processes of gathering and analyzing all published references, methodologies, and gage data for establishing the 100-year peak flows, volumes, and timing contributions from steeper peripheral tributaries and valley portions of the watershed. Hydraulic models, including HEC-RAS and FLO-2D were utilized for routing and storage contributions to peak flow in critical parts of the valley. The ultimate client for this study is the Federal Emergency Management Agency.

Upper Laguna Creek Letter of Map Revision – Sacramento County, CA | Managed HEC-RAS and HEC-1 analysis and developed the supporting documentation, mapping and application forms for a request for Letter of Map Revision to revise existing conditions flooding on the Federal Emergency Management Agency's published maps along Upper Laguna Creek.

City of Sacramento Combined Sewer System – Sacramento, CA

Managed and directed InfoWorks ICM flood modeling of the combined sewer system (CSS), which evaluated the 100-year flooding conditions in the greater downtown Sacramento area. The modeling included the entire one-dimensional pipe network with underground storage and pumping, combined with two-dimensional overland flood modeling of the ground surfaces (streets/neighborhoods) over the entire CSS area. The modeling and supporting documentation, including custom tutorials for

future revisions to the modeling was provided to the City in preparation for a future city-wide Letter of Map Revision application to FEMA.

Florin Creek Multi-Use Basin LOMR – Sacramento, CA

Managed and directed the hydrologic and hydraulic modeling and prepared the application for a Letter of Map Revision to FEMA for the implementation of the Florin Creek improvements downstream of Highway 99. The LOMR effort combined channel improvements along Florin Creek performed by the US Army Corps of Engineers, together with the installation of a detention basin along the north side of Florin Creek in Florin Creek Park. The detention basin was designed by Wood Rodgers under the Sacramento Area Flood Control Agency, diverting flow from Florin Creek via a weir into the multi-cell storage basin, and pumped back into the creek after peak flooding. The project involved close coordination with the City of Sacramento and County of Sacramento to obtain finished floor surveys and remove numerous structures from the floodplain.

Bear River North Levee Improvement Project – Yuba, Sutter and Placer Counties, CA | Provided quality assurance review and oversight of the development of HEC-RAS, MIKE11 and FLO2d modeling and analysis. He developed supporting documentation and application for a Conditional Letter of Map Revision for future construction and certification of the north levee of the Bear River.

FEMA Flood Insurance Studies and Restudies – Various Locations, CA and AZ | Managed Flood Insurance Studies and Restudies for FEMA, overseeing others and personally performing detailed hydrologic and hydraulic modeling/analyses of several major creeks and streams involving complex split flow evaluations, embankment failure/inundation scenarios and spill/storage/attenuation effects for the entire American Valley in Plumas County, California. Similarly, he conducted Flood Insurance Studies to establish FEMA floodplains for Robbers Creek in Lassen County, California; Grayson and Murderers Creeks in Contra Costa County, California; North Davis Drain Overflow for the City of Davis, California; and Bouse Wash in Bouse, Arizona.

California Department of Water Resources (DWR), Central Valley Floodplain Evaluation and Delineation Program (CVFED) | DWR retained the services of Wood Rodgers to provide engineering support services for floodplain delineation within the Lower Sacramento River Basin. For this seven-year, $38 million contract, performed the role of One-Dimensional and Two-Dimensional Hydraulic Modeling Quality Control Manager for modeling and floodplain mapping, duties which included:

- Project management planning and implementation, including development of project scoping documents, budgets, and schedules for one-dimensional and two-dimensional hydraulic models.
- Preparation of work plan documents, quality control plan documents, and safety plans required prior to starting work.
- Review of existing hydraulic models, calibration data, as-built record drawings, and other existing information to support hydraulic model development.
- Providing hydraulic engineering insight to support secondary post-processing of LiDAR datasets.
- Quality Control review and troubleshooting of intermediate and final development of twelve two-dimensional floodplain hydraulic model study areas (using FLO-2D and TUFLOW) covering over 2,600 square miles of floodplain.
- Collaboration with hydraulic modeling software vendors to address project specific issues, including the development and testing of new features.
- Preparation of technical engineering reports.
- Quality Control review and integration of preliminary US Army Corps of Engineers (USACE) Central Valley Hydrology Study input for defining 200-year coincident conditions, including providing feedback regarding identification of hydrologic system definition improvements.
- Implementation of internal quality control procedures and coordinating reviews with DWR's Independent Quality Assurance Review team experts.
- Supervision and Quality Control of multiple two-dimensional floodplain simulations using FLO-2D and TUFLOW to support preparation of informational maps representing the 200-year floodplain in the communities of Yuba City, Davis, Sacramento, and West Sacramento.
- Quality Control Review and results presentation of final Lower Sacramento River system modeling and combined Upper and Lower Sacramento River HEC-RAS network modeling, including defining levee breach parameters, performing floodplain validation reviews using FLO-2D results and HEC-RAS storage area simulations.

Dead Horse Slough Flood Control Facilities – City of Chico, CA | For this Hignell Development Group project, Michael managed and performed hydraulic analysis for the design of flood control facilities associated with development along Dead Horse Slough in the City of Chico/Butte County area, including two-dimensional flow analyses. He submitted a Conditional Letter of Approval from FEMA and a Floodway Encroachment Permit application to the California Department of Water Resources.

Madison Community Flood Mitigation Project – County of Yolo, CA | Managed and directed all existing conditions HEC-RAS 2D, and HEC-HMS modeling efforts to update the best available flood modeling to reflect Yolo County design rainfall and localized routing conditions near Madison, CA. After establishing the baseline conditions for a spectrum of storm frequencies, Wood Rodgers worked closely with Yolo County staff to develop strategic improvements to help reduce flooding within the Town of Madison, while controlling water surface elevation increases within targeted areas outside of the town. The County worked closely with other local and state agencies to implement the improvements in 2019.

Knights Landing Drainage Analysis Project – County of Yolo, CA | Currently managing and directing hydrologic (HEC-HMS) and hydraulic (HEC-RAS 2D) analysis to assess flooding within the town of Knights Landing; including qualitative assessments for groundwater and levee seepage influencing surface flooding. The project has included gathering field data through reconnaissance visits and field surveys of underground culverts and channels. Once groundwater influences are estimated it will be coupled with local rainfall to assess the internal system conveyance capacity. The assessment of interior drainage alternatives will be developed in the near future to correlate with current levee improvement alternatives developed under the Small Communities Flood Risk Reduction program.

Rancho Arroyo Drainage Pump Station – Winters, CA | Performed all hydrologic and hydraulic analysis based on Yolo County design standards using XPSWMM modeling to support the design of a dynamic storage and pumping system to mitigate upstream development impacts. The proposed configuration monitors downstream network capacity to preferentially store upstream storm volume during the peak of the event and drain the expanded detention facility through a new 18 cfs pump station. Design included integrating a low-flow pumping system to direct water quality flows to infiltration within adjacent park areas.

West Jackson Highway Master Plan – Sacramento County, CA | Currently managing the storm drainage assessments of approximately 5,900 acres of proposed development along Jackson Highway just west of the City Rancho Cordova in Sacramento County known as the West Jackson Highway Master Plan area. The project is tributary to the Morrison Creek and Elder Creek watersheds and necessitates a detailed assessment of existing conditions upstream and onsite hydrology using SacCalc, and detailed hydraulic analysis using HEC-RAS and XPSWMM. Proposed alternatives will include channel and levee improvements, flood detention and retention facilities, and drainage pump station sizing/optimization and impacts analysis to ensure no increases result offsite. Extensive hydrologic modeling of the upstream watershed has been completed to affirm peak flows, volume and timing of upstream runoff and to address off-stream weir spilling through the plan area, to establish baseline conditions for assessing future impacts. As part of the analysis Wood Rodgers and subconsultants have performed detailed channel cross section and bridge surveys and 1-foot contour LiDAR data collection. The modeling has included routing of upstream and project flows through the City of Sacramento to ensure no downstream impacts are created during pumping and long duration storm event simulations under build-out conditions. The latest evaluations have also included climate change assessments, tiering off of current State of CA assessments, to establish potential runoff (volume) impacts for both onsite and offsite cumulative conditions.

Gibson Canyon Creek and North Tributary Watersheds Hydrologic and Hydraulic Evaluation – Solano County, CA | Managed all aspects of this study for the Solano County Water Agency which involved modifying existing HEC-1 modeling, obtaining and using updated topographic survey information and developing dynamic one and two-dimensional hydraulic analysis using MIKE FLOOD to determine the worst-case existing conditions floodplain envelope and the impacts of detention storage alternatives.

Twin Creeks Drainage Study – Solano County, CA | Managed all aspects of this study for the Solano County Water Agency which included development of a HEC-HMS hydrologic model for the Green Valley Creek and Wild Horse Creek watersheds as well as the development of a two-dimensional MIKE FLOOD hydraulic model to determine the extent of flooding affecting residential properties in the study area.

Hydrologic/Hydraulic Study – Solano County, CA | Managed field surveying/mapping and MIKE-FLOOD (two-dimensional) floodplain analysis and report development for determining existing flood extents and post-project alternative mitigation for

several phases of construction proposed by Pacific Gas & Electric Company Vaca-Dixon Substation along Gibson Canyon Creek near Vacaville, California.

Downie River and North Yuba River FEMA 100-Year Floodplain Evaluation and Delineation, Department of Water Resources – Sierra County, CA | Directed and managed the hydrologic and hydraulic analysis supporting 40 miles of river floodplain modeling. The hydrologic analysis performed updated frequency analysis for numerous stream flow gages as well as applying record extension techniques for short record gages. The analysis included applications of recent USGS Regional Skew values as well as Maintenance of Variance Extension (MOVE) types 1, 2, and 3 methods for extending short record gage data for improving predictions of infrequent (large) floods, and PeakFQ and Expected Moments Algorithm comparisons.

Estudillo Canal Flood Risk and Uncertainty Analysis, Alameda County Flood Control District – Alameda County, CA | Managed and directed the technical hydraulic modeling and evaluations of Estudillo Canal, to support USACE Feasibility and Flood Damage assessments of flooding affecting the City of San Leandro. The channel was assessed for a range of flows and stream bed variations to account for risk and uncertainty considerations in evaluating flood risk. In addition to evaluating a wide range of flood improvement alternatives, the study also performed a Coincident Frequency Analysis to evaluate the combined effects of ocean tide and watershed generated peak flow, and evaluated the effects of predicted sea level rise on project sizing, cost and benefits.

Storm Drainage Master Plan – Colusa County, CA | Managed all technical modeling and development of the storm drainage master plan for the city of Colusa. Existing and future land use scenarios were evaluated internally using XP-SWMM with external levee and flooding evaluations using MIKE FLOOD. The final report included development of Design Criteria and Standards, including design rainfall, a Problem Identification Report, a Master Plan report (defining drainage solutions and impacts) and a Cost Allocation Report defining facilities costs and recommended allocation of costs to benefiting lands.

Gerber/Bradshaw Drainage – Sacramento County, CA | Managed and performed MIKE-FLOOD (two-dimensional) floodplain analysis for areas between Gerber Creek and Laguna Creek to identify the existing Interbasin Transfer floodplain and the mitigation necessary to allow for limited development for this Taylor Properties project.

Kathyanna Ranch Drainage Study – Madison, CA | Managed all technical aspects of hydrologic analysis using HEC-HMS to determine impacts of proposed development for Kathyanna Ranch, LLC. Michael directed and reviewed all two-dimensional hydraulic analysis using MIKE FLOOD to evaluate existing conditions and to design facilities to mitigate the impacts of proposed development within the existing floodplain.

Emerald Sea Drainage Study – Butte County, CA | Managed and reviewed all hydrologic modeling using HEC-1 to more accurately reflect drainage tributary to the project area and to assess the impacts of development for this Schuster Homes project. Michael directed and reviewed hydraulic modeling using MIKE FLOOD to evaluate existing conditions and to formulate design alternatives to mitigate the impacts of development within the existing floodplain.

Kittyhawk Development – Butte County, CA | Managed hydrologic modeling using HEC-1 to accurately reflect drainage affecting the project area from Keefer Slough and Rock Creek and to assess the impacts of the George Nicolaus Kittyhawk Development. Michael directed and reviewed hydraulic modeling using MIKE FLOOD to evaluate existing conditions and to formulate design alternatives to mitigate the impacts of development within the existing floodplain.

Yolo County Drainage Manual – Yolo County, CA | As part of the FloodSAFE Yolo Pilot Program, Michael managed the update of design rainfall for the entire county and developed interactive rainfall depth/duration/frequency mapping tools as part of the development of a county-wide drainage manual. Engaging the County and City officials Michael oversaw all aspects of defining acceptable hydrologic and hydraulic modeling methods and storm drainage facility sizing within Yolo County.

Cache Creek Hydrology Update – Yolo County, CA | As part of the FloodSAFE Yolo Pilot Program, Michael oversaw the update and calibration of the previously developed USACE hydrologic model using HEC-HMS and gage-adjusted radar rainfall to establish runoff timing and infiltrative losses. The study includes update of the flow frequency analysis and application of previously developed storm centering techniques to develop fully calibrated rainfall/runoff modeling for future downstream projects being proposed by the US Army Corps of Engineers.

Storm Drainage Facilities Master Plan Update/ Preliminary Engineering – Woodland, CA | Conducted HEC-1, SWMM runoff and hydraulic analyses for the city-wide storm drainage facilities layout and developed layout drawings and quantities/cost estimates for the Master Plan report for the city of Woodland. He also conducted HEC-1 and MIKE SWMM analysis for development of several

alternative storm drainage facility scenarios to serve the South Urban Growth Area of Woodland. Michael developed technical memoranda documentation including project element descriptions, mitigation impacts, qualitative engineering evaluations, costs and figures, and prepared report and methodology for combined frequency analysis for simultaneous storm occurrences in the city of Woodland and the Yolo Bypass. This work provided the design basis for large construction projects in the South Area including the East Regional Detention Pond.

Storz Detention Pond - Flood Control and Water Quality Upgrades – Woodland, CA | Managed HEC-1, SWMM runoff and hydraulic analyses for the improvement of the existing Storz Pond as a detention and water quality treatment facility for the City of Woodland. Michael developed layout drawings and quantities/cost estimates for the proposed construction, providing 60% design drawings for all pertinent inlet and outlet reinforced concrete structures, connecting structures and grading separations. Project completed in 2008.

Whitehouse Creek Diversion – Elk Grove, CA | Prepared Improvement Plans for the Sheldon Pacific Project - Whitehouse Creek Diversion, including flood diversion channel and wetlands water supply channels, box culverts and pipe culvert crossings in Elk Grove, California. He prepared and submitted a Letter of Map Revision application, including SWMM hydraulic analyses and supporting documentation notebook, to FEMA for describing the project.

Cascade Flume Replacement Project – Nevada County, CA | Evaluated existing cross drainage facilities and performed numerous design activities for developing construction plans and technical specifications for installing 7.5 miles of 54-inch concrete pipeline, and associated replacement cross-drainage structures, flow measurement structures, intake structure, flow control structure, and temporary water supply system pipelines and pump facilities for the Nevada Irrigation District's Cascade Flume Replacement Project. He performed various design and layout activities for the construction plans and technical specifications for the Pinewoods Pump Station, a 20 cfs diversion and pumping plant, with 24-inch ductile iron pressure pipeline with screened intake and outlet facilities.

Cache Creek Dam Break Analysis – Yolo County, CA | Managed the hydraulic analysis using HEC-RAS to evaluate and map in-channel and overbank flooding conditions (maximum wave) within Cache Creek downstream of a hypothetical dam failure based on criteria developed by the Federal Energy Regulatory Commission for this Yolo County Flood Control and Water Conservation District Project.

Upper and Lower Butte Sink Fish Passage/Water Control Structures – Butte County, CA | Performed project management, engineering analysis, and design responsibilities for five fish passage/water control structures in the Upper and Lower Butte Sink for existing and proposed structures including fish ladders, pneumatic spillway gates, fish barriers, adjustable automatic sensing slide gates (secondary fish passage) and associated reinforced concrete structures for the California Waterfowl Association and Ducks Unlimited, Inc.

Rock Creek and Keefer Slough Initial Assessment – Butte County, CA | Developed all phases of an Initial Assessment of flood control alternatives for Rock Creek and Keefer Slough in Butte County, including channelization, setback levees, diversions, and regional storage for this USACE project.

One-Mile Dam Renovation – Chico, CA | Evaluated hydraulic conditions and developed alternatives to renovate the One-Mile Dam along Big Chico Creek in Bidwell Park during preliminary engineering phases for the City of Chico.

Sutter Pointe Specific Plan Drainage Master Plan – Sutter County, CA | For this Sutter County Landowners Group project, Michael managed HEC-RAS and SWMM modeling/analysis and developed Drainage Master Plan report for 7500-acre (Measure M) proposed development within the Natomas Basin, including alternatives for the Sankey Spill.

Caltrans Central Region On-Call for Districts 5, 6, and 10 – Fresno, CA | Providing Hydraulic/Hydrology support for this California Department of Transportation (Caltrans) Central Region on-call contract to provide a variety of highway design services. Projects have included safety projects, rehabilitation projects, and operational improvement projects including the development Project Reports for a safety projects located in Monterey, Modesto and Placer Counties.

Caltrans District 3 SR 89 El Dorado County (Segment 1) – Lake Tahoe, CA | Provided hydraulics and drainage services as part of our On-Call contract with Caltrans for the preparation of PS&E for approximately 6.2 miles of SR 89 in El Dorado County from the intersection of US 50 to the Alpine County line. The project was a $15 million project to rehabilitate pavement, install drainage and water quality improvements, and correct other deficiencies (guardrail, clear recover zone, etc.). Early in the design process, the

project was identified as a potential recipient of ARRA (American Recovery and Reinvestment Act) Funding; as such, Wood Rodgers expedited the PS&E and by being proactive with Caltrans on in-progress submittals, as well as enhanced project communications, was able to deliver the Final PS&E with a four-month savings. The project is a multi-season construction effort, so special care was taken with storm water practices and traffic handling approaches. The project is currently under construction.

Caltrans District 3 SR 89 El Dorado County (Segments 3, 4, 5) – Lake Tahoe, CA | Provided hydraulics and drainage services as part of our On-Call contract with Caltrans for the preparation of project reports and PS&E for over 20 miles of SR 89 in El Dorado County along the west shore of Lake Tahoe. Originally, there were three separate projects with an overall budget of over $80 million. The projects shared similar slopes; water quality and drainage improvements, dig-out and replace failed pavements, and rehabilitation of guardrails striping, traffic signs, etc. Through close coordination with the Lahontan Regional Water Quality Control Board and Caltrans, Wood Rodgers was able to identify areas where the Natural Environment was providing water quality treatment, thereby reducing the need for structural BMPs. As a result, the project costs were reduced, and pavement overlay, shoulder widening/stabilization, and maintenance vehicle access was added into the slope, and the projects are now proposed to be combined. Wood Rodgers has prepared PS&E for approximately 7.5 miles of the project, while Caltrans is doing the remaining. As the project is multi-seasonal, and covers areas of high tourist traffic, innovative traffic handling concepts have been proposed such as; temporary signals, partnerships with local transit, and public outreach. The projects also required significant stakeholder outreach including Wood Rodgers facilitation of several public meetings and the public hearings.

Caltrans Central Region - SR 99 Rehabilitation – Modesto, CA | Provided hydraulics and drainage services for the preparation of PS&E for the rehabilitation of five ramps along SR 99 through the City of Modesto. Three of the ramps were on-ramps and two were off-ramps. The project was designed to Caltrans Resurfacing, Restoration, and Rehabilitation (RRR) standards and included; repairing failed pavement, widening to accommodate STAA trucks, correction of non-standard superelevation, reconstruction of pump station, and installation of retaining walls and concrete barriers. The project also required complex traffic handling and construction phasing to ensure minimal impacts to traffic, especially the heavily used STAA truck traffic. This was accomplished through close coordination with Caltrans Construction and Permits staff to ensure design and phasing met their expectations. The PS&E package was submitted to Caltrans Central Region.

Caltrans Central Region US 101 Safety Improvements – Monterey County, CA | Provided hydraulics and drainage services for the preparation of PS&E for safety improvements along approximately 20 miles of US 101 in Monterey County. The area had experienced a high number of collisions attributed to the existing at-grade crossings along US 101 in the vicinity. To correct these, the project installed; left-turn pockets, acceleration lanes, drainage improvements, and guardrailing at 13 different locations. The PS&E was submitted in spring 2009, and the project began construction in summer 2009.

SR 101/Laurel Drive Interchange Improvements – City of Salinas - Salinas, CA | Pnrovided hydraulics and drainage services for project to modify interchange, and adjacent intersections to improve operations and safety. Project widens two ramps to accommodate new turn lanes, modifies and adds traffic signals, and constructs new retaining walls to avoid environmental and right-of-way impacts. Project required close coordination with Caltrans and the City.