



Hidden Valley Lake Community Services District

Finance Committee Meeting

DATE: November 19, 2018
TIME: 12:30 pm
PLACE: Hidden Valley Lake CSD
Administration Office, GM Office
19400 Hartmann Road
Hidden Valley Lake, CA

- 1) CALL TO ORDER
- 2) PLEDGE OF ALLEGIANCE
- 3) ROLL CALL
- 4) APPROVAL OF AGENDA
- 5) DISCUSS: Discuss and recommend award of contract for the development of the Local Hazard Mitigation Plan
- 6) DISCUSS: Cost and make recommendation for funding option for October power outage
- 7) DISCUSS: Cost and make recommendation for funding option for the November power outage
- 8) DISCUSS: Financial solution to mitigate power outage issues in the future and make recommendation
- 9) DISCUSS: AMI options; provide Schneider Electric update and make recommendation
- 10) PUBLIC COMMENT
- 11) COMMITTEE MEMBER COMMENT
- 12) ITEMS FOR NEXT AGENDA
- 13) ADJOURNMENT

Public records are available upon request. Board Packets are posted on our website at www.hvicsd.org/Meetings.

In compliance to the Americans with Disabilities Act, if you need special accommodations to participate in or attend the meeting please contact the District Office at 987-9201 at least 48 hours prior to the scheduled meeting.

Public shall be given the opportunity to comment on each agenda item before the Governing Board acts on that item, G.C. 54953.3. All other comments will be taken under Public Comment.

**ACTION OF
HIDDEN VALLEY LAKE COMMUNITY SERVICES DISTRICT**

DATE: November 19, 2018

AGENDA ITEM: Discussion and Recommendation: Discuss bid proposals for the development of the LHMP and provisionally award; pending grant approval.

RECOMMENDATIONS: Find consensus with staff research that Foster Morrison is the most qualified candidate for contract award.

FINANCIAL IMPACT: Since the award of contract will be provisional on award of grant funding, the following table depicts an accurate cost allocation.

Cost to the District	CalOES/FEMA grant funding	Foster Morrison total project costs
\$22,400.00	\$67,200.00	\$89,600.00

BACKGROUND: A request for grant funding was submitted on September 4, 2018 to CalOES/FEMA to develop a Local Hazard Mitigation Plan (LHMP). The LHMP is a pre-requisite for any additional Hazard Mitigation Grant Program (HMGP) funding. In other words, our high priority projects such as tanks or tideflex, or generators cannot receive federal funding without an approved LHMP. The importance of the LHMP has prompted a search for consultants to assist in its development. As illustrated in the attached memo from staff to the Finance Committee, of the two proposals received from both Wood Environment & Infrastructure Solutions, Inc. and Foster Morrison, Foster Morrison appears to be the most qualified applicant.

Recently, a CalOES representative was able to provide feedback on the two applicants. Having had extensive experience in Hazard Mitigation and Emergency Services, she confirmed that Jeanine Foster and Chris Morrison were former employees/co-owners of AMEC, currently known as Wood Environment & Infrastructure Solutions, Inc. Prior to the creation of Foster Morrison 8-10 years ago, CalOES can confirm that LHMPs written by AMEC were spearheaded by Jeanine Foster. Upon discussing potential concerns over pricing, she did offer the insight that “you get what you pay for”. We are very thankful to have the support and guidance of CalOES to help streamline the LHMP development process, and have the utmost confidence in their experience and insight.

APPROVED
AS RECOMMENDED

OTHER
(SEE BELOW)

Modification to recommendation and/or other actions:



Hidden Valley Lake Community Services District

19400 Hartmann Road
Hidden Valley Lake, CA 95467
707.987.9201
707.987.3237 fax
www.hvlcsd.org

November 8, 2018

Re: Thoughts on two LHMP Proposals

Finance Committee Members:

Staff has completed its review of the two Local Hazard Mitigation Plan (LHMP) proposals. While the "Foster Morrison Proposal" has a slightly higher price tag, there is an added value to this consulting firm.

The financial difference between the two proposals for the District is \$8,830. The "Wood Proposal" will cost the District \$13,569., and the "Foster Morrison Proposal" will cost the District \$22,400.

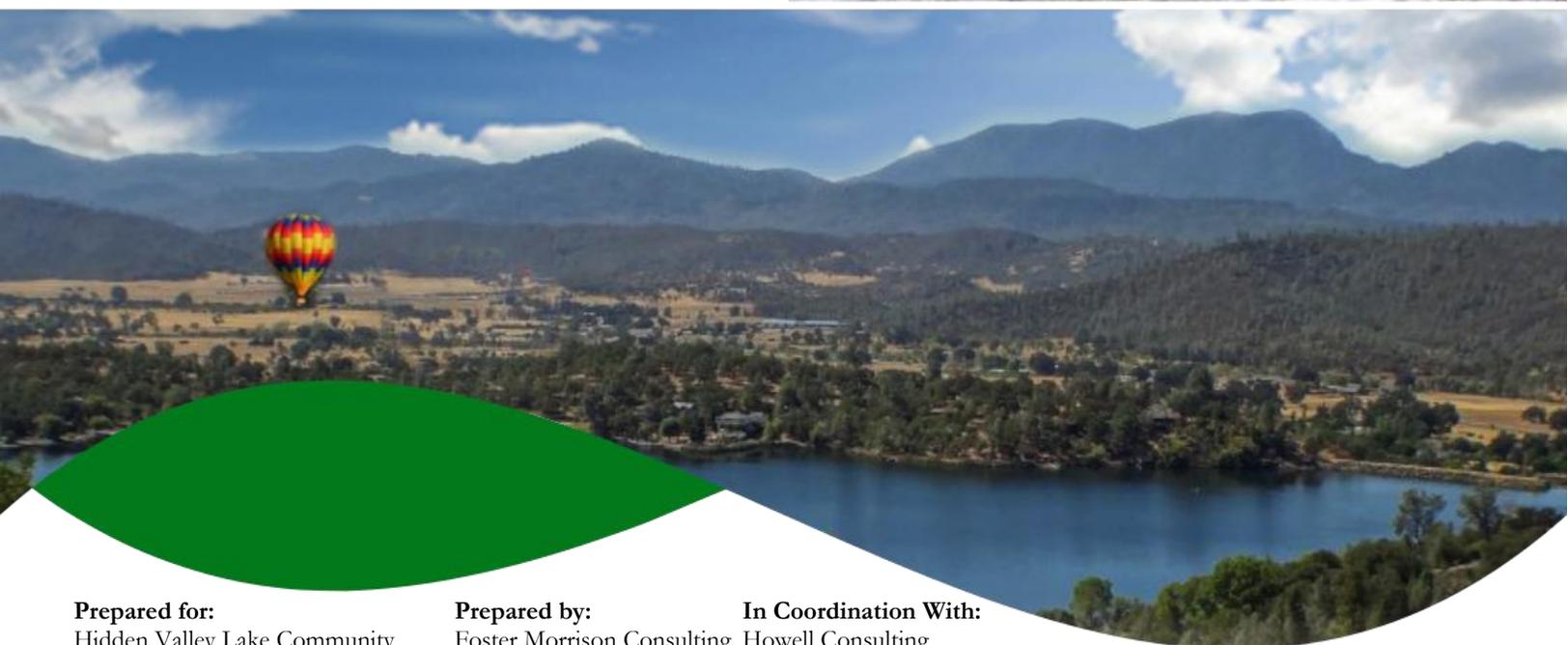
While Wood has extensive experience in a broad range of states, counties, and jurisdictions, Foster Morrison has a more focused area of expertise in this state, this county, as well as single jurisdictions within this county. Foster Morrison facilitated Lake County's LHMP, which was approved by CalOES/FEMA within two months of submittal. The expected review time after submittal is normally six months. Foster Morrison is uniquely qualified to help the District leverage the content of the county's plan when building HVLCSD's local plan.

The plan approach of Foster Morrison as a boutique firm, is to see the document development through, from beginning to end. Wood takes a more modular, and hands-off approach. Each phase of Wood's plan development is handled by a different team, but overseen by a project manager. Additionally, Wood provides most plan support remotely via teleconference, and SOPs. In short, Foster Morrison provides on-site representation during the public outreach and planning of the plan while Wood's approach burdens the District with this task. Finally, Wood's teaches the District how to write the LHMP and reviews it to better assure acceptance by CalOES. This approach pulls staff from current assignments making it difficult for our small agency to complete necessary reports and required tasks while Foster Morrison would not add this additional burden to the current workload.

In the project understanding section of each proposal, both firms summarize what they know about Hidden Valley Lake, and the hazards that present themselves in this area. While fires are clearly identified in both summaries, only Foster Morrison makes mention of the Valley Fire as well as the ensuing floods.

We look forward to the Finance Committee's recommendation for an award of contract on this work.

Hidden Valley Lake Community Services District Local Hazard Mitigation Plan November 5, 2018



Prepared for:
Hidden Valley Lake Community
Services District
19400 Hartmann Road
Hidden Valley Lake, CA 95467

Prepared by:
Foster Morrison Consulting
5628 W Long Pl
Littleton, CO 80123

In Coordination With:
Howell Consulting
12820 Rimfire Dr.
Wilton, CA 95693





November 5, 2018

Hidden Valley Lake Community Services District
Alyssa Gordan, Water Resources Specialist
19400 Hartmann Road
Hidden Valley Lake, California 95467

Re: Hidden Valley Lake Community Services District: RFP for Development of a Local Hazard Mitigation Plan

Ms. Gordan:

Foster Morrison Consulting, Ltd. (Foster Morrison), in conjunction with Howell Consulting, Inc., is pleased to submit this scope of work, proposed budget, project team, and summary of qualifications for a Hidden Valley Lake Community Services District (HVLCS D) Local Hazard Mitigation Plan (LHMP). The Foster Morrison team brings a unique understanding of the mitigation planning needs of the District. Foster Morrison's proposed project manager and lead planner proposed for this HVLCS D LHMP project were the project manager and primary planner for the development of the recent Lake County's 2018 LHMP Update and are in process with LHMPs for both the Cities of Clearlake and Lakeport. As well, Howell Consulting, part of this proposed Foster Morrison team, was also instrumental in the development of the Lake County LHMP Update and is on our team for the City plans. *Note:* the recent Lake County LHMP Update developed by this same Foster Morrison team was reviewed and approved by both Cal OES and FEMA in just over two months with no requests for revisions.

The Foster Morrison team proposed for this LHMP project have been developing hazard mitigation plans and plan updates for nearby California communities over the last twelve years including Lake County, Colusa County, Sacramento County, Nevada County, Placer County, Butte County, Amador County, Sutter County, Calaveras County, Madera County, Modoc County, numerous California cities and districts, and the recently approved Los Angeles Unified School District. Our proposed Project Manager and Lead Planner for this LHMP have worked together as a team doing mitigation plans for all of the aforementioned cities and counties. In fact, Foster Morrison staff have completed two planning cycles for numerous California communities and three planning cycles for two large California counties (Placer and Sacramento) – all Federal Emergency Management Agency (FEMA)-approved. In addition, Foster Morrison has been teaming with Howell Consulting on several of these California hazard mitigation planning projects. As a result of these planning efforts, many of these communities have been successful in obtaining pre- and post-disaster grant funds for various projects identified in their LHMP mitigation strategies.

Foster Morrison team's extensive mitigation planning experience in California combined with their in-depth knowledge of the California regulatory environment, area-specific hazards, and customized plan development process translates to added value to the District. By utilizing the Foster Morrison team, the HVLCS D will receive an LHMP that is customized to meet the specific needs of the District, is clear and action oriented, and will enable HVLCS D to become eligible for FEMA and state mitigation and disaster recovery funds. Our team's expertise and working relationships with the California Office of Emergency Services (Cal OES) and FEMA Region IX also assist our clients with navigating all aspects of FEMA programs from disaster preparedness to mitigation and grant applications to post disaster response and recovery.

We are committed to providing the HVLCS D with an LHMP that is approved by Cal OES and FEMA and contains a comprehensive mitigation strategy that is designed to reduce hazard losses and make the District more disaster resistant.

If you have any questions, please feel free to contact me at your convenience. We look forward to working with the District on this project.

Sincerely,



Jeanine Foster, JD
Principal/Senior Project Manager
Foster Morrison Consulting, Ltd.
Jeanine.foster@fostermorrison.com
(303) 717-7171

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1. Introduction: The Foster Morrison Team

This section provides an overview of the proposed Foster Morrison team comprised of Foster Morrison Consulting (Prime Consultant) and Howell Consulting (Subconsultant). Foster Morrison and Howell Consulting have teamed to provide the HVLCSO with the expertise, experience, locale, and customer service necessary to successfully execute the proposed scope of services for a FEMA-approved LHMP.

Foster Morrison Consulting, Ltd.

Foster Morrison Consulting, Ltd. (Foster Morrison) is an emergency management consulting firm with staff expertise and experience encompassing all aspects of FEMA programs - from disaster preparedness to mitigation and grant applications to post-disaster response and recovery. Specializing in Hazard Mitigation Planning, Foster Morrison develops Hazard Mitigation Plans and Plan Updates that meet the requirements of the Disaster Mitigation Act (DMA) of 2000 as well as the planning requirements of the Flood Mitigation Assistance (FMA) program and the National Flood Insurance Program's (NFIP) Community Rating System (CRS). Our focus is developing FEMA-approved, customized mitigation plans for communities that enable participating jurisdictions to be eligible for FEMA mitigation funds and includes comprehensive mitigation strategies designed to reduce hazard-related losses, enhance community capabilities, and make a community better able to respond and recover when disasters occur. Foster Morrison staff have been working together as a planning team for the last ten years developing hazard mitigation plans for clients around the country. Key geographic areas of expertise include California, Colorado, and Mississippi. Formed in 2014, Foster Morrison, a limited liability corporation, is registered and licensed to do business in the State of California and is also registered and in good standing with the Federal Procurement System for Award Management (SAM). Foster Morrison is a small boutique firm that employs two full time planners and contracts with our GIS/mapping consultant to support the risk assessment portion of our planning projects. Other contract employees include Brenna Howell and her contract staff with Howell Consulting.



Hazard Mitigation

Hazard mitigation and mitigation planning is a primary focus area of Foster Morrison. Foster Morrison staff experience and expertise in hazard mitigation planning dates back to 2003 shortly after DMA 2000 (Public Law 106-390) amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act by repealing the previous mitigation planning provisions and replacing them with a new set of requirements that emphasize the need for state, local, and tribal entities to closely coordinate mitigation planning and implementation efforts. DMA 2000 established a requirement for local governments to have a FEMA-approved, DMA-compliant plan in place by November 2004 in order to maintain eligibility for certain pre- and post- disaster grant funding.

In addition to developing mitigation plans for numerous local jurisdictions throughout California, Foster Morrison staff have significant experience working with clients in all aspects of mitigation. This includes identifying and developing mitigation projects based on community risks and vulnerability; developing grant applications and securing funding for identified projects; conducting Benefit-Cost Analyses (BCAs) and workshops to support competitive grant applications; supporting Environmental and Historic Preservation (EHP) project clearances; and providing project management and grant administration services for project implementation.

Hazard Mitigation Planning

Foster Morrison's experience and qualifications for providing the HVLCSO with a FEMA-approved, DMA-compliant LHMP is unequalled. Foster Morrison staff have developed hazard mitigation plans for clients

in 15 states and 7 FEMA Regions, including Region IX, providing coverage for hundreds of jurisdictions. Foster Morrison proposed staff for this LHMP project have been working with nearby California communities developing their hazard mitigation plans and plan updates since 2003. These DMA planning efforts have included two DMA planning cycles for multiple California communities, and three DMA planning cycles for two large California counties (Sacramento and Placer Counties) providing FEMA-approved plans and coverage for numerous participating jurisdictions. Whether a single or multijurisdictional effort or a rural or urban environment, each of these plans were customized to meet the individual needs of each participating community while ensuring Cal OES and FEMA approval.

See Table 1 for an overall summary of Foster Morrison staff mitigation planning experience.

Table 1 Foster Morrison Staff Mitigation LHMP Planning Experience

FEMA Region IX	FEMA Region IV, V, VI, and VII	FEMA Region VIII
Amador County, CA	City of Bay St. Louis, MS	Big Horn County, MT
Butte County, CA	City of Long Beach, MS	Boulder County, CO
Calaveras County Water District, CA	City of Moss Point, MS	Carbon County, MT
Calaveras County, CA	City of Pascagoula, MS	City of Boulder, CO
City of Azusa, CA	City of Waveland, MS	Jefferson County, CO
City of Clearlake	Pearl River County, MS	Liberty County, MT
City of Fullerton, CA	Dane County, WI	Northeast Colorado Regional Hazard Mitigation Plan (10 counties)
City of Lakeport	State of Arkansas	Southeast Colorado Regional Hazard Mitigation Plan (6 counties)
City of Piedmont	Bossier City, LA	State of Colorado
City of San Rafael	Chavez County/Roswell, NM	State of South Dakota
City of Vacaville	Los Alamos County, NM	Teton County, MT
Colusa County, CA	State of Missouri	Toole County, MT
Fresno County, CA	State of Mississippi	University of Colorado at Boulder, CO
Kern County, CA		Ute Mountain Ute Tribe, CO
Lake County, CA		
Los Angeles Unified School District		
Madera County		
Modoc County, CA		
Nevada County, CA		
Placer County, CA		
Sacramento County, CA		
Sutter County, CA		
Washoe County, NV		

All of these planning projects required extensive research, analyses, and distillation of large amounts of hazard and community related data as well as the development, facilitation, and presentation of public outreach programs to a wide variety of stakeholders. The Foster Morrison team’s extensive hazard mitigation planning experience developing FEMA-approved LHMPs throughout California and other FEMA regions brings this expertise to all of our planning projects.

Floodplain Management/NFIP's Community Rating System (CRS)

Historically, people have been attracted to developing in and around waterways for a variety of reasons. Sound floodplain management practices implemented at the local level are a key factor in reducing flood-related losses in a community in these flood-prone areas. The NFIP is a federal program created to mitigate future flood losses through community-enforced building and zoning ordinances and to provide protection for property owners against potential losses through flood insurance. The NFIP's CRS is a voluntary program that recognizes community floodplain management activities that exceed the minimum NFIP requirements. The incentive behind the CRS program is to provide discounted insurance premiums to community residents as a result of implementing a floodplain management program that encourages a comprehensive approach to reduce flood losses. Foster Morrison staff provide floodplain management and CRS expertise to clients to assist in enhancing their floodplain management programs, including developing hazard mitigation plans that maximize CRS credit points. The end result is helping clients achieve a lower CRS class which ultimately reduces the cost of flood insurance to community residents, both within and outside of designated Special Flood Hazard Areas (SFHAs). Most recently this has included helping flood-prone communities in California, Colorado, and Mississippi maximize their CRS credits under CRS Activity 510 in accordance with the new 2013 (now 2017) CRS Coordinator's Manual. In fact, several recent plans developed by Foster Morrison staff have developed DMA/CRS compliant plans to the most current CRS schedule, scoring among the highest CRS credits in the nation for this activity.

Risk Assessment and DFIRM Experience

Foster Morrison staff have conducted risk assessments as part of state, local, and tribal hazard mitigation planning. The risk assessment is the fundamental basis of mitigation and mitigation planning. It is the process that documents the problems that are unique to each participating jurisdiction. There are three interrelated portions to the approach Foster Morrison takes when developing a risk assessment: (1) hazard identification, (2) vulnerability assessment, and (3) capability assessment.

Together, the hazard identification and vulnerability assessment paint the picture of the hazards that could occur in a jurisdiction, and then assesses each hazard's historic impacts and potential future impacts on populations, property, and critical facilities and infrastructure. The capability assessment then measures this vulnerability against programs, policies, procedures, and plans that are already in place in the jurisdiction that can reduce the effects of these hazards. The end result of this analysis is the identification of additional mitigation strategies that build upon the community's existing capabilities.



Foster Morrison staff experience with state, local, and tribal risk assessments includes:

- Creating and analyzing GIS-based risk assessments for dam failure, flood, earthquake, landslide, wildfire, and other natural and man-made hazards
- Developing vulnerability analysis methods using GIS: centroid method, proportionate division, Access queries, raster analysis, and annualized loss calculations to support detailed damage/loss estimates by jurisdiction
- Experience with Level 1 and 2 Hazus (FEMA's loss estimation software) analysis, FEMA's GIS-based loss-estimation tool, for earthquake and flood hazards, including DFIRM integration for Hazus flood analysis
- Creating accurate flood loss estimations by applying FEMA's NFIP depth-damage relationship curves, as used in FEMA's benefit cost software modules
- Conducting detailed inventories of community assets, including an inventory of natural, historic, and cultural resources and key critical and public facilities and infrastructure

- Developing high quality maps and tables for displaying hazards, vulnerabilities, and loss estimates by jurisdiction
- Conducting exhaustive research in each jurisdiction to inventory and document all existing capabilities to mitigate and reduce the impacts of identified hazards

Other FEMA Programs

Hazard mitigation planning is the foundation for identifying and developing sound hazard mitigation projects for implementation by communities. Hazard mitigation projects are essential for ensuring that at-risk community assets are stronger and more resilient for the next severe storm event or natural disaster. FEMA provides mitigation funding support primarily through four pre- and post-disaster programs: the Pre-Disaster Mitigation (PDM) program, Public Assistance (PA) Section 406 Mitigation, the Hazard Mitigation Grant Program (HMGP), and the Flood Mitigation Assistance (FMA) program. Foster Morrison can provide the full-range of mitigation services, in addition to planning, from grant applications and Benefit-Cost Analysis (BCAs), to project implementation and grants management for communities following a disaster as part of Section 406 Mitigation and as part of FEMA’s PDM, HMGP, and FMA Programs.

Foster Morrison Team Contact and Locations

The Foster Morrison team’s proposed Project Manager, company name and primary office location and contact information for the project is:

Jeanine Foster, JD
 Principal/Sr. Project Manager
 Foster Morrison Consulting, Ltd.
 5628 West Long Place
 Littleton, CO 80123
 Jeanine.foster@fostermorrison.com
 Phone: (303) 717-7171

Other office locations that will be supporting the project include:

Foster Morrison Consulting, Ltd
 6095 Zang Way
 Arvada, Colorado 80004
 (303) 717-7171

Howell Consulting Inc.
 12820 Rimfire Drive
 Wilton, CA 95693
 (916) 202-2635

Jeanine Foster, as Principal of the firm and signatory to this submittal, has authority to bind the firm in an agreement with the HVLCSD should we be awarded this contract. We have reviewed the project requirements, contract terms and other terms and conditions specified in this RFP and agree to comply with all terms in full. This proposal remains valid for 90 days after receipt.

Sub-consultant: Howell Consulting, Inc.

Foster Morrison is teaming with Howell Consulting as a sub-consultant to this effort. Howell Consulting will be taking the lead on the QA/QC efforts associated with LHMP development. Howell Consulting will also support other tasks, as needed, to meet client requirements and project deadlines. A brief overview of Howell Consulting is provided below.

Howell Consulting: The Company

Howell Consulting, Inc. (Howell Consulting) is an S-Corporation, founded in 2007 and based in Wilton, California. Brenna Howell, with comprehensive emergency management expertise, is the owner and primary employee of this small, specialized firm and is supported by several contract staff, that includes planners,

engineers, and GIS expertise. Full and contracted part-time staff have more than 50 years of experience in the emergency management field that comprises over 20 years at the State level, 15 years at the County level, and many years working at the city level combined. Howell Consulting offers a full range of planning, mitigation, preparedness; response and recovery consulting services to better prepare organizations before and after disaster strikes. Howell offers both pre- and post-disaster services including the review and updating of emergency response plans, business continuity and hazard mitigation plans, risk analysis, hazards and vulnerabilities identification, and emergency communications plans. Howell Consulting also provides on-site staffing and assistance during actual disasters or emergency situations. Finally, through strategic partnerships, Howell Consulting is able to assess needs and prescribe appropriate emergency management trends such as the latest planning grant requirements and planning guidance.

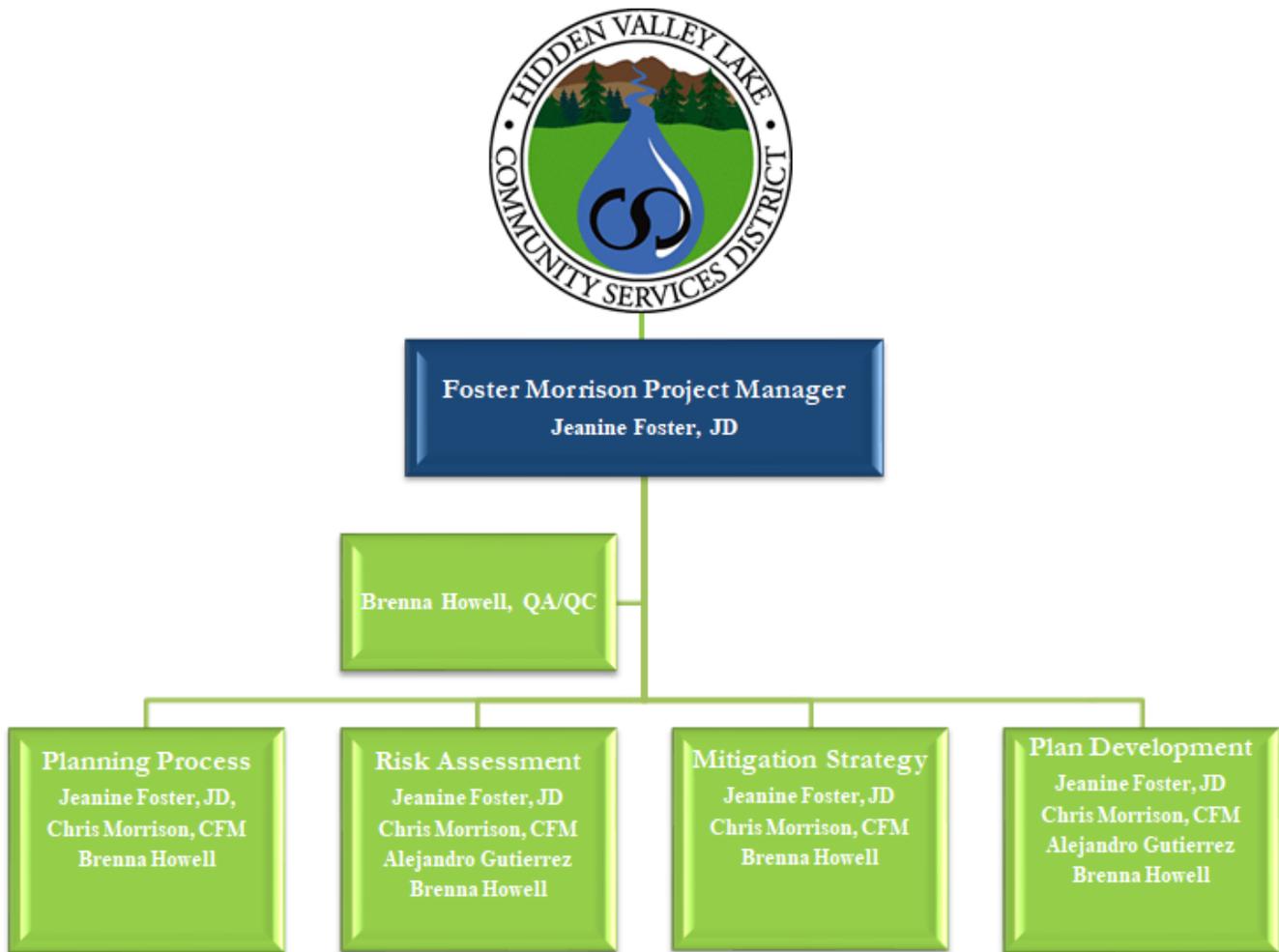
Howell Consulting has over 20 years of experience providing emergency management services to numerous northern California counties and cities. Specifically, for the recent Lake County LHMP, Howell Consulting provided QA/QC, and project support on other LHMP Update tasks in a variety of areas. In addition to Lake County, Howell Consulting has also been working with Foster Morrison in the development of several California LHMPs and LHMP Updates: Cities of Clearlake and Lakeport, Colusa County, Nevada County, City of Piedmont, and the Los Angeles Unified School District. Other LHMPs and LHMP Updates developed by Howell Consulting include Merced County, Kings County, Yolo County, Yuba County, and the City of West Sacramento.

2. Project Team and Management

Foster Morrison’s hazard mitigation planning staff is uniquely experienced, knowledgeable, and qualified to develop an LHMP for the HVLCSD – our proposed project team staff just recently completed the now FEMA-approved LHMP Update for Lake County and is in process with LHMPs for the Cities of Clearlake and Lakeport. Foster Morrison team staff have been involved over the last twelve years in the development of numerous local hazard mitigation plans for California communities, including our multiple planning efforts in nearby northern California communities. All of our staff have been involved in the development of numerous local hazard mitigation plans and plan updates that meet DMA, FMA, and CRS planning requirements and are uniquely knowledgeable of the hazards in northern California and associated mitigation strategies designed to reduce hazard-related losses. As well, the Foster Morrison team staff have a strong working relationship with Cal OES and FEMA Region IX.

The proposed project organizational chart is provided below in Figure 1 followed by our proposed staffing plan. Specifically, for each person identified as key staff for this project, a discussion of their project role is provided followed by a brief summary of qualifications. Resumes for key personnel are included in Appendix A.

Figure 1 Foster Morrison Team for Hidden Valley Lake Community Services District LHMP



Jeanine Foster, JD - Principal/Project Manager/Senior Mitigation Planner

Project Role

Jeanine Foster, JD will be the project manager and senior mitigation planner for this effort and take the lead role in project management, community engagement, planning process and meeting facilitation, coordination of risk assessment and mitigation strategy tasks, and drafting the plan document. She will be the primary point of contact with the HVLCS District throughout the project and will facilitate all HMPC and public meetings identified in the scope of work. As a Principal and key technical lead for Foster Morrison’s Hazard Mitigation Planning program, Jeanine is committed to providing her clients with hands-on communications and project support necessary to ensure a high-quality end product to meet client and community objectives.

Summary of Qualifications

Jeanine Foster is a co-owner of Foster Morrison Consulting and plays a key role as principal, project manager, and senior mitigation specialist. She has diverse experience providing project management, mitigation planning, and disaster recovery services in response to damages caused by a variety of natural hazard events, including flood and wildfire, to affected communities, with a focus on cities and counties located in California, Colorado, and Mississippi. Jeanine’s responsibilities include project management; hazard mitigation planning; disaster recovery; grant application development, including benefit-cost analysis (BCAs); environmental and historic

preservation compliance, grant administration, agency coordination; National Flood Insurance Program (NFIP) Community Rating System (CRS) compliance; Floodplain Management Services; regulatory compliance; and marketing. She works closely with clients to define project direction and scope; to identify and pursue grant opportunities; to implement and administer projects funded through a variety of grant resources; and to ensure compliance with applicable regulatory programs such as FEMA's Disaster Mitigation Act (DMA) and NFIP's CRS program. These responsibilities have entailed working with the Federal Emergency Management Agency (FEMA), the National Oceanic and Atmospheric Administration (NOAA), Army Corp of Engineers (USACE), State Emergency Management Agencies and Water Resources Agencies, and local city and county officials to obtain grant funding and to execute and manage projects from startup to final project closeout. Her expertise includes: Project Management; Hazard Mitigation and Emergency Management Planning and Disaster Recovery; Floodplain Management Services/NFIP's CRS Program Compliance; and Regulatory/ Environmental Compliance. Jeanine has a JD from the University of Denver and a BA from the University of Colorado, Boulder.

Chris Morrison, MPA, CFM – Lead Planner and Technical Editor

Project Role

Chris, as the lead mitigation planner on this project, will take the lead in the data collection, the risk assessment research, and plan development and will work closely with the project team to integrate data collected throughout the process into the plan document. He will also be responsible for providing technical editing support and overall document production.

Summary of Qualifications

Chris is a co-owner of Foster Morrison Consulting and is the Lead Mitigation Planner/Technical Editor for Foster Morrison. During the past 8 years, he has provided planning, research, writing, technical editing, and document production expertise to over 40 different DMA plans for jurisdictions in Arkansas, California, Colorado, Louisiana, Mississippi, Missouri, Montana, Nevada, New Mexico, South Dakota, Virginia, Wisconsin, and Wyoming. Recently he has been a key mitigation planner on California Hazard Mitigation Plans for the cities of Clearlake, Azusa, Fullerton, Piedmont, San Rafael, and Vacaville, the Los Angeles Unified School District, as well as Lake County, Colusa County, Madera County, Nevada County, Amador County, Butte County, Calaveras County, the Calaveras County Water District, Kern County, Modoc County, Placer County, Sacramento County, and Sutter County. Chris is a certified floodplain manager and has completed a Masters in Public Administration from Minnesota State University – Moorhead.

Alejandro Gutierrez – GIS Analyst

Project Role

Alejandro will assist in the risk and vulnerability assessment and take the lead in the GIS analysis. He will identify and collect all GIS and risk assessment data, will assist in the development of the risk assessment, and will create the plan maps, analysis tables, and associated methodologies using GIS, Hazus, and other tools.

Summary of Qualifications

Alejandro has 16 years of GIS data development, analysis, conversion, and manipulation within various GIS industries (floodplain mapping, E-911 data development, remote sensing, hydrogeology, and mining). For 6 years, Alejandro worked in a key capacity with FEMA on their Map Modernization (DFIRM) Program. As a GIS Project Manager, Production Manager, and GIS Analyst for the development of 27 county-wide vector- and ortho-based DFIRMs in FEMA Regions III, V, VII, and VIII, he developed a strong team/work environment, trained staff in production techniques, tracked budgets and schedules, and has traveled to study areas to coordinate public outreach meetings. Alejandro has also provided mitigation planning and GIS support for multiple California DMA plan updates: Calaveras, Fresno, Lake, Colusa, Modoc, Madera, Nevada, Placer,

Sacramento, and Sutter counties, as well as for the cities of San Rafael and Azusa, and the Los Angeles Unified School District. For the DMA plans, he generated thematic and illustrative facilities and hazards maps, both at the countywide and city scales, to represent FIRM data and to quantify risks to the county using parcel and assessor's value data. He also generated the standardized map template to present the wildfire risk analysis, also at the parcel level, using GIS data from the California Department of Forestry and Fire Protection. He has used the ESRI tools and Microsoft Access to perform flood analysis using FIRM data on parcels (land use type and valuation data) by city and performed the wildfire analysis using the same methodology. Alejandro has a bachelor's in Environmental Resource Management.

Brenna Howell – Planning Process, Risk Assessment, and Mitigation Strategy Support, QA/QC

Project Role

Brenna will provide support to the planning process, risk assessment, and mitigation strategy tasks. This will include assisting with the development of the hazard profiles and vulnerability assessment for identified hazards and meeting facilitation support for Planning Team and Public Meetings. She will also assist with the development of a capability assessment and will provide support to the development of the District's mitigation strategy. In addition, Brenna will provide quality assurance and quality control (QA/AC) during all phases of the project and will ensure that the plan meets all Cal OES and FEMA mitigation plan review tool requirements before it is submitted for agency review.

Summary of Qualifications

Brenna Howell, of Howell Consulting, has almost 20 years of consulting experience with the last 10 years focused on development of local Emergency Operations Plans, local Hazard Mitigation Plans, and hazard-specific functional annexes (including Floods) specifically for California local government jurisdictions. She has performed such work for Colusa, Kings, Merced, Nevada, Sacramento, Sutter, Yolo, and Yuba counties. Brenna has also completed work for multiple cities such as Winters, Woodland, West Sacramento, Davis, Sacramento, Chico, Piedmont, Los Banos, Avenal, and Hanford. Brenna has served as the Emergency Services Coordinator for the cities of Stockton and West Sacramento, as well as the County of Yolo providing full emergency management program management responsibilities. Brenna is currently serving as the Sutter County Emergency Manager on an interim basis. In addition, Howell Consulting worked on the LHMP Update with Foster Morrison on the recent Lake County LHMP Update Project and is in process with the Cities of Clearlake and Lakeport.

Foster Morrison Team Strengths

- Development of the recent FEMA-approved Lake County LHMP Update; in-process with development of LHMPs for the Cities of Clearlake and Lakeport
- Experience and familiarity with local agencies and personalities in Lake County
- Demonstrated experience developing FEMA-approved single and multi-jurisdictional LHMPs for numerous California communities
- Detailed knowledge of FEMA (DMA, FMA, CRS) and state planning requirements and guidance and strong working relationship with Cal OES and FEMA Region IX.
- Knowledge of northern California hazards and risks, past disaster history, local governments, and data sources.
- Extensive experience developing and portraying hazard risk assessment studies supported by Hazus and GIS.
- Emphasis on a strong planning process that includes high levels of public, community, and stakeholder involvement and strong meeting facilitation.
- Experience leveraging hazard mitigation funding for our clients.
- Experience with grant application development, grant management, and EHP clearances for FEMA funded projects.

Team Capacity, Availability, and Ability to Perform

The Foster Morrison team fully meets all the requirements necessary for providing high quality hazard mitigation planning services for the HVLCSD. Our team has a proven track record in providing clients with responsive and timely service to meet project objectives, schedules and changing work needs. We are committed to working on the District's LHMP project and will make staff available to complete work associated with this project in a timely fashion. As small businesses, the Foster Morrison team has great flexibility in scheduling of work and will make staff available to complete any work associated with this proposal in a timely fashion while ensuring all project objectives are met and delivery of a high-quality work product. At particular stages of the project, individual team members will be required to devote a substantial part of their effort to the work, perhaps even 100% of their capacity, at other times, project demands on individuals will be less. Additional planning staff from both Foster Morrison and Howell Consulting can also be called upon as needed to expand resources, as we have done together as a team on numerous recent LHMP projects. Managing the variable and competing demands of many projects is a natural and necessary part of the Foster Morrison team's practice and is something that we have done successfully since our inception. The anticipated volume of work from this contract is well within our team's capacity to execute efficiently and effectively. The Foster Morrison team commits our team and resources to the District for this LHMP project, and will deliver the LHMP both on schedule and within the budget.

Project Management

The Foster Morrison team fully meets the requirements for providing the HVLCSD with a FEMA-approved LHMP. We are committed to managing this LHMP to meet the project scope, schedule, and budget. Jeanine Foster, the proposed project manager for this project, will provide the project management and project administration for this LHMP. This will include coordination meetings, communications, and monthly progress reports pertaining to the work, budget, and schedule. Regular communication and close coordination with the HVLCSD will be paramount to the successful and timely completion of this LHMP.

3. Foster Morrison Team's Experience

This section provides a summary of Foster Morrison staff LHMP and LHMP Update projects in California, both completed and ongoing, within the last five years. **The following projects were all managed by Jeanine Foster and performed by the key staff identified in primary roles for the development of this HVLCSD LHMP.** This list includes seven recent LHMP projects working with Howell Consulting: City of Clearlake, City of Lakeport, Lake County, Colusa County, Nevada County, City of Piedmont, and the Los Angeles Unified School District.

Project Description for Table 2 Projects

All of the California projects detailed in Table 2 were completed in accordance with DMA, FMA and CRS planning process requirements and guidance which incorporates a 10-step process into four phases: 1) LHMP Planning/Development Process, 2) Risk Assessment, 3) Mitigation Strategy, and 4) Plan Implementation and Maintenance. Execution of the 10-step process for each of these mitigation planning projects resulted in FEMA-approved plans customized to meet the needs of each community. The plan development process and resulting plans include: data-driven risk assessments; previous mitigation projects and successes; comprehensive mitigation strategies; development and coordination of public outreach and stakeholder engagement programs; facilitation of planning team and public meetings; and a thorough, systematic, and fully documented planning process. All of the completed plans were reviewed and approved by the state and FEMA with no or minimal requests for revisions. Other identified plans are either in-development or in Cal OES or FEMA review. Table 2 details Foster Morrison staff completed and in-process California LHMP and LHMP Updates within the last five years.

Table 2 Foster Morrison Staff Hazard Mitigation California Planning Experience since 2013

Project Name	City of Lakeport, CA Local Hazard Mitigation Plan – In Process
Organization	City of Lakeport Public Works, 591 Martin St, Lakeport, CA 95453
Contact Information	Michell Humphrey, (707) 263-3578; mailto:mhumphrey@cityoflakeport.com
Project Description	Single-jurisdictional DMA plan
Plan Duration*	TBD – In planning stages
--Development Time	11 months
--Agency Review	TBD – In process
Contract Value/Cost	\$92,000/Just starting
Project Name	City of Clearlake, CA Local Hazard Mitigation Plan – In Process
Organization	City of Clearlake Planning Department, 14050 Olympic Dr, Clearlake, CA 95422
Contact Information	Adeline Brown, (707) 994-8201 x341; mailto:abrown@clearlake.ca.us
Project Description	Single-jurisdictional DMA plan
Plan Duration*	TBD – In planning stages
--Development Time	10 months
--Agency Review	TBD – In process
Contract Value/Cost	92,000/In process
Project Name	City of Piedmont, CA Local Hazard Mitigation Plan Update – In Process
Organization	City of Piedmont Planning Department, 120 Vista Ave, Piedmont, CA 94611
Contact Information	Chris Yeager, Assistant Planner; (510) 420-3039; cyeager@piedmont.ca.gov
Project Description	Single-jurisdictional DMA plan
Plan Duration*	TBD – In planning stages
--Development Time	8 months
--Agency Review	TBD – In process
Contract Value/Cost	\$62,500/In process
Project Name	Colusa County, CA Local Hazard Mitigation Plan Update – In Final Stages
Organization	Colusa County Sheriff's Office, Office of Emergency Services, 929 Bridge St, Colusa, CA 95932
Contact Information	Janice Bell – OES Technician, (530) 458-0218; jbell@colusasheriff.com
Project Description	Multi-jurisdictional DMA Plan; County and 2 incorporated communities
Plan Duration*	TBD – In final stages
--Development Time	10 months
--Agency Review	TBD – In process
Contract Value/Cost	\$99,876/In-final stages
Project Name	Los Angeles Unified School District, CA Local Hazard Mitigation Plan Update – FEMA-Approved (2018)
Organization	Los Angeles Unified School District, Office of Environmental Health and Safety, 333 South Beaudry Avenue, Los Angeles, CA 90017
Contact Information	Bill Piazza - Environmental Assessment Coordinator, (213) 241-2576; bill.piazza@lausd.net
Project Description	Single-jurisdictional DMA Plan
Plan Duration*	12 months
--Development Time	10 months
--Agency Review	2 months
Contract Value/Cost	\$148,982/\$148,982

Project Name	Lake County, CA Local Hazard Mitigation Plan Update– FEMA-Approved (2018)
Organization	Lake County Office of Emergency Services, 1220 Martin Street, Lakeport, CA 95453
Contact Information	Dale Carnathan – Emergency Services Manager, 707-263-3450; dale.carnathan@lakecountyca.gov
Project Description	Single-jurisdictional DMA Plan
Plan Duration*	11 months
--Development Time	9 months
--Agency Review	2 months
Contract Value/Cost	\$97,251/\$97,251
Project Name	City of Azusa, CA Local Hazard Mitigation Plan – In final stages
Organization	City of Azusa Planning Division, 213 E. Foothill Blvd., Azusa, CA 91702
Contact Information	Kurt Christiansen – Assistant Planner, (626) 812-5236; kchristiansen@ci.azusa.ca.us
Project Description	Single-jurisdictional DMA Plan
Plan Duration*	TBD – In final stages
--Development Time	11 months – In final stages
--Agency Review	TBD – In final stages (Project on client hold for 12+ months)
Contract Value/Cost	\$74,031/In-final process - \$74,031 will reflect final cost
Project Name	Madera County, CA Local Hazard Mitigation Plan Update– FEMA-Approved (2018)
Organization	Madera County Sheriff's Office, 2725 Falcon Dr, Madera, CA 93637
Contact	Joseph Wilder - Sergeant
Contact Information	(559)-675-7770; jwilder@co.madera.ca.gov
Project Description	Multi-jurisdictional DMA Plan; County, 2 incorporated communities and 1 Tribe
Plan Duration*	13 months
--Development Time	7 months
--Agency Review	6 months
Contract Value/Cost	\$109,237/\$112,500 (to include contract mod for additional work)
Project Name	Nevada County, CA Local Hazard Mitigation Plan Update– FEMA-Approved (2018)
Organization	Nevada County Office of Emergency Services, 10014 N Bloomfield Rd, Nevada City, CA 95959
Contact Information	John Gulserian – Program Manager, (530) 265-1515; John.Gulserian@co.nevada.ca.us
Project Description	Multi-jurisdictional DMA Plan; County, 3 incorporated communities and 3 special districts
Plan Duration*	13 months
--Development Time	7 months
--Agency Review	6 months
Contract Value/Cost	\$97,920/\$97,920
Project Name	City of San Rafael, CA Local Hazard Mitigation Plan – FEMA Approved (2017)
Organization	City of San Rafael Fire Department, 1039 C St, San Rafael, CA 94901
Contact Information	Robert Sinnott – Deputy Chief, (415) 485-3304, Robert.Sinnott@cityofsanrafael.org
Project Description	Single- jurisdictional DMA Plan
Plan Duration	13 months
--Development Time	8 months
--Agency Review	5 months
Contract Value/Cost	\$69,660/69,656.67

Project Name	Modoc County, CA Local Hazard Mitigation Plan – FEMA Approved (2016)
Organization	Modoc County Office of Emergency Services, 102 South Court Alturas, CA 96101
Contact Information	A.J. McQuarrie - Deputy Director, (530)233-4416; ajm@modocsheriff.us
Project Description	Multi-jurisdictional DMA Plan; County and 1 incorporated community
Plan Duration* --Development Time --Agency Review	19 months (Total Duration Kickoff to Final FEMA Approval Pending Adoption) 11 months 8 months
Contract Value/Cost	\$69,832/\$69,832
Project Name	Sacramento County, CA Local Hazard Mitigation Plan – Original Plan and 2 Plan Updates - FEMA Approved (2005, 2011, 2016)
Organization	Sacramento County Department of Water Resources, 827 7th St #301, Sacramento, CA 95814 City of Sacramento Public Works, 1395 35th Ave, Sacramento, CA 95822
Contact Information	George Booth –Manager of Sacramento County Drainage Development, Hydrology and Floodplain Management Department (916) 874-6484; boothg@SacCounty.net Kelly Sherfey – City of Sacramento Department of Utilities (916) 808-2539, ksherfey@cityosacramento.org
Project Description	Multi-jurisdictional DMA/CRS Plan; County, 7 incorporated communities, and 20 special districts
Plan Duration* --Development Time --Agency Review	14 months (Total Duration Kickoff to Final FEMA Approval Pending Adoption) 9 months 5 months
Contract Value/Cost	\$169,265/169,265
Project Name	Placer County, CA Local Hazard Mitigation Plan – Original Plan and 2 Plan Updates - FEMA Approved (2005, 2010, 2016)
Organization	Placer County Office of Emergency Services, 175 Fulweiler Ave # 205, Auburn, CA 95603
Contact Information	Rod Rodriquez, Senior Emergency Services Specialist, (530) 886-5300, yrodrigu@placer.ca.gov
Project Description	Multi-jurisdictional DMA/CRS Plan; County, 5 incorporated communities, and 15 special districts
Plan Duration* --Development Time --Agency Review	14 months (Total Duration Kickoff to Final FEMA Approval Pending Adoption) 11 months 3 months
Contract Value/Cost	\$148,593/\$148,593
Project Name	Calaveras County, CA, Local Hazard Mitigation Plan – Original Plan and Plan Update - FEMA Approved (2010, 2015)
Organization	Calaveras County Sheriff's Office, 891 Mountain Ranch Rd, San Andreas, CA 95249
Contact Information	Sherri Munson, Sheriff Services Technician III, Financial Services/OES (209) 754-2888, SMunson@co.calaveras.ca.us
Project Description	Multi-jurisdictional DMA Plan; County and one incorporated community
Plan Duration* --Development Time --Agency Review	9 months (Total Duration Kickoff to Final FEMA Approval Pending Adoption) 7 months 2 months
Contract Value/Cost	\$48,000/\$48,000

* Plan duration is dependent on Agency Review time. Development time reflects planned schedule from project kickoff to Cal OES submittal.

Client References

Client references for similar LHMP projects conducted in California over the last five years are detailed above in Table 2 of this proposal. This includes recent projects performed by both Foster Morrison and Howell Consulting. We encourage the District to contact these references as they can attest to the experience, expertise, and professionalism of Foster Morrison and Howell Consulting and the quality of our Local Hazard Mitigation Plans and planning process.

4. Project Understanding, Approach, and Scope of Work

HVLCSD is requesting the services of a consultant to assist the District in assessing hazards and risks that pose a threat to the District, to identify local resources and capabilities that can assist the District in the mitigation of hazards; and to produce the HVLCSD single-jurisdiction, FEMA-approved LHMP.

Foster Morrison and Howell Consulting have combined staff to provide the HVLCSD with an LHMP that is tailored to the unique needs of the District. This section includes our project understanding, approach, and scope of work and schedule designed to meet and exceed all of the HVLCSD's expectations to provide the District with a FEMA-approved LHMP.

Project Understanding

Hidden Valley Lake is a census-designated place and gated subdivision located in rural, southern Lake County, in northern California. The population was 5,579 at the 2010 census, up from 3,777 at the 2000 census. Today, it is a Common Interest Development known as Hidden Valley Lake Association HVLA. The HVLCSD services this area with water, wastewater, and reclaimed water services. Bordered on the west by State Route 29, the HVLCSD service territory is located approximately 80 miles northeast of San Francisco and 14 miles to the south of the City of Clearlake. Hidden Valley Lake is located in the mountains at about 3,500 feet of elevation. The south side of the lake is almost completely forested, and the north side is a mixture of woods and open lands.

The climate of the HVLCSD area is classified as temperate and semiarid. Summers are dry and warm, and winters are wet and mild. Average monthly temperatures vary from the 80°F range in July to the 40°F range in January. Annual precipitation averages 25 inches; more than 50 percent of the annual precipitation normally occurs from December through February. The area's economy is based primarily on agriculture and water-oriented recreation. The seasonal population is often more than twice the permanent resident population and the demand for services increases accordingly.

Given the geography, topography, and climate of the area, the District is vulnerable to numerous hazards as identified in the 2018 Lake County LHMP. That plan stated that the unincorporated County is subject to drought, earthquake, flooding (dam failure, localized, and 100/500-year flooding), landslides, severe weather, wildland fires, and volcano. There have been 23 federal disaster declarations (most of them related to the hazards above) for Lake County since 1953, making it one of the more disaster-prone counties in California.

Recently, Lake County and the District were in the midst of a severe to extreme drought as defined by the U.S. Drought Monitor. Preliminary data shows that 2013 was the driest year in California since 1878, and 2012 also was a dry year. In January of 2014, Governor Brown declared a State of Emergency due to the drought. The drought persisted through 2016; however, due to El Nino storms in late 2016 and 2017 the drought had abated. In 2018, drought conditions have begun to return.

Due to the increased stress on forested and grassland areas due to the drought and increased tree mortality, wildfire risk in the County had increased. This is exemplified by the 2015 and 2016 fires that struck the County. In the months of July, August, and September of 2015, Lake County suffered three separate devastating wildfires; the cumulative damage of these fires includes 171,000 acres of wild land, forest, and residential properties being burned out, the loss of 1,329 homes and damage to over 70 commercial properties. In response, a federal disaster declaration was declared. The fire ultimately spread to 76,067 acres, killed four people, and destroyed nearly 2,000 buildings. Portions of the south end of Hidden Valley Lake were burned during the Valley Fire. The fire was the third-worst fire in California history based on total structures burned.



The 2016 Clayton Fire struck the County the following year. The blaze, which authorities say was intentionally set Aug. 13 near Clayton Creek Road and Highway 29, burned nearly 4,000 acres and destroyed 300 structures, including 188 homes and 10 commercial buildings. This resulted in a federal disaster declaration. In 2018, the Mendocino Complex fire struck Lake County. The Mendocino Complex Fire was the largest recorded fire complex in California history. It was a large complex of two wildfires, the River Fire and Ranch Fire. It ultimately burned 459,123 acres and resulted in a federal disaster declaration. While this fire did not affect the District directly, it continues to show the potential for catastrophic wildfires in Lake County. Wildfire is a hazard of great significance to HVLCSD and Lake County as a whole.

While the current drought had led to a lack of flooding in recent years, the threat of flooding in the County remains. In fact, due to drought conditions, the likelihood of flooding due to heavy rains may have actually increased. Extreme droughts reduce the soil's ability to absorb water quickly. Should a heavy rain occur, the parched ground is likely to absorb a small amount of precipitation, with the remainder becoming runoff. This can cause localized flooding, as well as quickly increase stream flows, causing flash flooding. This has happened in California in January of 2017. While the heavy rains filled reservoirs and effectively stopped a three-year drought, damages from flooding occurred and continue to occur in multiple counties, including Lake County. A federal disaster declaration (DR-4301) was issued on February 14, 2017. Continuing economic development within the HVLCSD service territory is expected, and pressures leading to intensified floodplain use will undoubtedly accompany such development.

In addition, the State of California has put an increased emphasis on climate change and its effects on natural hazards. Climate change can exacerbate other hazards like drought, extreme weather, flood, and wildfire.

Project Approach

The primary purpose of this LHMP planning project is to reduce long-term risk and loss to people and property from identified hazards and to make the HVLCSD more disaster resistant and better able to recover when a disaster does occur. This LHMP will address all hazards of significance to the District and will be developed pursuant to the requirements of Disaster Mitigation Act (DMA) of 2000, published at 44 CFR 201.6 and most current guidance, the Flood Mitigation Assistance (FMA) program, and the National Flood Insurance Program (NFIP)'s Community Rating System (CRS) program. The Foster Morrison team will conduct all work necessary to provide the HVLCSD with a Cal OES/FEMA-approved LHMP.

A FEMA-approved LHMP will make the District eligible for FEMA pre- and post-disaster funding. In addition, this LHMP will be compliant with the requirements of SB 379 (Climate Adaptation) and will be consistent with the goals and objectives outlined in the 2018 State of California Hazard Mitigation Plan. The HVLCSD LHMP will be prepared utilizing the process shown in Table 3.

Table 3 Hazard Mitigation Planning Process

Disaster Mitigation Act Planning Regulations (44 CFR 201.6)	CRS/FMA Planning Steps
Phase I: Planning Process	
201.6(c)(1)	1. Organize Resources
201.6(b)(1)	2. Involve the Public
201.6(b)(2) & (3)	3. Coordinate with Others
Phase II: Risk Assessment	
201.6(c)(2)(i)	4. Assess the Hazard
201.6(c)(2)(ii) & (iii)	5. Assess the Problem
Cal OES/FEMA requirement	Assess the Capabilities
Phase III: Mitigation Strategy	
201.6(c)(3)(i)	6. Set Goals
201.6(c)(3)(ii)	7. Review Possible Activities
201.6(c)(3)(iii)	8. Draft an Action Plan
Phase IV: Plan Maintenance	
201.6(c)(5)	9. Adopt the Plan
201.6(c)(4)	10. Implement, evaluate, revise

Senate Bill 379

The HVLCSD LHMP will be written to accommodate Senate Bill 379. California SB 379 requires communities to include climate adaptation and resiliency strategies in the safety elements of their general plans. The bill requires that the climate adaptation component should include a set of goals, policies, and objectives for their communities based on the vulnerability assessment, as well as implementation measures, including the conservation and implementation of natural infrastructure that may be used in adaptation projects. While not a City or County with a specific General Plan requirement, this HVLCSD LHMP will consider and incorporate climate change data, issues, and resulting mitigation strategies.

Project Goals and Benefits

The Foster Morrison team will provide the HVLCSD with a FEMA-approved LHMP designed to meet and exceed all their planning goals. This LHMP will be developed to achieve the following project goals and benefits:

- Develop a FEMA-approved, DMA-compliant, LHMP for the HVLCSD
- Align the LHMP with local community and regional plans and the 2018 State of California Hazard Mitigation Plans and incorporate regional and corresponding strategies as appropriate
- Build partnerships with diverse stakeholders and increase opportunities to leverage data and resources
- Ensure that the HVLCSD achieves SB 379 (climate change) compliance
- Improve public safety and local resiliency to damage from identified hazards, thus reducing the impact and cost of disasters to the District and taxpayers
- Position the District to compete more effectively for pre- and post-disaster mitigation and recovery funding
- Increase public awareness and understanding of hazards, vulnerabilities, and support for Mitigation Actions to reduce future hazard-related losses
- Speed community recovery when disasters occur

Scope of Work

Foster Morrison has reviewed the District's scope of work for an LHMP and represent that we are capable of providing and performing quality work to execute the scope of work as described and to achieve all District goals. The scope will involve completion of background and technical work to support a comprehensive hazard risk assessment; coordinating with District staff, conducting public outreach, and facilitating the planning process; formulating and facilitating the mitigation strategy; and providing all deliverables necessary to comply with state and federal mitigation planning regulations and guidance resulting in a Cal OES compliant and FEMA-approved LHMP. **The resulting LHMP will be a clear, action-oriented document which will serve the District and will identify actions which can be taken to reduce local risk and disaster-related losses from future hazard events.** The details of the planning process and how the HVLCS D will meet the goals of this LHMP project are outlined further below in this scope of work.

Phase I: LHMP Planning/Development Process

The HVLCS D is the lead agency overseeing the planning process and development of the LHMP. The Foster Morrison team will work closely with the District to further define project goals and to clarify the mission and vision of the plan and its resulting mitigation activities.

Task 1: Organize Resources

Following a Notice to Proceed (NTP) and as part of organizing resources and pre-planning for this project, the HVLCS D and Foster Morrison will hold a conference call to review the project scope and schedule; discuss planning team participation and coordination; identify initial data sources and contacts; and plan the project kickoff meeting. Foster Morrison will work with the District to identify key community planning participants; will develop all meeting materials; and will facilitate all planning team and public meetings for this project.

Hazard Mitigation Planning Committee

A coordinated, engaged Hazard Mitigation Planning Committee (HMPC) comprised of key District and community stakeholders is critical to a successful mitigation planning process and resulting LHMP. Representatives from the District, other agencies, neighboring communities, and public and private stakeholders with an interest in hazard mitigation activities in the HVLCS D will be invited to participate in the LHMP development process through membership on the HMPC. In addition to jurisdictional participants, committee members may include city and county residents, community leaders, government officials, local utilities, and business owners to provide for a representative cross-section of the community. Foster Morrison will facilitate the work of the HMPC with leadership and support provided by the District.

Jurisdictional (HVLCS D) Participation and Work Assistance Requirements

The HVLCS D, requesting development of a FEMA-approved LHMP, is required to participate in the LHMP planning process as set forth by DMA regulations and guidance. For this LHMP, it is assumed that the HVLCS D will be the single participating jurisdiction required to comply with the following participation elements to receive FEMA plan approval:

- Provide representation on the HMPC, attend meetings, and participate in the planning process
- Assist in providing data, identifying hazards, risks and how the risk differs across the District planning area
- Identify, prioritize, and develop mitigation actions/projects for the District
- Distribute, review, and provide timely comments on the draft plan(s)
- Coordinate the public outreach process, attend public meetings to solicit input from community stakeholders
- Formally adopt the LHMP
- Manage the implementation of the resulting mitigation plan

All other jurisdictions and public and private stakeholders will be asked to support the planning process through representation on the HMPC, providing data and input for the risk assessment and mitigation strategy; and reviewing and providing input on plan drafts prior to finalization and submittal to Cal OES and FEMA.

Kickoff Meeting

At the beginning of the process, a kickoff meeting of the HMPC (HMPC Meeting #1) will be held to present information on the hazard mitigation planning regulations and guidance, participation requirements, and project scope and schedule. Agency and stakeholder coordination and an initial strategy for public information and outreach will also be considered during this kickoff meeting.

Task 2: Public Involvement

Foster Morrison will work together with the District and HMPC to define a public information outreach strategy to ensure an effective public involvement process. Public outreach and community engagement efforts will be designed to educate the public on risks and vulnerability to identified hazards and the hazard mitigation planning process. This process will focus on soliciting input from the public to better inform the LHMP throughout the planning process and prior to submittal to Cal OES/FEMA.

Community engagement activities will leverage existing District outreach mechanisms where available and may include: inviting public stakeholders to serve on the HMPC; publicizing the activities of the LHMP development process through the District's website and social media; issuing press releases to local media outlets; hosting public meetings; and other outreach efforts to maximize engagement by all stakeholders. All outreach and coordination efforts and resulting input will be documented in a separate planning process appendix to establish a record for future efforts and to facilitate review and approval of the LHMP by Cal OES and FEMA. Foster Morrison will be responsible for preparing public notices and other materials and content for the public outreach effort.

Two public meetings will be held as part of the public involvement process. Each meeting will focus on educating the public on the LHMP and identifying community concerns. These public meetings will be held separate from the HMPC meetings and will be properly advertised. An early public meeting will be designed to provide an introduction to hazard mitigation planning and the LHMP development process. The second public meeting will be held to solicit public comments on the draft plan prior to finalization and submittal to Cal OES/FEMA. Public comments will be incorporated by Foster Morrison as appropriate.

Task 3: Coordinate with Other Agencies

DMA regulations require that the mitigation planning process include other organizations, agencies, neighboring communities, and key stakeholders. Representatives from local, state, and federal agencies and organizations with significant interests in the community, local land use development, natural hazards, and/or mitigation may be invited to join the HMPC or to provide other input into this LHMP planning process. This will include soliciting input regarding hazards, the prioritization of hazards, and the development of best practice mitigation approaches for each identified hazard of concern.

Data Collection and Review

Foster Morrison staff will work closely with the District and HMPC to identify key resources and data to support the LHMP. In accordance with DMA standards, the LHMP will utilize best available data pertaining to identified hazards of concerns, risks, vulnerabilities, community assets and critical facilities, and existing community mitigation capabilities. The most current GIS datasets and local assessor data will also be collected to support the risk assessment analysis.

Coordination with Other Planning Efforts

Also integral to the DMA planning process is the coordination and integration with other community planning mechanisms as well as with other data and information from stakeholders and agencies. Foster Morrison will work with the District and HMPC to identify and review District and other agency existing plans, programs, and policies from general and master plans, emergency operations plans, fire plans, drought plans, floodplain management plans, watershed plans, stormwater master plans, capital improvement program planning and budgeting, and other relevant documents. These plans will be evaluated and integrated into this LHMP as appropriate. Foster Morrison will also work to ensure that the LHMP is aligned with the goals, objectives, and priorities of the 2018 State of California Hazard Mitigation Plan.

Phase II: Risk Assessment

Foster Morrison will work with the District and HMPC to develop the hazard risk assessment. This multi-hazard risk assessment will include hazards of concern to the District and will use best available data to evaluate the risk and vulnerability from identified hazards. Where hazards and risks vary across the planning area, the differences will be noted. The risk assessment will assist the District in understanding and quantifying its risks and vulnerability to identified hazards and will form the basis of the mitigation strategy designed to reduce or eliminate risks and to reduce losses from future hazard events. As prescribed by DMA requirements, the risk assessment includes three primary components: 1) hazard identification and profiles; 2) vulnerability assessment; and 3) capability assessment.

Task 4: Assess the Hazard – Hazard Identification and Profiles

The first step in assessing the hazard is to identify and profile hazards as they affect the HVLCS D. This will include an evaluation of the hazard history and potential for both the District and region to be affected by various hazards. Hazards identified in existing plans, studies, and data available from local, state, and federal sources will be consulted. The 2018 State of California Hazard Mitigation Plan, the 2108 Lake County LHMP, and local plans and efforts from the HVLCS D will also be reviewed for their current list of hazards. Hazards to be evaluated for inclusion in this LHMP include: flood-related hazards, earthquake hazards, wildfire hazards, severe weather-related hazards, drought, climate change hazards, and other hazards identified by the District and HMPC. The end result will be a finalized list of hazards of concern to the District.

For each identified hazard, hazard profiles will be developed to include a description of hazards that have or may occur within the District. This profile will include: a description of the hazard and its location and extent; severity and magnitude of the hazard; potential impacts; previous occurrences; hazard frequency, duration, speed of onset, and recurrence interval (probability of future events). The hazards will be mapped and analyzed using GIS (as described further below) and/or other data and methodologies to identify and analyze areas within the District that are at risk and vulnerable to identified hazards.

In addition, as mandated by the State, climate change issues will be considered and addressed to the extent they affect or exacerbate identified hazards. Utilizing the hazard identification and profiles, an initial prioritization of hazards will be conducted for the District to rank the relative importance of each hazard for further consideration in the plan development process. Based on input from the District and HMPC, each hazard will be ranked into categories based on high, moderate, and low risk factors.

Task 5: Assess the Problem: Vulnerability Assessment

The next step of the risk assessment phase is to conduct a vulnerability assessment to determine the vulnerability of the District to identified priority hazards. The Foster Morrison team will evaluate available data and resources to determine the best approach and methodologies for analyzing community vulnerability to identified hazards of concern. Selected methodologies may include utilizing various loss estimation tools such as GIS mapping and

analysis and Hazus (FEMA's loss estimation software) runs to assist in quantifying and portraying the risk from identified hazards to support mitigation strategy development and future community planning decisions.

Identify and Inventory Assets

The vulnerability assessment is designed to evaluate and quantify, where possible, potential hazard-related losses to the District. Critical to this analysis is conducting an inventory of key District assets. Federal, state, local, and community GIS resources, Lake County Assessor's and GIS data, and other best available data will be used to develop a comprehensive inventory of assets specific to the District and located in identified hazard areas which will be displayed in area maps and tables as data permits. It is important to note the goal of using best available existing data where feasible and to supplement as appropriate and necessary. Foster Morrison will work with the District and HMPC to identify existing District and regional data and analyses. To the extent supported by available data, the following elements will be addressed:

- Number, types (property use), and values of existing parcels and buildings in the District and in mapped hazard areas, based on GIS and County Assessor data
- Identification of at risk populations and special populations, including access and functional needs populations
- Critical facilities, infrastructure, utilities, and services
- Estimates of potential dollar losses per hazard utilizing Hazus or GIS
- Economic impact of potential losses
- Natural, cultural, and historic resources at risk, including natural and beneficial functions
- Land use, development trends, and future development areas in the District and in identified hazard areas

Estimate Potential Losses

Once the hazards and assets have been identified, profiled, and located, Foster Morrison will utilize established loss modeling techniques to estimate potential losses for priority hazards. For common hazards, such as earthquake, wildfire, and flood, Foster Morrison can make use of methods from past work, from GIS overlays of hazard and parcel/assessor data, and from FEMA publications and models, specifically Hazus and other recognized methodologies. For hazards with insufficient data or tools for identifying vulnerable assets and estimating losses, other methods will be used to identify those geographical areas and assets most at risk.

Analyze Development Trends

DMA planning requires an analysis of the existing built environment and future development relative to potential hazard impacts. Understanding the current land use, zoning, development trends, and future development plans within a community is a key component of the risk assessment. This will include identification and mapping of existing and proposed District areas identified for future development. The results of this assessment will provide the District with critical information for developing a sound, forward-thinking mitigation strategy as well as determining where and how to grow in the future.

Capability Assessment

The capability assessment is the final step of the risk assessment. Foster Morrison will conduct a capability assessment to identify existing technical, financial, and other mitigation capabilities of the HVLCSO. By collecting information about existing capabilities, the District and HMPC can assess those activities and measures already in place that mitigate risk and vulnerability to identified hazards and to support the development of effective mitigation strategies.

Hazard Prioritization

Following completion of the risk assessment, Foster Morrison will work with the District and HMPC to prioritize hazards of significance based on high, medium, and low risk factors. This final prioritization process is an

important element in plan development as it allows the District to focus resources on significant hazards to the community, resulting in a more focused, achievable mitigation strategy for the plan. The results of the risk assessment will be presented at HMPC Meeting #2.

Phase III: Develop Mitigation Strategy (Plan)

The mitigation strategy is ultimately the most important part of the plan. While the risk assessment defines the risks and vulnerability of a planning area, the mitigation strategy contains the mitigation action items and projects that will be implemented over the five-year life of this LHMP to reduce hazard-related losses, make the community more disaster resistant, and to better recover when disasters do occur.

During the mitigation strategy development phase of this LHMP, Foster Morrison will develop a complete plan draft that will: document the mitigation planning process; document the results of the risk assessment; detail plan goals and objectives; and identify and prioritize mitigation actions designed to minimize the effects of hazards on the HVLCSD planning area.

Task 6: Set Goals

Using the results of the risk assessment, Foster Morrison will work with the District and HMPC to develop hazard mitigation and adaptation goals and objectives for the LHMP. The goals and objectives will reflect the community's long-term vision to reduce the risk to people and property within the District and will focus on enhancing overall mitigation capabilities.

Goals and objectives from other District plans and policies, as well as other agency and state plans and policies, will be compiled and analyzed to ensure consistency with existing programs and other plan goals and objectives. Plan goals and objectives will be developed during Planning Meeting #3.

Task 7: Review Possible Activities

Once plan goals and objectives have been developed for the HVLCSD, Foster Morrison will work with the District and HMPC to identify, analyze, and prioritize a comprehensive range of mitigation actions and projects.

Utilizing the risk assessment and considering other ongoing community mitigation programs policies and plans, mitigation actions will be developed with input from the District and HMPC. The review and assessment of mitigation actions and projects will occur at HMPC #4, where a comprehensive range of potential mitigation actions will be identified for each priority hazard designed to reduce hazard impacts and disaster losses and to meet the LHMP goals and objectives. Identified mitigation projects will address the effects of hazards on future development and new structures as well as on existing buildings and infrastructure. In developing mitigation alternatives, this plan will adhere to the model of mitigation activities promoted by DMA and CRS, which classifies mitigation measures into the following six categories: Prevention, Property Protection, Emergency Services, Structural Projects, Natural Resource Protection, and Public Information Programs.

The mitigation actions will be reviewed to ensure best practices and to identify mitigation partnerships where feasible. The end result of this mitigation planning process will be a list of prioritized hazard mitigation action items that best meet the HVLCSD's needs for hazard damage reduction.

Task 8: Draft an Action Plan: Mitigation Implementation Strategy

Upon finalization of goals and objectives and mitigation actions and projects, the District and HMPC will develop priority actions for inclusion in the mitigation strategy portion of the plan. A comprehensive, prioritized mitigation strategy is paramount in focusing community resources to reduce District vulnerability to the destructive consequences of hazards and to promote efficient recovery and reconstruction when disasters do occur.

This process will involve using a set of criteria, a “scoring” system, for prioritizing potential mitigation actions and projects to ensure that they: are reasonable and achievable; reflect the priorities of the District and are based on the risk assessment. Fundamental to the prioritization process for mitigation measures are key factors such as life, property, health, and safety protection, as well as qualitative cost benefit considerations and the availability of FEMA or other funding sources for any given project. The STAPLEE approach promoted by FEMA will be used as a framework for developing additional prioritization criteria. The STAPLEE approach analyzes the **S**ocial, **T**echnical, **A**dministrative, **P**olitical, **L**egal, **E**conomic, and **E**nvironmental feasibility of proposed mitigation actions.

Foster Morrison will work with the District and HMPC to develop an implementation strategy plan for each identified mitigation project that will provide information on project implementation, including a description of the project details, risk reduction goals, alternative actions considered, benefit-cost considerations, possible funding sources, project schedule, and responsible agency. The end result will be a mitigation action strategy of prioritized projects for the HVLCSD planning area.

Task 8a: Draft Plan

Using state and federal guidance to ensure that all DMA requirements are being met, a complete first draft of the LHMP will be prepared for review by the District and HMPC. This will result in a comprehensive LHMP that presents all relevant data and includes a community profile/demographics, planning process, risk assessment, mitigation strategy implementation plan, and procedures for plan maintenance.

Document the Mitigation Planning Process

The plan development process will be thoroughly documented, including the evaluation of risks and vulnerability of hazards to the HVLCSD planning area and the process used to identify, analyze, and prioritize the mitigation strategy. A separate planning process chapter will be developed to document the plan development process, which will include establishing a record of meetings and participation. This chapter will also detail coordination with other agencies and integration with other planning mechanisms as well as the process that will be used to implement and maintain the LHMP. A detailed description of the public outreach and education strategies implemented for this LHMP will be included and thoroughly documented.

Plan Review and Finalization Process

A complete first draft of the LHMP will be provided to the District and HMPC for review and comment. The District and HMPC’s comments and revisions will be incorporated into a second public review draft and distributed to the stakeholders and the public for review and comment via the District website. All public and private stakeholders will have an opportunity to provide input to the plan, both during the drafting stage and prior to submittal to Cal OES/FEMA. A public meeting will be held to solicit comments on the draft plan and proposed mitigation strategies prior to submittal to Cal OES/FEMA as described in Task 2 of this Scope. A final HMPC meeting, HMPC Meeting #5, will be held to discuss any public comments and final input into the plan document.

Phase IV: Plan Maintenance Process

Task 9: Final Plan Submittal and Adoption

Based on feedback from the public meeting and final input during HMPC Meeting #5, a final draft in both digital and hard copy will be developed for submittal to Cal OES and FEMA for preliminary review and approval. Based on this review, requested changes to the draft LHMP will be made and a master electronic and hard copy of the LHMP will be developed to assist with District adoption. Foster Morrison will be responsible for preparing materials necessary for HVLCSD Board of Directors consideration and to support Board adoption of the LHMP. Foster Morrison is prepared to attend up to three Board of Directors’ meetings throughout the planning process to support this effort.

Foster Morrison will make all revisions and will work with Cal OES and FEMA to ensure that the LHMP receives approval from Cal OES and FEMA for formal adoption by the HVLCSD.

Task 10: Develop Procedures to Implement, Monitor, and Update the Plan

Foster Morrison will work with the District to determine procedures and a schedule for implementing, monitoring, evaluating, and updating the HVLCSD LHMP. The plan maintenance requirements will be developed to ensure the plan is a living document updated annually to reflect new and changing hazards, conditions, and new state and federal requirements. This will include:

- A method and schedule of implementing, monitoring, evaluating, and updating the plan, which includes criteria used, responsible office, and process for annual reviews and a formal five-year update.
- A process by which the plan will be incorporated into other existing planning mechanisms and requirements such as the District EOP, master plan, capital improvement program, and other related planning mechanisms.
- A discussion of how the District will continue to involve the public in the plan maintenance and update process and documentation of all public involvement activities.

Project Schedule

Generally, the LHMP development process takes 12 to 16 months, or longer, from project kickoff to plan submittal and approval by Cal OES and FEMA. Foster Morrison can initiate this project immediately with an executed agreement with the HVLCSD. With an agreement signed and a project start by November 20, 2018, Foster Morrison is prepared to conduct all plan development activities and submit the completed LHMP to Cal OES/FEMA by June 14, 2019. This schedule is dependent on timely participation by the District. An anticipated schedule is shown in Table 4. Key milestones, including review timeframes, are also noted below:

- Kickoff meeting (HMPC Meeting #1) and Public Meeting #1 – November 2018
- HMPC Meeting #2 (Risk Assessment) –January 2019
- HMPC Meetings #3 and #4 (Mitigation Strategy)–February 2019
- District/HMPC (First) Draft LHMP – March 2019
- District/HMPC comments – March 2019
- Comments incorporated into Public Review (Second) Draft – April 2019
- Public review period/ Public Meeting #2 and HMPC Meeting #5 – May 2019
- Public comments incorporated and LHMP submittal to Cal OES – June 14, 2019

Foster Morrison will make any requested changes from Cal OES before FEMA submittal. Once submitted, plan adoption and final plan submittal to the District is subject to timely reviews by Cal OES and FEMA. Upon contract award, identified timeframes and overall schedule can be modified to better reflect the needs of the HVLCSD.

Table 4 Hidden Valley Lake Community Services District – LHMP Schedule

Phase/Task	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov
Phase I: LHMP Planning/Development Process													
Task 1: Organize Resources													
HMPC #1 - Kickoff/Public Mtg #1													
Task 2: Public Involvement													
Task 3: Coordinate with Other Agencies													
Phase II: Risk Assessment													
Task 4: Assess the Hazard													
Task 5: Assess the Problem													
Capability Assessment													
HMPC #2													
Phase III: Mitigation Strategy													
Task 6: Set Goals													
Task 7: Review Possible Activities													
HMPC #3 and #4													
Task 8: Draft an Action Plan													
Task 8a: Draft Plan													
Mitigation Action Worksheets due from District/HMPC													
Draft Plan to District/HMPC													
City/HMPC Review and Comments to FM													
Public Review Draft to District													
HMPC #5/Public Mtg. #2													
Public Review and Comments													
Phase IV: Plan Maintenance Process													
Task 9: Final Plan Submittal and Adoption*													
Plan Submittal to Cal OES/FEMA													
Task 10: Procedures to Implement, Monitor, Update the Plan													

5. Project Cost

Foster Morrison will execute the proposed scope of work for a not-to-exceed, fixed price fee as detailed in this cost proposal. Execution of the scope of work within the proposed fee will meet the HVLCSD's expectations to provide the District with a DMA-compliant, FEMA-approved LHMP.

Table 5, LHMP Cost Proposal Summary, provides a summary of our fees broken out by project phase and task and includes all labor and direct and indirect costs. Direct costs include all reimbursable expenses such as travel and materials. Assumptions used in development of project costs are also identified. A detailed cost table is shown in Figure 2.

Table 5 Hidden Valley Lake Community Services District LHMP Cost Proposal Summary

Description (by Project Phase and Task)	Labor Costs	Direct Costs	Total Costs
Phase I LHMP Planning/Development Process			
Task 1: Organize Resources	\$5,770.00	\$1,650.00	\$7,420.00
Task 2: Public Involvement	\$3,020.00	\$0.00	\$3,020.00
Task 3: Coordinate with Other Agencies	\$5,290.00	\$0.00	\$5,290.00
Total Phase I	\$14,080.00	\$1,650.00	\$15,730.00
Phase II Risk Assessment			
Task 4: Assess the Hazard	\$13,800.00	\$0.00	\$13,800.00
Task 5: Assess the Problem	\$20,440.00	\$1,775.00	\$22,215.00
Capability Assessment	\$4,280.00	\$0.00	\$4,280.00
Total Phase II	\$38,520.00	\$1,775.00	\$40,295.00
Phase III Mitigation Strategy			
Task 6: Set Goals	\$5,040.00	\$1,350.00	\$6,390.00
Task 7: Review Possible Activities	\$7,440.00	\$500.00	\$7,940.00
Task 8: Draft an Action Plan	\$9,700.00	\$0.00	\$9,700.00
Total Phase III	\$22,180.00	\$1,850.00	\$24,030.00
Phase IV Plan Maintenance Process			
Task 9: Adopt the Plan	\$5,220.00	\$0.00	\$5,220.00
Tasks 10: Implement, Evaluate & Revise	\$2,300.00	\$2,025.00	\$4,325.00
Total Phase IV	\$7,520.00	\$2,025.00	\$9,545.00
LHMP: Total Estimated Costs	\$82,300	\$7,300.00	\$89,600.00

Figure 2 Hidden Valley Lake Community Services District LHMP Cost Proposal Detail

PROFESSIONAL SERVICES	Rate	Task 1: Organize Resources (Steering Committee Mtg. #1; Pub Mtg. #1)		Task 2: Coordinate with Other Agencies		Task 3: Public Involvement		Capability Assessment	Task 4: Hazard ID & Profiles		Task 5: Vulnerability Assessment (Steering Committee Mtg. #2)		Task 6: Establish Goals (Steering Committee Mtg. #3)		Task 7: Identify and Analyze Mitigation Measures (Steering Mtg. #4)		Task 8: Mitigation Implementation Strategy		Task 9: Draft Plan		Tasks 10: Secure Approval of Draft and Final LHMP (Steering Committee Mtg. #5; Pub. Mtg #2)		Total Estimated Costs		
		Hrs	Cost	Hrs	Cost	Hrs	Cost	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	
Project Staffing																									
Howell: QA/QC - LHMP Support	\$ 110.00	2	\$ 220.00	2	\$ 220.00	4	\$ 440.00	8	\$ 880.00	8	\$ 880.00	4	\$ 440.00	4	\$ 440.00	4	\$ 440.00	2	\$ 220.00	2	\$ 220.00		\$ -	40	\$ 4,400.00
Foster: PM/Senior Planner	\$ 125.00	38	\$ 4,750.00	16	\$ 2,000.00	26	\$ 3,250.00	8	\$ 1,000.00	24	\$ 3,000.00	32	\$ 4,000.00	24	\$ 3,000.00	40	\$ 5,000.00	40	\$ 5,000.00	24	\$ 3,000.00	12	\$ 1,500.00	284	\$ 35,500.00
Morrison: Lead Planner/Technical Editor	\$ 100.00	8	\$ 800.00	8	\$ 800.00	16	\$ 1,600.00	24	\$ 2,400.00	80	\$ 8,000.00	80	\$ 8,000.00	16	\$ 1,600.00	20	\$ 2,000.00	32	\$ 3,200.00	20	\$ 2,000.00	8	\$ 800.00	312	\$ 31,200.00
Gutierrez: GIS/Risk Assessment	\$ 80.00		\$ -		\$ -		\$ -		\$ -	24	\$ 1,920.00	100	\$ 8,000.00		\$ -		\$ -	16	\$ 1,280.00		\$ -		\$ -	140	\$ 11,200.00
Total Professional Expenses		48	\$ 5,770.00	26	\$ 3,020.00	46	\$ 5,290.00	40	\$ 4,280.00	136	\$ 13,800.00	216	\$ 20,440.00	44	\$ 5,040.00	64	\$ 7,440.00	90	\$ 9,700.00	46	\$ 5,220.00	20	\$ 2,300.00	776	\$ 82,300.00
DIRECT EXPENSES																									
Item	Unit Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost
Air Travel	\$600	1	\$ 600.00		\$ -		\$ -		\$ -		\$ -	1	\$ 600.00	1	\$ 600.00		\$ -		\$ -	1	\$ 600.00		\$ -	4	\$ 2,400.00
Car Rental	\$250	1	\$ 250.00		\$ -		\$ -		\$ -		\$ -	1	\$ 250.00	1	\$ 250.00		\$ -		\$ -	1	\$ 250.00		\$ -	4	\$ 1,000.00
Per diem	\$200	3	\$ 600.00		\$ -		\$ -		\$ -		\$ -	3	\$ 600.00	2	\$ 400.00	2	\$ 400.00		\$ -	4	\$ 800.00		\$ -	14	\$ 2,800.00
Parking/baggage/misc.	\$100	1	\$ 100.00		\$ -		\$ -		\$ -		\$ -	1	\$ 100.00	1	\$ 100.00	1	\$ 100.00		\$ -	1	\$ 100.00		\$ -	5	\$ 500.00
Priority Mail and Shipping			\$ 50.00		\$ -		\$ -		\$ -		\$ 75.00		\$ 75.00		\$ -		\$ -		\$ -		\$ -		\$ 50.00		\$ 175.00
Photocopying, Color Printing			\$ 50.00		\$ -		\$ -		\$ -		\$ 150.00		\$ 150.00		\$ -		\$ -		\$ -		\$ -		\$ 225.00		\$ 425.00
TOTAL DIRECT COSTS			\$ 1,650.00		\$ -		\$ -		\$ -		\$ -		\$ 1,775.00		\$ 1,350.00		\$ 500.00		\$ -		\$ -		\$ 2,025.00		\$ 7,300.00
TOTAL LABOR AND DIRECT COSTS			\$ 7,420.00		\$ 3,020.00		\$ 5,290.00		\$ 4,280.00		\$ 13,800.00		\$ 22,215.00		\$ 6,390.00		\$ 7,940.00		\$ 9,700.00		\$ 5,220.00		\$ 4,325.00		\$ 89,600.00
Breakout by Phase			Phase I Planning Process				Phase II Risk Assessment				Phase III Mitigation Strategy				Phase IV Plan Maintenance										
Item			Total Hours		Costs	Total Hours		Costs	Total Hours		Costs	Total Hours		Costs	Total Hours		Costs	Total Hours		Costs	Qty.	Cost			
Foster Morrison Labor			120		\$ 14,080.00	392		\$ 38,520.00	198		\$ 22,180.00	66		\$ 7,520.00	776		\$ 82,300.00								
Foster Morrison Expenses					\$ 1,650.00			\$ 1,775.00			\$ 1,850.00			\$ 2,025.00			\$ 7,300.00								
PHASE COST			120		\$ 15,730.00	392		\$ 40,295.00	198		\$ 24,030.00	66		\$ 9,545.00	776		\$ 89,600.00								

LHMP Fee Proposal Assumptions

The following is a summary of cost assumptions to the development of the LHMP:

- Monies associated with labor and direct expense costs will be interchangeable as needed, between labor and direct costs and between project phases and tasks, to complete project requirements.
- The HVLCSO will be the single participating jurisdiction seeking FEMA approval of the plan.
- Four trips total are planned by the Foster Morrison planning team to accommodate the five HMPC planning and coordination meetings, two public meetings, and up to three board meetings.
- District staff will assist with coordinating and advertising public meetings.
- This cost assumes one color copy of the plan to be provided to Cal OES and FEMA for the formal submittal and one hard and electronic color copies of the final plan document to be provided to the client to support plan adoption and for final plan submittal. All other interim plan submittals to the client and HMPC will be done electronically.
- District staff will coordinate and facilitate the plan's adoption.
- District will support the DMA planning process requirements as previously described in a timely manner in order to meet the schedule within the proposed fee.
- In accordance with DMA guidelines, only existing best available data will be used during this planning process, no new source data will be created.

This Cost Proposal remains valid for a period of not less than 90 calendar days from the date of submittal.

Cost and Schedule Controls

As previously stated in this proposal submittal, the Foster Morrison team has a proven track record in providing clients with responsive and timely service to meet project objectives, schedules and changing work needs. As noted in our similar and recent project experience table, our LHMP projects are completed within budget without cost overruns, and often under very aggressive schedules. The anticipated volume of work from this contract is well within our team's capacity to execute efficiently and effectively. As owners of Foster Morrison, we make a commitment to our clients to deliver a quality LHMP on schedule and within budget.

Appendix A. Resumes

Jeanine Foster, JD

Principal/Project Manager/Senior Mitigation Planner

Professional Biography

Ms. Jeanine Foster is a co-owner of Foster Morrison Consulting and plays a key role as principal, project manager, and senior mitigation specialist. She has diverse experience providing project management, mitigation planning, and disaster recovery services in response to damages caused by a variety of natural hazard events, including flood and wildfire, to affected communities, with a focus on cities and counties located in California, Colorado, and Mississippi.

Jeanine's responsibilities include project management; hazard mitigation planning; disaster recovery; grant application development, including benefit-cost analysis (BCAs); environmental and historic preservation compliance, grant administration, agency coordination; National Flood Insurance Program (NFIP) Community Rating System (CRS) compliance; Floodplain Management Services; regulatory compliance; and marketing. She works closely with clients to define project direction and scope; to identify and pursue grant opportunities; to implement and administer projects funded through a variety of grant resources; and to ensure compliance with applicable regulatory programs such as FEMA's Disaster Mitigation Act (DMA) and NFIP's CRS program. These responsibilities have entailed working with the Federal Emergency Management Agency (FEMA), the National Oceanic and Atmospheric Administration (NOAA), Army Corp of Engineers (USACE), State Emergency Management Agencies and Water Resources Agencies, and local city and county officials to obtain grant funding and to execute and manage projects from startup to final project closeout. Her expertise includes:

- Project Management
- Hazard Mitigation and Emergency Management Planning and Disaster Recovery
- Floodplain Management Services/NFIP's CRS Program Compliance
- Regulatory/Environmental Compliance

Education

- JD, University of Denver, 1988
- BA, University of Colorado, 1984

Professional Qualifications/Registrations

- Admitted to Bar: Colorado, 1988

Representative Projects

Hazard Mitigation Plans

City of Lakeport Local Hazard Mitigation Plan, Lakeport, CA (2018/2019 Original Plan)

Project Manager and Senior Planner responsible for development of the single-jurisdictional LHMP that meets the requirements of DMA 2000. This unique community set on the shores of Clear Lake focused on their priority hazards that include dam failure, flooding, wildfire, aquatic biological hazards, and drought. Responsibilities include project management, public and planning team meeting facilitation, identification

and development of hazard data and methodologies for the risk assessment, and facilitation of a mitigation strategy to reduce the risk and vulnerability of the City to priority hazards of concern. The plan is in process.

City of Clearlake Local Hazard Mitigation Plan, Clearlake, CA (2018/2019 Original Plan)

Project Manager and Senior Planner responsible for development of the single-jurisdictional LHMP that meets the requirements of DMA 2000. This unique community set on the shores of Clear Lake focused on their priority hazards that include dam failure, flooding, wildfire, aquatic biological hazards, and drought. Responsibilities include project management, public and planning team meeting facilitation, identification and development of hazard data and methodologies for the risk assessment, and facilitation of a mitigation strategy to reduce the risk and vulnerability of the City to priority hazards of concern. The plan is in process.

City of Piedmont Local Hazard Mitigation Plan, Piedmont, CA (2018 Original Plan)

Project Manager and Senior Planner responsible for development of the single-jurisdictional LHMP that meets the requirements of DMA 2000. This unique community set in the Oakland Hills of Alameda County focused on their priority hazards that include earthquake, wildfire, and drought. The earthquake analysis included three HAZUS modeling runs to address the three primary faults of concern to the City. Responsibilities include project management, public and planning team meeting facilitation, identification and development of hazard data and methodologies for the risk assessment, and facilitation of a mitigation strategy to reduce the risk and vulnerability of the City to priority hazards of concern. The plan is in process.

City of Azusa Local Hazard Mitigation Plan, City of Azusa, CA (2018 Original Plan)

Project Manager and Senior Planner responsible for development of an original LHMP for the City of Azusa. Tasks include client coordination, organizing resources, facilitating planning team meetings, developing risk and capability assessments, identifying mitigation strategies and overall plan development. Located in the Los Angeles area, wildfire, earthquake, dam failure, landslide, and floods were primary hazards of concern in the City. The plan is in its final stages as of early 2018.

Colusa County Local Hazard Mitigation Plan, Colusa County, CA (2018 Plan Update)

Project Manager and Senior Planner responsible for development of a multi-hazard and multi-jurisdictional plan that meets the requirements of DMA 2000 and FMA. Responsibilities include research and development of hazard and risk assessment data, identification and development of plan goals and mitigation strategies, development and facilitation of both team and public meetings, and overall plan development. This plan addressed both natural and priority man-made hazards, with an emphasis on assessing risk and vulnerability of critical facilities to identified hazards. The plan is in its final stages as of early 2018.

Los Angeles Unified School District Local Hazard Mitigation Plan (2018 Plan Update)

Project Manager and Senior Planner responsible for development of an original LHMP for the Los Angeles Unified School District. Tasks include client coordination, organizing resources, facilitating planning team meetings, developing risk and capability assessments, identifying mitigation strategies and overall plan development. Located in the Los Angeles area, wildfire, earthquake, dam failure, levee failure, and floods were primary hazards of concern in the District. The plan has been submitted to Cal OES/FEMA.

Lake County Local Hazard Mitigation Plan, Lake County, CA (2018 Plan Update)

Project Manager and Senior Planner responsible for development of an LHMP Update for Lake County. Tasks include client coordination, organizing resources, facilitating planning team meetings, developing risk and capability assessments, identifying mitigation strategies and overall plan development. Due to recent events, wildfire, drought, dam failures, and floods are primary hazards of concern in this rural county.

Madera County Local Hazard Mitigation Plan, Madera County CA (2017 Plan Update)

Project Manager and Senior Planner responsible for development of an LHMP Update for Madera County. Tasks include client coordination, organizing resources, facilitating planning team meetings, developing risk and capability assessments, identifying mitigation strategies and overall plan development. Located in the Sierra Nevada's of California, wildfire, drought, dam failures, and floods are primary hazards of concern in this rural county.

City of San Rafael Local Hazard Mitigation Plan, City of San Rafael, CA (2017 Original Plan)

Project Manager and Senior Planner responsible for development of an original LHMP for the City of San Rafael. Tasks include client coordination, organizing resources, facilitating planning team meetings, developing risk and capability assessments, identifying mitigation strategies and overall plan development. The Plan involved working closely with both the City and Marin County. Located on San Francisco Bay, wildfire, earthquake, liquefaction, tsunami, and floods were primary hazards of concern in the City. The plan is FEMA-approved.

Nevada County Local Hazard Mitigation Plan Update, Nevada County, CA (2017 Plan Update)

Project Manager and Senior Planner responsible for development of an LHMP Update for Nevada County. Project was completed using a compressed schedule. Tasks include client coordination, organizing resources, facilitating planning team meetings, developing risk and capability assessments, identifying mitigation strategies and overall plan development. Located in the Sierra Nevada's of California, wildfire, drought, and floods are primary hazards of concern in this rural county.

Sacramento County Local Hazard Mitigation Plan (2005 Original Plan; 2011 and 2016 Plan Updates), Sacramento County, CA

Project Manager and Senior Planner responsible for development of the original plan and two LHMP Updates that meets the requirements of DMA, CRS and FMA. Responsibilities included updating the hazard and risk assessment data, identification and development of new plan goals and mitigation strategies, development and implementation of an enhanced public outreach effort, and maximizing participating CRS communities' credits for DMA planning under CRS Activities 510 and 450. This plan update focused on natural hazards, focusing on flood and levee failure, and included an estimated 30+ participating jurisdictions. Other plan update objectives included analysis of the flood hazard to include the new DFIRMS, localized/stormwater flood issues, incorporation of mapping and analyses from the ongoing Central Valley Flood Control project, and an enhanced analysis of the potential issues related to levee failures as well as the consideration of the impacts associated with recent levee de-certifications. These plans was approved by Cal EMA/FEMA without issue. As a result of this plan update which significantly earned more CRS credits, combined with other CRS activity credits, the County has increased their CRS

classification to a Class 2, one of only a few Class 2 communities in the US. The 2016 Plan Update is in process and in addition to development of a DMA and CRS plan, a focus will be placed on the Delta area with a separate Delta Annex being created which will include the City of Isleton and 18 reclamation districts.

Placer County Local Hazard Mitigation Plan Update, Placer County Office of Emergency Services, Placer County, CA, (2005 Original Plan; 2010 and 2015 Plan Updates)

Project Manager and Senior Planner responsible for development of a DMA/FMA/CRS original LHMP and two LHMP Updates for Placer County and participating jurisdictions. Responsibilities included project management; planning team meeting facilitation; research and development of hazard and risk assessment data; identification and development of County-specific mitigation strategies; development and coordination of public outreach activities; and overall plan development. This plan update addresses data gaps and identified improvements to the risk assessment from the 2005 plan and highlights the mitigation successes of participating jurisdictions through creation of a new section of the plan. Also conducted as part of this planning effort, Jeanine assisted with the development and implementation of a benefit-cost analysis (BCA) course utilizing projects from the updated mitigation strategy. Both plans were FEMA-approved and adopted by participating communities. The 2015 Update was a CRS focused plan to the 2013 CRS Coordinator's Manual for Activity 510 and included an update of all hazards of concern, with an emphasis on flood, wildfire, and drought. Climate change impacts and adaptation considerations will also be addressed to better inform future development in the County.

Calaveras County Local Hazard Mitigation Plan Update, Calaveras County Office of Emergency Services, Calaveras County, CA (2010 Original Plan and 2015 Plan Update)

Project Manager and Senior Planner responsible for development of an LHMP Update for Calaveras County. Tasks include client coordination, organizing resources, facilitating planning team meetings, developing risk and capability assessments, identifying mitigation strategies and overall plan development. The plan update is revising its old list of 11 hazards to better align with the State of California. New or modified hazards include the addition of the water shortage component to the drought hazard and the breakout of the flood hazard to include the 100-year, 500-year and stormwater/localized flooding issues. The wildfire hazard will be modified to reflect data and analysis from the County's most recent CWPP. The plan update will focus on mitigation successes since the last plan and a review and update of the mitigation strategy to focus on both existing and future land use and development. The 2010 plan was approved by FEMA without comment; Foster Morrison developed the 2015 Plan Update without Cal OES or FEMA comment. The delivery to Cal OES was expedited due to wildfires that were occurring in the County.

Comprehensive Flood Management Plan (CFMP) Update, City of Sacramento, CA, 2014

Project Manager and Senior Planner responsible for an update to the City's CFMP. This unique plan serves as the City's strategic plan to reduce flood risk to the City through a comprehensive approach to risk management. The risk reduction tools implemented through this plan include: Land Use Planning and Development Guidelines, Emergency Management, Levee and other Structural Improvements, Internal drainage Improvements, Risk Communication (Public Education and Awareness), and NFIP/CRS. As part of this effort a review, update and rewrite of each chapter was required and with a focus on overhauling the

Emergency Management, Risk Communication and NFIP/CRS chapters. The updated CFMP also included development of a mitigation strategy for each risk reduction tool.

Sutter County Hazard Mitigation Plan (Original 2009 Plan and 2014 Plan Update), Sutter County, CA

Project Manager and Senior Planner responsible for development of the original and update of a multi-hazard and multi-jurisdictional plan that meets the requirements of DMA 2000, FMA, and CRS. Responsibilities included project management, research and development of hazard and risk assessment data, identification and development of plan goals and mitigations strategies, development and facilitation of both team and public meetings, and overall plan development. Unique issues involved assessing potential risks and identifying mitigation strategies for a community surrounded and protected by an aging levee system. Related challenges included updating the risk assessment for the County utilizing both new DFIRMs and older Q3 data as well as assessing future vulnerability of the community resulting from regional levee improvement projects in process. This plan update is one of the first California plans to be developed to the 2013 CRS schedule for Activity 510 in order to maximize CRS credits, earning the County all of 15 of the available CRS credits for this activity.

City of Vacaville Local Hazard Mitigation Plan Update, Vacaville, CA (2015 Original Plan)

As a subcontractor on this project, provided CRS and mitigation strategy expertise to the local hazard mitigation planning project for the City. In this capacity, researched and evaluated the City's current CRS program status and made recommendations for program improvements in order to achieve a lower CRS Class to further reduce the cost of flood insurance premiums to area residents. This review included evaluating floodplain management improvements to address all CRS mitigation categories: prevention, property protection, emergency services, structural projects, natural resource protection, and public information. In addition, this effort helped the City achieve further credits under CRS Activity 510, Floodplain Management Planning. This plan is FEMA-approved.

Modoc County Local Hazard Mitigation Plan, Office of Emergency Services, Modoc County, CA (2015 Original Plan)

Project Manager and Senior Planner responsible for development of an original LHMP for Modoc County. Tasks include client coordination, organizing resources, facilitating planning team meetings, developing risk and capability assessments, identifying mitigation strategies and overall plan development. Located in the far northern corner of California, wildfire, drought, and floods are primary hazards of concern in this rural county.

Amador County Hazard Mitigation Plan Update, Amador County, CA (Original 2009 Plan and 2014 Plan Update)

Project Manager and Senior Planner responsible for development of the original DMA 2000 Multi-jurisdictional Hazard Mitigation Plan and plan update for the County, incorporated communities and participating special districts. Responsibilities included project management; planning team meeting facilitation; research and development of hazard and risk assessment data; identification and development of County-specific mitigation strategies; development and coordination of public outreach activities; and overall plan development. Unique issues in the development of this plan included the rural and historic

nature of the County and communities as well as considering areas for future development relative to hazard overlays given the recent growth trends in the County.

Butte County Hazard Mitigation Plan Update, Butte County, CA (2013 Plan Update)

Project Manager and Senior Planner responsible for development of DMA 2000 Multi-jurisdictional Hazard Mitigation Plan for the County, incorporated communities and participating special districts. Responsibilities included project management; planning team meeting facilitation; research and development of hazard and risk assessment data; identification and development of County-specific mitigation strategies; development and coordination of public outreach activities; and overall plan development. Priority hazards included flood and wildfire and significant coordination was required with the Sutter Butte Flood Control Agency and the County Fire Safe Alliance to develop a comprehensive mitigation strategy for the County and participating jurisdictions.

Calaveras County Water District Hazard Mitigation Plan Update, Calaveras County, CA (2012 Plan Update)

Project Manager and Senior Planner responsible for the update to the 2006 plan in order to meet the new FEMA planning guidance. The updated plan also included a revised list of hazards including incorporating the issue of water supply into the drought hazard, a significant concern to this Northern California Water District. In addition, the risk assessment was significantly expanded to provide an enhanced analysis for all hazards. As a result of this fast-tracked plan, the District was able to successfully apply for a FEMA grant to replace redwood water tanks within the wooded areas – a mitigation strategy highlighted in this plan update.

Other Mitigation Planning Work

- City of Fullerton Multi-Hazard Mitigation Plan, City of Fullerton, CA (Original Plan 2011)
- Hazard Mitigation Plan, Fresno County, CA (2009 Original Plan)
- Floodplain Management/CRS Services, City of Boulder, Boulder, CO, 2009
- DMA/CRS Plan, City of Boulder, Boulder, CO (2006 Original Plan)
- DMA/Disaster Resistant University (DRU) Plan, University of Colorado, Boulder, CO (2006 Original Plan)
- Mississippi Hazard Mitigation Services for Local Communities along Mississippi Gulf Coast, 2008-2014
- Hazard Mitigation/Climate Adaptation/CRS Plan, City of Waveland MS, (2013 Plan Update)
- Local Hazard Mitigation Plan Update, City of Pascagoula, MS (2013 Plan Update)

Christopher Morrison, MPA, CFM

Owner/Lead Mitigation Planner

Professional Biography

Chris is a co-owner of Foster Morrison Consulting and is the Lead Mitigation Planner/Technical Editor for Foster Morrison. During the past 8 years, he has provided planning, research, writing, technical editing, and document production expertise to over 40 different DMA plans for jurisdictions in Arkansas, California, Colorado, Louisiana, Mississippi, Missouri, Montana, Nevada, New Mexico, South Dakota, Virginia, Wisconsin, and Wyoming. Recently he has been a key mitigation planner on California Hazard Mitigation Plans for the cities of Azusa, Clearlake, Fullerton, Lakeport, Piedmont, San Rafael, and Vacaville, as well as Colusa County, Lake County, Madera County, Nevada County, Amador County, Butte County, Calaveras County, the Calaveras County Water District, Kern County, Modoc County, Placer County, Sacramento County, Sutter County, and the Los Angeles Unified School District. In addition, he has provided technical editing and document production services to clients such as the EPA, BIA, and large mining clients in the US, Russia, and Mongolia. He has also performed large scale technical editing on UFOC, SEC, U.S. Supreme Court, U.S. Appeals Court, State Supreme Court, and international court documents. During the completion of his Masters of Public Administration, he was educated in policy analysis, grant writing and management, legal analysis, legal research, and financial management for government and non-profit entities. Chris is also a Certified Floodplain Manager.

Education

- Masters of Public Administration, Minnesota State University Moorhead, 2012
- B.S. in Political Science, Minnesota State University Moorhead, 1998

Professional Qualifications/Registrations

- Association of State Floodplain Managers
- Certified Floodplain Manager

Representative Projects

Hazard Mitigation Plans

City of Lakeport Local Hazard Mitigation Plan (2018/2019 Original Plan)

Chris is the primary writer and technical editor for an original local hazard mitigation plan. His responsibilities included review and revision of the plan and conducting research to create a hazard identification and risk assessment, demographic data, city profile, formatting, and layout of the plan. He is also responsible for compiling, analyzing, and implementing materials to ensure compliance with FEMA guidelines.

City of Clearlake Local Hazard Mitigation Plan (2018/2019 Original Plan)

Chris is the primary writer and technical editor for an original local hazard mitigation plan. His responsibilities included review and revision of the plan and conducting research to create a hazard identification and risk assessment, demographic data, city profile, formatting, and layout of the plan. He is

also responsible for compiling, analyzing, and implementing materials to ensure compliance with FEMA guidelines.

City of Piedmont Local Hazard Mitigation Plan (2018/2019 Original Plan)

Chris is the primary writer and technical editor for an original local hazard mitigation plan. His responsibilities included review and revision of the plan and conducting research to update hazard identification and risk assessment contents, demographic data, city profile, formatting, and layout of the plan. He is also responsible for compiling, analyzing, and implementing materials to ensure compliance with FEMA guidelines. This plan is being completed in a compressed timeframe.

City of Azusa Local Hazard Mitigation Plan, City of Azusa, CA (2018 Original Plan)

Chris served as the primary writer and technical editor for an original local hazard mitigation plan. His responsibilities included review and revision of the plan and conducting research to update hazard identification and risk assessment contents, demographic data, city profile, formatting, and layout of the plan. He was also responsible for compiling, analyzing, and implementing materials to ensure compliance with FEMA guidelines.

Colusa County Mitigation Plan Update, Colusa County, CA (2018 Plan Update)

Chris served as a writer and technical editor for a local hazard mitigation plan update for Colusa County, California. His responsibilities included review and revision of the plan and conducting research to create hazard analysis and risk assessment contents, demographic data, county profile, formatting and layout for the county and participating jurisdictions in the planning region. He was also responsible for compiling, analyzing, and implementing materials to ensure compliance with FEMA guidelines.

Los Angeles Unified School District, Los Angeles, CA (2018 Plan Update)

Chris served as a writer and technical editor for a local hazard mitigation plan update for the Los Angeles Unified School District, which serves in excess of 500,000 students. His responsibilities included review and revision of the plan and conducting research to create hazard analysis and risk assessment contents, demographic data, county profile, formatting and layout for the county and participating jurisdictions in the planning region. He was also responsible for compiling, analyzing, and implementing materials to ensure compliance with FEMA guidelines. This plan was completed under a compressed schedule.

Lake County Mitigation Plan Update, Lake County, CA (2018 Plan Update)

Chris served as a writer and technical editor for a local hazard mitigation plan update for Lake County, California. His responsibilities included review and revision of the plan and conducting research to create hazard analysis and risk assessment contents, demographic data, county profile, formatting and layout for the county and participating jurisdictions in the planning region. He was also responsible for compiling, analyzing, and implementing materials to ensure compliance with FEMA guidelines. This plan was a CRS focused plan that is being completed under a compressed schedule.

Madera County Mitigation Plan Update, Madera County, CA (2017 Plan Update)

Chris served as a writer and technical editor for a local hazard mitigation plan in Madera County, California. His responsibilities included review and revision of the plan and conducting research to create hazard analysis and risk assessment contents, demographic data, county profile, formatting and layout for the

county and participating jurisdictions in the planning region. He was also responsible for compiling, analyzing, and implementing materials to ensure compliance with FEMA guidelines.

City of San Rafael Local Hazard Mitigation Plan, San Rafael CA (2017 Original)

Chris served as the primary writer and technical editor for an original local hazard mitigation plan. His responsibilities included review and revision of the plan and conducting research to update hazard identification and risk assessment contents, demographic data, city profile, formatting, and layout of the plan. He was also responsible for compiling, analyzing, and implementing materials to ensure compliance with FEMA guidelines.

Nevada County Hazard Mitigation Plan Update, Nevada County, CA (2017 Plan Update)

Chris served as the primary writer and technical editor for an updated local hazard mitigation plan. The plan was completed in a compressed time period. His responsibilities included review and revision of the plan and conducting research to update hazard identification and risk assessment contents, demographic data, county and jurisdiction profiles, formatting, and layout of the plan. He was also responsible for compiling, analyzing, and implementing materials to ensure compliance with FEMA guidelines. This plan was completed under a compressed schedule.

Sacramento County Local Hazard Mitigation Plan Update, Sacramento County, CA (2011 and 2016 Plan Update)

Chris served as the primary writer and technical editor for an updated local hazard mitigation plan in Sacramento County, California. His responsibilities included review and revision of the plan and conducting research to update hazard analysis and risk assessment contents, demographic data, county profile, formatting and layout for the county and participating jurisdictions in the planning region. He was also responsible for compiling, analyzing, and implementing materials to ensure compliance with FEMA guidelines. Chris also worked to ensure that the Plan Update was completed to maximize CRS credits for the County.

Placer County Local Hazard Mitigation Plan Update, Placer County, CA (2010 and 2015 Plan Updates)

Chris was the primary writer of two Plan Updates for Placer County (2010 and 2015). In 2010, the County and 15 jurisdictions participated in the planning process. Chris's responsibilities included review and revision of the plan and conducting research to update hazard analysis and risk assessment contents, demographic data, county profile, formatting, and layout. He was also responsible for compiling, analyzing, and implementing materials to ensure compliance with FEMA guidelines. Foster Morrison is kicking off the second plan update for Placer County in spring of 2015. The 2015 Update will be a CRS focused plan to the 2013 CRS Coordinator's Manuel for Activity 510 and will include an update of all hazards of concern, with an emphasis of Flood, Wildfire, and drought. Climate change impacts and adaptation considerations will also be addressed to better inform future development in the County.

City of Vacaville Hazard Mitigation Plan Update, City of Vacaville, CA (2015 Plan Update)

Chris was the primary researcher for a hazard mitigation plan update for the City of Vacaville. His responsibilities for this project require researching, compiling, analyzing and presenting accurate hazard

profiling for the client. He was also responsible for compiling, analyzing, and implementing materials to ensure compliance with FEMA guidelines.

Calaveras County Local Mitigation Plan Update, Calaveras County, CA (2010 Original Plan and 2015 Update)

In 2010, Chris served as the primary writer and technical editor for an updated local hazard mitigation plan in Calaveras County, California. His responsibilities for this project included review and revision of the plan to ensure plan data accuracy, formatting and layout, and compliance with FEMA guidelines. He was also responsible for compiling, analyzing, and implementing materials to ensure compliance with FEMA guidelines. Foster Morrison is developing the 2015 Plan Update due for submittal to Cal OES/FEMA in summer of 2015.

Modoc County Local Hazard Mitigation Plan, Modoc County, CA (2015 Original Plan)

Chris is the primary writer and technical editor for a new local hazard mitigation plan in Calaveras County, California. His responsibilities for this project include creation of new plan language, ensuring data accuracy, formatting and layout, and compliance with FEMA guidelines. He is also responsible for compiling, analyzing, and implementing materials to ensure compliance with FEMA guidelines. The plan is on target for submittal to Cal OES and FEMA in early 2016.

Comprehensive Flood Management Plan (CFMP) Update, City of Sacramento, CA (2014)

Chris's responsibilities included review and revision of the historical section of the plan, ensuring that it reflected the City of Sacramento's annex to the Sacramento County Local Hazard Mitigation Plan. He conducted research to update flood history and risk components since the LHMP had been adopted. Chris was also charged with the technical edit of the entire document. He was also responsible for compiling, analyzing, and implementing materials to ensure compliance with client guidelines.

Amador County Hazard Mitigation Plan Update, Amador County, CA (Original 2009 Plan and 2014 Plan Update)

Chris served as the primary writer and technical editor for an updated local hazard mitigation plan. His responsibilities included review and revision of the plan and conducting research to update hazard identification and risk assessment contents, demographic data, county and jurisdiction profiles, formatting, and layout of the plan. He was also responsible for compiling, analyzing, and implementing materials to ensure compliance with FEMA guidelines.

Other Mitigation Plan Work

- City of Fullerton Local Hazard Mitigation Plan, City of Fullerton, CA
- Butte County Hazard Mitigation Plan Update, Butte County, CA
- Sutter County Hazard Mitigation Plan Update, Sutter County, CA
- Twin Rivers School District Hazard Mitigation Plan, Sacramento County, CA
- Calaveras County Water District Hazard Mitigation Plan Update, Calaveras County, CA
- Fresno County Hazard Mitigation Plan Update, Fresno County, CA
- Kern County Hazard Mitigation Plan Update, Kern County, CA
- Los Alamos County Hazard Mitigation Plan Update, Los Alamos County, NM
- Teton County Hazard Mitigation Plan Update, Teton County, MT
- Liberty County Hazard Mitigation Plan Update, Liberty County, MT

- Toole County Hazard Mitigation Plan Update, Toole County, MT
- Tribal Hazard Mitigation Plan Development, Ute Mountain Ute Tribe, CO
- State of Arkansas Multi-Hazard Mitigation Plan Update, Little Rock, AR
- State of South Dakota Multi-Hazard Mitigation Plan Update (2010 and 2013), Pierre, SD
- City of Waveland Hazard Mitigation Plan Update, Waveland, MS
- City of Pascagoula Hazard Mitigation Plan Update, Pascagoula, MS
- City of Boulder Multi-Hazard Mitigation Plan Update, Boulder, CO
- Carbon County Local Hazard Mitigation Plan, Carbon County, MT
- Big Horn County Local Hazard Mitigation Plan, Big Horn County, MT
- Washakie County Multi-Hazard Mitigation Plan, Washakie County, WY
- City of Moss Point Hazard Mitigation Plan, Moss Point, MS
- City of Long Beach Hazard Mitigation Plan, Long Beach, MS
- City of Aurora Energy Assurance Plan, Aurora, CO
- Pearl River County Local Hazard Mitigation Plan Update, Pearl River County, MS
- City of Bay St. Louis Local Hazard Mitigation Plan Update, City of Bay St. Louis, MS
- Southeast Colorado Regional Multi-Hazard Mitigation Plan, Southeast Colorado (Counties of Baca, Bent, Crowley, Kiowa, Otero, and Prowers)
- State of Colorado Drought Mitigation and Response Plan, Denver, CO
- City of Bossier City Local Hazard Mitigation Plan Update, City of Bossier City, LA
- State of Missouri Multi-Hazard Mitigation Plan Update, Jefferson City, MO
- Jefferson County Multi-Jurisdictional Multi-Hazard Mitigation Plan Update, Jefferson County, CO
- Regional Hazard Mitigation Plan Update, Northeast Colorado (Counties of Cheyenne, Kit Carson, Lincoln, Logan, Morgan, Phillips, Sedgwick, Washington, Weld, and Yuma)
- Washoe County Multi Hazard Mitigation Plan, Washoe County, NV
- Dane County Hazard Mitigation Plan Update, Dane County, WI
- Multi-Hazard Mitigation Plan Update, City of Poquoson, VA

Other Technical Editing Work

- Oyu Tolgoi Gold and Copper Mine Detailed Integration Development and Operation Plan (DIDOP)
- Resolution Copper Prefeasibility Study (PFS)
- Tuba City Dumpsite Remedial Investigation Study
- Colorado Energy Assurance Plan
- Ak-Sug Prefeasibility Study (PFS)

Alejandro Gutierrez

GIS Analyst

Professional Biography

Alejandro has 16 years of GIS data development, analysis, conversion, and manipulation within various GIS industries (floodplain mapping, E-911 data development, remote sensing, hydrogeology, and mining). For 6 years, Alejandro worked in a key capacity with FEMA on their Map Modernization (DFIRM) Program. As a GIS Project Manager, Production Manager, and GIS Analyst for the development of 27 county-wide vector- and ortho-based DFIRMs in FEMA Regions III, V, VII, and VIII, he developed a strong team/work environment, trained staff in production techniques, tracked budgets and schedules, and has traveled to study areas to coordinate public outreach meetings to discuss the new DFIRMs with the city/county officials, floodplain managers, emergency management officials, local engineers, FEMA representatives, NFIP coordinators, and the public. Alejandro has also provided mitigation planning and GIS support for multiple California DMA plan updates: Calaveras, Fresno, Lake, Colusa, Modoc, Madera, Nevada, Placer, Sacramento, and Sutter counties, as well as for the cities of Lakeport, Clearlake, Piedmont, San Rafael and Azusa, and the Los Angeles Unified School District. For the DMA plans, he generated thematic and illustrative facilities and hazards maps, both at the countywide and city scales, to represent FIRM data and to quantify risks to the county using parcel and assessor's value data. He also generated the standardized map template to present the wildfire risk analysis, also at the parcel level, using GIS data from the California Department of Forestry and Fire Protection. He has used the ESRI tools and Microsoft Access to perform flood analysis using FIRM data on parcels (land use type and valuation data) by city and performed the wildfire analysis using the same methodology. Alejandro has also provided mitigation planning and GIS support for three state hazard mitigation plan updates: Wyoming, Missouri, and Mississippi. For the state plans, Alejandro supported the initial GIS data collection efforts by contacting the county and jurisdictional representatives; created state, county, and jurisdictional thematic maps utilizing local and national DFIRM and HAZUS generated data; and also created thematic maps depicting earthquake, soil, and loss ratios utilizing local, national and HAZUS generated data. Alejandro has FEMA public assistance (PA) experience working directly with and within the County communities as a recovery specialist responsible for conducting flood-site assessments and developing mitigation improvement reports at sites in Larimer County, Colorado through coordination with several consulting firms, County, and FEMA. These efforts were focused on the Public Improvement Districts, private roads, and public roads to support bid packages necessary for FEMA to allocate disaster funds to the State and County.

Education

- University of TX, Austin, TX - BA Environmental Resource Management, 1999

Professional Qualifications/Registrations

- Rocky Mountain Hazus Users Group

Representative Projects

Hazard Mitigation Plans

City of Lakeport Local Hazard Mitigation Plan (2018/2019 Original Plan)

Alejandro is the lead GIS analyst for the City of Lakeport LHMP. He is performing GIS analysis on natural hazards such as earthquake, fire, dam failure, and flood to support the LHMP. He is analyzing population, critical facilities, and improved parcels at risk to hazards, as well as generating thematic and illustrative facilities hazards maps to represent hazard data and to quantify risks to the City using parcel and assessor's data.

City of Clearlake Local Hazard Mitigation Plan (2018/2019 Original Plan)

Alejandro is the lead GIS analyst for the City of Clearlake LHMP. He is performing GIS analysis on natural hazards such as earthquake, dam failure, fire, and flood to support the LHMP. He is analyzing population, critical facilities, and improved parcels at risk to hazards, as well as generating thematic and illustrative facilities hazards maps to represent hazard data and to quantify risks to the City using parcel and assessor's data.

City of Piedmont Local Hazard Mitigation Plan, City of Piedmont (2018/2019 Original Plan)

Alejandro is the lead GIS analyst for the City of Piedmont LHMP. He is performing GIS analysis on natural hazards such as earthquake, fire, dam failure, liquefaction, and flood to support the LHMP. He is analyzing population, critical facilities, and improved parcels at risk to hazards, as well as generating thematic and illustrative facilities hazards maps to represent hazard data and to quantify risks to the City using parcel and assessor's data.

Los Angeles Unified School District Local Hazard Mitigation Plan, Los Angeles Unified School District (2018 Plan Update)

Alejandro was the lead GIS analyst for the Los Angeles Unified School District LHMP Update. He is performed GIS analysis on natural hazards such as earthquake, fire, dam failure, landslide, tsunami, and flood to support the LHMP. Analyzed population (using school data), critical facilities, and parcels at risk to hazards. Generating thematic and illustrative facilities and hazards maps to represent hazard data and to quantify risks to the District using parcel and assessor's value data. He is performing an analysis of future development areas.

City of Azusa Local Hazard Mitigation Plan, City of Azusa (2018 Original Plan)

Alejandro was the lead GIS analyst for the City of Azusa LHMP. He performed GIS analysis on with natural hazards such as earthquake, fire, dam failure, landslide, and flood to support the LHMP. Analyzed population, critical facilities, and improved parcels at risk to hazards. Generated thematic and illustrative facilities and hazards maps to represent hazard data and to quantify risks to the City using parcel and assessor's value data. He also performed analysis of future development areas.

Lake County Hazard Mitigation Plan Update, Lake County, CA (2018 Plan Update)

Alejandro is the lead GIS analyst for the Lake County LHMP update. He will perform GIS analysis on with natural hazards such as earthquake, fire, dam failure, landslide, subsidence, and flood to support the

LHMP update. He will analyze population, critical facilities, and improved parcels at risk to hazards. He will generate thematic and illustrative facilities and hazards maps to represent hazard data and to quantify risks to the County using parcel and assessor's value data. He will perform analysis of future development areas, if available.

Madera County Local Hazard Mitigation Plan, Madera County, CA (2017 Plan Update)

Alejandro was the lead GIS analyst for the Madera County LHMP update. He performed GIS analysis on with natural hazards such as earthquake, fire, dam failure, landslide, liquefaction and flood to support the LHMP. Analyzed population, critical facilities, and improved parcels at risk to hazards. Generated thematic and illustrative facilities and hazards maps to represent hazard data and to quantify risks to the County and participating jurisdictions using parcel and assessor's value data. He also performed analysis of future development areas.

Nevada County Local Hazard Mitigation Plan, Nevada County, CA (2017 Update)

Alejandro was the lead GIS analyst for the Nevada County LHMP update. He performed GIS analysis on with natural hazards such as earthquake, fire, and flood to support the Plan Update. Analyzed population, critical facilities, and improved parcels at risk to hazards. Generated thematic and illustrative facilities and hazards maps, both at the countywide and city scales, to represent hazard data and to quantify risks to the County and participating jurisdictions using parcel and assessor's value data. He also performed analysis of future development areas.

City of San Rafael Local Hazard Mitigation Plan, City of San Rafael (2017 Original Plan)

Alejandro was the lead GIS analyst for the City of San Rafael LHMP. He performed GIS analysis on with natural hazards such as earthquake, fire, dam failure, tsunami, and flood to support the LHMP. Analyzed population, critical facilities, and improved parcels at risk to hazards. Generated thematic and illustrative facilities and hazards maps to represent hazard data and to quantify risks to the City using parcel and assessor's value data. He also performed analysis of future development areas.

Sacramento County Local Hazard Mitigation Plan Update, Sacramento County, CA (2011 and 2016 Plan Update)

Assisted in GIS analysis for the Sacramento County update. Performed GIS analysis on with natural hazards such as earthquake, fire, and flood, and levee failure to support the Sacramento County Plan Update. Analyzed population, critical facilities, and improved parcels at risk to hazards. Created maps to show relationships of hazards to earthquake shaking, wildfire, levee failure, and flooding (in FEMA flood zones) to the communities and the county. In addition, Alejandro created bundled GIS data to individual special districts, allowing them to overlay their in-house data directly over Foster Morrison analysis and maps.

Modoc County Local Hazard Mitigation Plan, Modoc County, CA (2015 Original Plan)

Alejandro was the lead GIS analyst for the Modoc County update. Performed GIS analysis on with natural hazards such as earthquake, fire, and flood to support the Plan Update. Analyzed population, critical facilities, and improved parcels at risk to hazards. Generated thematic and illustrative facilities and hazards maps, both at the countywide and city scales, to represent hazard data and to quantify risks to the county using parcel and assessor's value data.

Sutter County Hazard Mitigation Plan Update, Sutter County, CA (2012 Plan Update)

Assisted in GIS analysis for the Sutter County plan update. Performed GIS analysis on with natural hazards such as earthquake, fire, and flood, and levee failure to support the Sutter County Plan Update. Analyzed population, critical facilities, and improved parcels at risk to hazards. Created maps to show relationships of hazards to earthquake shaking, wildfire, levee failure, and flooding (in FEMA flood zones) to the communities and the County.

Calaveras County Local Hazard Mitigation Plan Update, Calaveras County, CA (2010 Original Plan and 2015 Plan Update)

Alejandro assisted in GIS analysis for the Calaveras County Plan in 2010, and was the lead GIS analyst in the 2015 Plan Update. Performed GIS analysis on with natural hazards such as earthquake, fire, and flood to support the Plan Update. Analyzed population, critical facilities, and improved parcels at risk to hazards. Generated thematic and illustrative facilities and hazards maps, both at the countywide and city scales, to represent hazard data and to quantify risks to the county using parcel and assessor's value data.

Placer County Local Hazard Mitigation Plan Update, Placer County Office of Emergency Services, Placer County, CA (2010 and 2015 Plan Updates)

Alejandro assisted in GIS analysis for the Placer County update in 2010. He was the lead GIS analyst in the 2015 Plan Update. Performed GIS analysis on with natural hazards such as earthquake, fire, landslide, and flood to support both the 2010 and 2015 Placer County Plan Update. Analyzed population, critical facilities, and improved parcels at risk to hazards. Generated thematic and illustrative facilities and hazards maps, both at the countywide and city scales, to represent hazard data and to quantify risks to the county using parcel and assessor's value data.

Fresno County Hazard Mitigation Plan Update, Fresno County, CA (2009 Original Plan)

Performed GIS analysis on with natural hazards such as earthquake, fire, and flood to support the Fresno County Plan Update. Analyzed population, critical facilities, and improved parcels at risk to hazards. Created maps to show relationships of hazards to earthquake shaking, wildfire, and FEMA flood zones to the communities and the County.

Other Mitigation Planning Work

- Wyoming Mitigation Plan Update - Wyoming Office of Homeland Security, State of Wyoming
- Flood Decision Support System – Flood DSS, Riverside Technology, Inc., Colorado
- Missouri Mitigation Plan Update and Mapping Needs Assessment – Missouri State of Emergency Management Agency (SEMA), State of Missouri
- Mississippi Hazard Mitigation Plan – Earthquake Maps June 2007, Mississippi

DFIRM Work

- State of South Dakota - Brown, Davison, Sanborn, and Spink County DFIRMs.
- Bowen Collins & Associates, State of Utah – Box Elder, Iron, Moab/Grand, Sevier, Wasatch, Washington County DFIRMs.
- State of Missouri – State Emergency Management Agency (SEMA) – Boone, Franklin, Henry, Howell, Johnson, Lawrence, Perry, St. Louis, Wayne County DFIRMs
- North Dakota State Water Commission – Stark County DFIRM.
- State of Alabama – Colbert County DFIRM

- State of Arizona – Mohave County DFIRM
- State of Kentucky DOW – Henderson County DFIRM
- State of West Virginia – Greenbrier, Mineral, Webster Counties, WV DFIRM
- State of Virginia – Prince George County DFIRM
- State of Maryland – Alleghany County DFIRM

Dam Inundation Mapping

- Critical Infrastructure Protection and Resiliency (CIPR) – Dam Break Inundation Mapping: CONUS, USACE Nationwide, 2010

Brenna Howell

QA/QC, Man-Made Hazards, and Capabilities Assessment

Professional Biography

Brenna Howell has more than 15 years of consulting experience with the last 10 years focused on development of local Emergency Operations Plans, local Hazard Mitigation Plans, and hazard-specific functional annexes (including Floods) specifically for California local government jurisdictions. She has performed such work for Colusa, Kings, Merced, Nevada, Sacramento, Sutter, Yolo, and Yuba counties. Brenna has also completed work for multiple cities such as Lakeport, Clearlake, Piedmont, Winters, Woodland, West Sacramento, Davis, Sacramento, Chico, Piedmont, Los Banos, Avenal, and Hanford. Brenna has served as the Emergency Services Coordinator the cities of Stockton and West Sacramento, as well as the County of Yolo providing full emergency management program management responsibilities. Brenna is fully conversant with the concepts and protocols of the National Incident Management System (NIMS) and the California Standardized Emergency Management System (SEMS). She has been managing projects for many years and has a proven track record in managing consultant teams to plan and implement large and small emergency planning projects.

Education

- Bachelor's of Science – Emergency Management and Public Safety, Grand Canyon University, 2013.

Representative Projects

General Project Experience

Brenna Howell has completed FEMA-approved Hazard Mitigation planning projects for the Kings, Sierra, Merced, Yolo, and Yuba Counties. Brenna recently completed over 30 Flood Emergency Operations Plan for Reclamation Districts in San Joaquin County and has completed many Basic Emergency Operations Plans throughout California. Brenna has served as Project Manager for Sacramento County on several planning projects such as their Fall Functional Exercise Team and After Action Report, the Evacuation Standard Operating Procedures, and their Continuity of Operations Plan projects. Brenna also serves other emergency management firms and companies as a sub-contractor to utilize her expertise in the area of Emergency Operations Center management and function, as well as an Emergency Operations Plan subject matter expertise as recent as January 2017.

Sample Emergency Management and Hazard Mitigation Plans

City of Lakeport

Brenna is working with Foster Morrison on a single jurisdiction Local Hazard Mitigation Plan with the City of Lakeport. She will work on specific hazards, the capability assessment, and will provide QA/QC. She will assist with the risk assessment and mitigation strategy meetings.

City of Clearlake

Brenna is working with Foster Morrison on a single jurisdiction Local Hazard Mitigation Plan with the City of Clearlake. She will work on specific hazards, the capability assessment, and will provide QA/QC. She will assist with the risk assessment and mitigation strategy meetings.

City of Piedmont

Brenna is working with Foster Morrison on a single jurisdiction Local Hazard Mitigation Plan with the City of Piedmont. She will work on the capability assessment as well as providing QA/QC. She will assist with the risk assessment and mitigation strategy meetings.

Lake County

Brenna worked on a single jurisdiction Local Hazard Mitigation Plan with Lake County. She wrote the cyanobacterial and quagga mussel hazards, as well as the EOP annex to the Lake County Local Hazard Mitigation Plan Update. She also assisted with the risk assessment and mitigation strategy meetings.

Colusa County

Brenna worked with the incorporated jurisdictions and special districts in Nevada County to create annexes to the Lake County Local Hazard Mitigation Plan Update. She also assisted with the risk assessment and mitigation strategy meetings.

Los Angeles Unified School District

Brenna is working with the Los Angeles Unified School District to create the LAUSD Hazard Mitigation Plan Update. She is working on man-made hazards profiles and vulnerability assessments. She also assisted with the risk assessment and mitigation strategy meetings.

Nevada County

Brenna worked with the incorporated jurisdictions and special districts in Nevada County to create annexes to the Nevada County Local Hazard Mitigation Plan Update. She also assisted with the risk assessment and mitigation strategy meetings.

Merced County

Brenna worked with Merced County on multiple planning processes: Merced County Emergency Operations Plan update, Local Hazard Mitigation Plan development (FEMA approved), Access and Functional Needs Plan development, EOC Training for the County and Cities, Mass Care and Shelter planning, and Continuity of Operations Plan update for the County and the cities of Atwater, Dos Palos, Gustine, Livingston, Los Banos and Merced. Consultant selected October 2010 to present.

Yolo County

Emergency Operations Plan development, Local multi-jurisdictional Hazard Mitigation Plan update and revision, development of their Emergency Support Function Annexes (1-15), back-up Emergency Services Coordinator to the County Emergency Manger, provide overall emergency management support on a contract basis.

Yuba County

Brenna worked with Yuba County on a Multi-Jurisdictional Local Hazard Mitigation Plan update and revision. She also assisted the County with a Reclamation District Flood Response Plan was the Mapping Project Manager.

Kings County

Kings County Local multi-jurisdictional Hazard Mitigation Plan update and revision, Emergency Operations Plan update and revision, several functional annexes (Mass Care, Access and Functional Needs, Emergency Operations Center).

Other Local, State, and Federal Planning Involvement

Brenna is currently a part-time Emergency Services Coordinator for the City of West Sacramento. She developed their Emergency Management Team policies and procedures, revised their All-Hazards EOP and coordinated with the West Sacramento Police Department on the development of the city's Evacuation plan. Other city responsibilities include, the oversight of day to day emergency management responsibilities and direct assistance in the areas of: planning, training, preparedness, response, recovery, and mitigation. While at the City of West Sacramento, Brenna served on the Yolo County Local Hazard Mitigation Plan revision planning team. This was a critical planning effort for the City of West Sacramento.

While working at the former Governor's Office of Emergency Services (OES), Brenna provided direct support to Operational Areas (cities, counties, and special districts) as well as state agencies in coordinating all aspects of emergency preparedness, planning, training, exercise development, response, recovery and grant administration. Brenna was also responsible for special projects such as: West Nile Virus, agricultural rendering, regional evacuation planning, Delta flooding issues and multi-agency coordination.

During Brenna's tenure at OES she responded to numerous emergencies and disasters statewide, in both Liaison and Agency Representative roles to ensure compliance with the Standardized Emergency Management System (SEMS). Brenna served many of the county governments in which she was assigned on their local hazard mitigation planning teams during the release of FEMA's DMA 2000 program. She provided technical expertise to the counties during the release of this new federal program. Additionally, while in those response roles, Brenna worked to broker Mutual Aid resources and information. She has served in Emergency Operations Centers at all levels of government and has been assigned to several field level Incident Command Posts. In 2004, Brenna was appointed to a team that responded out of state to the Florida Hurricanes.



Foster Morrison Consulting

5628 W Long Pl

Littleton, CO 80123

303.717.7171

www.fostermorrison.com





November 5, 2018

Proposal to **Develop Hidden Valley Lake Community Services District's Local Hazard Mitigation Plan**

Prepared for:
Hidden Valley Lake Community Services District
Attn: Alyssa Gordon, Water Resources Specialist
19400 Hartmann Road
Hidden Valley Lake, California 95476
(707) 987-9201
agordon@hvlcsd.org

Prepared by:
Wood Environment & Infrastructure Solutions, Inc.
Attn: Juliana Prosperi, AICP
10940 White Rock Road, Suite 190
Rancho Cordova, California 95670
(916) 853-8903
juliana.prosperi@woodplc.com





Wood Environment & Infrastructure Solutions, Inc.
10940 White Rock Road, Suite 190
Rancho Cordova, California 95670
T: (916) 636-3200
F: (916) 636-3208
www.woodplc.com

5 November 2018

Attn: Alyssa Gordon, Water Resources Specialist
Hidden Valley Lake Community Services District
19400 Hartmann Road
Hidden Valley Lake, CA 95467

Subject: Proposal to Prepare a Local Hazard Mitigation Plan

Dear Ms. Gordon:

The Wood Environment & Infrastructure Solutions, Inc. (Wood) team consists of expert and experienced planning professionals who are ready to develop a Local Hazard Mitigation Plan (LHMP) for the Hidden Valley Lake Community Services District (District) as described in the Request for Proposal dated 22 October 2018. We have brought together an outstanding team of uniquely qualified planning professionals to prepare the District's LHMP. Our team has prepared numerous single and multi-jurisdictional plans throughout California, as well as LHMPs for special districts. We have in-depth knowledge of and experience with new requirements under the Disaster Mitigation Act, as well as the planning requirements for the Flood Mitigation Assistance Program, and the National Flood Insurance Program Community Rating System. Recently, our team has provided hazard mitigation planning services for Fresno, Placer, Kern, Sacramento, San Luis Obispo, Sutter, and Amador counties, the City of Tracy and for the Calaveras County Water District.

Highlights of our team capabilities, strengths, and our approach include:

- Hazard Mitigation Lead with over 23 years of professional experience and a demonstrated record of success working closely with local agencies to identify creative solutions to complex hazard planning issues, including preparation of over 40 LHMPs and updates and expertise with climate adaptation, flood management, and drought planning.
- Project Manager located in Rancho Cordova, California with 17 years of professional experience preparing land use plans, specifically General Plans, Hazard Mitigation Plans, and environmental documentation.
- A technical team with expertise in using Geographic Information Systems, FEMA's HAZUS 4.2 software, RiskMap, and other spatial analysis tools to provide mapping updates and Level 2 vulnerability assessments.

Wood understands that this effort will allow the District to become eligible for grants under the Federal Emergency Management Agency's Hazard Mitigation Assistance program. Because our key staff have prepared approved plans for nearby jurisdictions and water districts in the Sierra Nevada region, we understand the environmental conditions, natural hazards, and development patterns within the region. We also plan to utilize local technical staff from our Petaluma, Oakland, and Rancho Cordova offices to ensure we provide a timely and cost-effective LHMP. For these reasons, we are confident we are the most qualified firm to develop the District's LHMP.

Mr. Walter Kim has the authority to negotiate and contractually bind Wood with the District and the terms of the proposal. We understand that following selection of the most qualified firm, a final professional services agreement will be negotiated. Should you have any questions, please contact Mr. Kim at (916) 853-8946 or our



Ms. Alyssa Gordon
Hidden Valley Lake Community Services District
5 November 2018
Page 2

Project Manager, Ms. Juliana Prosperi, AICP at (303) 503-7794. We look forward to the opportunity to work with you.

Sincerely,
Wood Environment & Infrastructure Solutions, Inc.



Juliana Prosperi, AICP
Senior Environmental Planner
Direct: (916) 853-3200
Cell: (303) 503-7794
juliana.prosperi@woodplc.com



Walter H. Kim, ENV SP
Senior Associate Engineer
Direct: (916) 853-8946
Cell: (916) 743-1533
walter.kim@woodplc.com

Attachments: [Firm Qualifications, Detailed Scope of Work, Cost Estimate, Schedule, Firm References, Resumes]



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1. Introduction

Wood Environment and Infrastructure Solutions, Inc. (Wood) is pleased to submit this proposal in response to your request to prepare a Local Hazard Mitigation Plan (LHMP) for the Hidden Valley Lake Community Services District (District). Wood is uniquely qualified to perform the work as we have successfully prepared Hazard Mitigation Plans for municipalities and special districts across California for the past 25 years, and for various state, regional, and local agencies across the western United States. Wood follows a proven approach that has been applied successfully in our California mitigation planning projects, including for various hazard mitigation planning projects for Fresno, Placer, Kern, Sacramento, Sutter, Amador, and Calaveras Counties and others across the United States. We carefully follow an integrated plan development process that meets the process and technical requirements of the Disaster Mitigation Act of 2000 (DMA) as well as the planning requirements for the Flood Mitigation Assistance Program (FMA), and the National Flood Insurance Program Community Rating System (CRS). Our plans also follow the Federal Emergency Management Agency (FEMA) 2013 Local Mitigation Planning Handbook and 2011 Local Mitigation Plan Review Guide, and we ensure that plans developed in California comply with Senate Bill (SB) 379, SB 1000, among other state legislation that applies to cities and counties (i.e., SB 2140). Wood's plans have not only received approval by the California Office of Emergency Services (Cal OES) and FEMA, but much praise. Most importantly, our clients have been satisfied as well. In fact, we have completed several plan updates for our original planning clients, such as Fresno, Placer, Sacramento, and Kern counties, and for Calaveras County Water District. We also recently started preparing the City of Tracy LHMP and San Luis Obispo County's Multi-Hazard Mitigation Plan Update.

This proposal is being submitted by Wood's Rancho Cordova office. We are an international environmental and engineering services firm with more than 65,000 employees in 50 countries worldwide. We operate more than 100 offices in North America comprising more than 4,000 scientists, geologists, engineers, biologists, planners, and other specialists, including 500 professionals in California. Wood operates 12 California offices, including our Rancho Cordova, Petaluma, and Oakland offices, which will support the District's LHMP project. Information on the main three offices that will be involved in this project are provided below:

- | | |
|--|---|
| <ul style="list-style-type: none"> ▶ Rancho Cordova Office
10940 White Rock Road, Suite 190
Rancho Cordova, CA 95670
(916) 853-8903 | <ul style="list-style-type: none"> ▶ Oakland Office
180 Grand Avenue, Suite 1100
Oakland, CA 94612
(510) 663-4100 |
| <ul style="list-style-type: none"> ▶ Petaluma Office
1670 Corporate Circle, Suite 101
Petaluma, CA 94954
(707) 793-3800 | <ul style="list-style-type: none"> ▶ Boulder Office
1002 Walnut Street, Suite 200
Boulder, CO 80302
(303) 443-7839 |

Both Mr. Marc Lombardi and Mr. Walter Kim with the Rancho Cordova office are authorized to negotiate contracts with the District. Their name, title, and contact information are provided below.

- | | |
|---|---|
| <ul style="list-style-type: none"> ▶ Mr. Marc R. Lombardi, CEM, PG
(916) 853-8903
marc.lombardi@woodplc.com | <ul style="list-style-type: none"> ▶ Mr. Walter H. Kim, ENV SP
(916) 853-8946
walter.kim@woodplc.com |
|---|---|



Firm Qualifications

Hazard mitigation plan development is one of Wood's (formerly Amec Foster Wheeler) core competencies. Wood has developed DMA compliant mitigation plans since 2003, but our mitigation planning staff brings a rich background of experience that is rooted in the development of FEMA's original mitigation planning programs. Our comprehensive mitigation planning experience includes developing and teaching FEMA's hazard mitigation planning courses, conducting detailed risk assessments, and coordinating multi-jurisdictional, multi-disciplinary planning teams and stakeholders. Additionally, Wood has demonstrated success in providing cost-benefit analysis, securing funding, and implementing mitigation projects for local and state governments.

Wood has notable prior experience developing DMA, FMA, and CRS compliant plans. Our hazard mitigation planning experience includes 138 state and local hazard mitigation plans in 16 states within seven FEMA regions, including 17 in California, providing coverage for well over 1,200 jurisdictions. All planning efforts took place in the past 12 years and most were approved as submitted, with minimal requests for changes from FEMA. The scope of these mitigation plans ranges in size and complexity from a single jurisdiction plan for a small rural county or special district, to a disaster resistant university plan for a major state university, to an 11-county multi-jurisdictional plan covering 21,600 square miles with 176 participating local governments.

2. Project Personnel and Management

Our team is well qualified to prepare the District's LHMP. We have availability and can perform these services using our Rancho Cordova, Petaluma, and Oakland, California planning staff and Boulder, Colorado emergency management, planning, and GIS experts. Wood's most qualified and experienced hazard mitigation planning staff are immediately available to begin work on this project. These core staff have been involved in the development of multiple local mitigation plans and plan updates that meet DMA, FMA, and CRS planning requirements and are uniquely knowledgeable of natural hazards and mitigation strategies. Our team will be managed by Ms. Juliana Prospero, an American Institute of Professional Planners (AICP)-certified planner, supported by Mr. Jeff Brislawn, a Certified Floodplain Manager (CFM), and overseen by Kyle Karsjen, our Senior Emergency Management Specialist and QA/QC Manager. The table below summarizes key personnel education project experience; professional affiliations, licenses or certifications; and qualifications on relevant and recent California projects. The table also highlights key personnel's primary responsibilities. Resumes are included at the end of the proposal.

Staff Qualifications Summary

Name	Education	Experience and Expertise
Jeff Brislawn, CFM	<ul style="list-style-type: none">MS/Geology, Engineering/Environmental Specialization/Colorado State University, 1992BS/Geology/Ohio University/Athens, OH, 1987	<ul style="list-style-type: none">Senior Hazard Mitigation Specialist and Project Manager with over 23 years of experience working on hazard mitigation plans, including three recent County multi-hazard mitigation plans located in CaliforniaCertified Floodplain Manager
Kyle Karsjen	<ul style="list-style-type: none">Bachelor of Science, Community and Regional Planning/Iowa State University, 2004	<ul style="list-style-type: none">Senior Emergency Management Specialist with 15 years of experienceExpertise reviewing and ensuring quality assurance/quality control

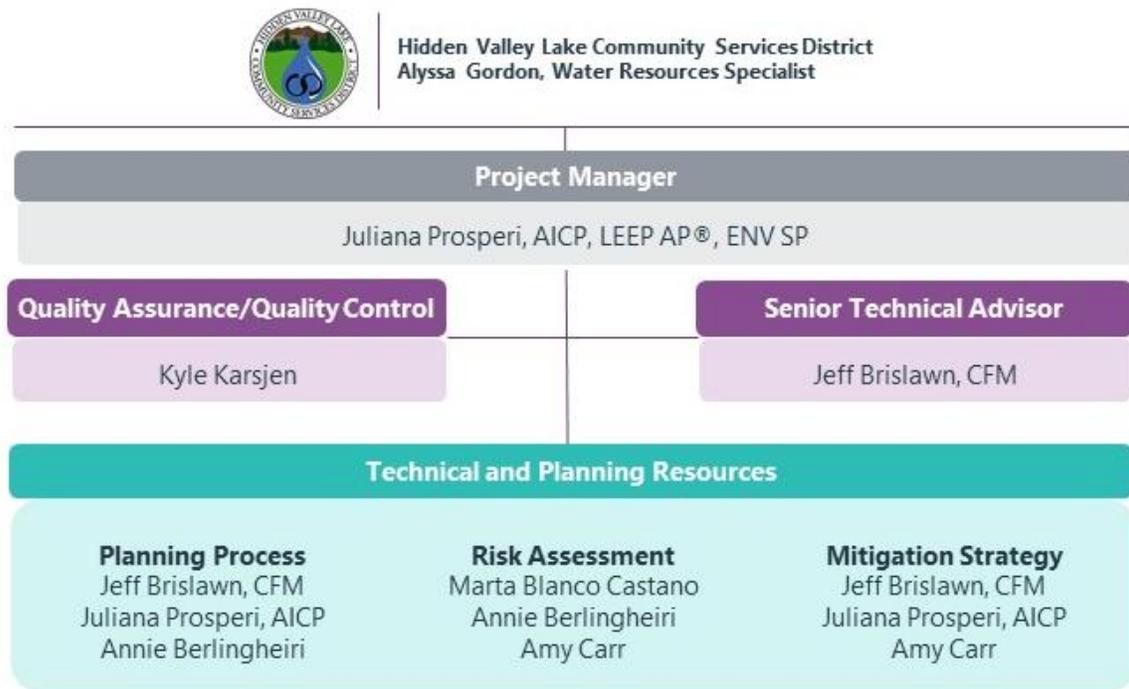


Name	Education	Experience and Expertise
Juliana Prosperi, AICP, LEED AP®, ENV SP	<ul style="list-style-type: none"> MA/Environmental Science and Energy Analysis/Boston University, 2004 BA/Environmental Studies/University of Colorado – Boulder, 2001 BA/English/University of Colorado – Boulder, 2001 	<p>(QA/QC) on draft LHMPs and MHMPs</p> <ul style="list-style-type: none"> AICP-certified planner with versatile planning expertise in California Over 17 years of experience providing planning, outreach, stakeholder engagement, and facilitation support Applies climate change science to hazard assessments and develops climate adaptation strategies
Marta Blanco Castano	<ul style="list-style-type: none"> MS/Geographic Information Science/University of Denver, 2017 BA/ Geography and Environmental Studies, University of Colorado, 2015 	<p>Provides Geographic Information Systems (GIS) and planning for local and state hazard mitigation plans</p> <ul style="list-style-type: none"> Expertise in GIS geodatabase management and organization of spatial datasets
Amy Carr	<ul style="list-style-type: none"> MURP/Urban and Regional Planning/University of Colorado Denver, 2017 BA/Urban Studies/College of Charleston, 2014 	<ul style="list-style-type: none"> Experience working on hazard mitigation plans for state, regional, and local agencies Expertise supporting community outreach engagement
Annie Berlingheiri	<ul style="list-style-type: none"> MS/Geology, West Virginia University, 2013 BA/Earth and Planetary Sciences, Ohio Wesleyan University, 2007 	<ul style="list-style-type: none"> Five years of experience providing support with flooding and dam failure technical analysis and mapping Excellent technical writing and analysis skills

Our project organizational chart is provided below, followed by short biographies of key staff members that include a summary of experience on similar projects. Ms. Juliana Prosperi will be the main point-of-contact with the District and will be responsible for overall management, and tracking the project deliverables, schedule, and budget. Mr. Jeff Brislawn, our Senior Hazard Mitigation Specialist, will provide oversight and direction on all planning phases, with support from the Hazard Mitigation and Emergency Management staff in Rancho Cordova, Petaluma, and Oakland, California; and Boulder, Colorado.



Organizational Chart



Jeff Brislawn, CFM – Senior Hazard Mitigation Specialist: Mr. Brislawn will serve as the Senior Hazard Mitigation Specialist for the District’s LHMP. Among other tasks, Mr. Brislawn will assist in scoping mitigation projects for the LHMP that will be likely candidates for successful FEMA mitigation funds. Mr. Brislawn is the Hazard Mitigation Lead/Sr. Associate in Wood’s Hazard Mitigation and Emergency Management Program and has over 23 years of experience in Emergency Management, GIS and mitigation planning work for state and federal governments, as well as technical assistance to local governments. Mr. Brislawn has been the project manager on several DMA compliant local and state hazard mitigation plans, including Fresno and Kern counties, as well as provided GIS-based risk analysis in support of many others. Mr. Brislawn also has specialized experience with dam failure evacuation planning efforts, drought planning, and climate adaptation planning. Mr. Brislawn is experienced with FEMA mitigation grant programs and has assisted local and state governments with the development of technically feasible, cost effective and environmentally sound mitigation project applications. Mr. Brislawn is an experienced user of FEMA’s cost-benefit analysis software modules and HAZUS, FEMA’s multi-hazard loss estimation software. Mr. Brislawn has provided GIS and natural hazards mitigation technical assistance to the FEMA Mitigation Division during times of disaster, travelled to disaster areas (1994 Northridge earthquake and 1989 Loma Prieta earthquake), and assisted with community outreach.

Kyle Karsjen – Senior Emergency Management Specialist/Quality Assurance/Quality Control: Mr. Karsjen is the Senior Emergency Management Specialist for Wood’s Hazard Mitigation and Emergency Management Program. Mr. Karsjen has over 15 years of experience in emergency management in both government and the private sector, including threat/hazard identification and risk assessment, capabilities



assessment, hazard mitigation, emergency response planning, infrastructure and asset protection, strategic planning, and program assessment. Mr. Karsjen has served as project manager on a variety of projects across the Midwest and Western regions of the United States, as well as providing support for projects across the country. Throughout his career, Mr. Karsjen has been responsible for the development of an assortment of plans and planning products, most of which have involved facilitating diverse groups of stakeholders toward the development and implementation of specific planning and project goals. Additionally, Mr. Karsjen has offered guidance and technical assistance on hazard mitigation and emergency response plan development to counties and communities.



Juliana Prosperi, AICP, LEED AP®, ENV SP – Project Manager: Ms. Prosperi has over 17 years of experience and is an AICP-certified planner. She is also a regulatory compliance specialist with expertise in environmental, transportation, and land use planning with an emphasis on hazard mitigation, climate adaptation, and sustainability planning and policy. Ms. Prosperi has worked extensively as an environmental consultant on projects ranging from new schools, linear electric and water infrastructure development, renewable energy, mines, land use, hazard mitigation plans, and parks, trails, and recreation master plans. As a project manager, her skills span compliance with the National Environmental Policy Act, California Environmental Quality Act, and Tahoe Regional Planning Agency Regional Plan and Code of Ordinances. As a land use planner, Ms. Prosperi regularly conducts environmental review, successfully manages multi-disciplinary teams in the preparation of national and state environmental impact documents, prepares Local and Multi-Hazard Mitigation Plans, and provides regulatory permitting support. She provides technical planning services and community and stakeholder engagement strategy support, including organizing public participation plans; facilitating workshops, open houses, public meetings; and presenting in front of decision-makers. She is a versatile planner that is proficient in all aspects of current and long-range planning, outreach and engagement, and facilitation.

Amy Carr – Hazard Mitigation Planner: Ms. Carr has educational and professional planning experience with a focus on land use and hazard mitigation. She will provide support to the project team in the development of the hazard profile/vulnerability assessment update as well as other chapters of the plan. She worked as a Planner for Arapahoe County, Colorado to review site plans by applying the County’s Land Development Code and Comprehensive Plan to each plan. She worked with the City of Manitou Springs to research hazard mitigation strategies for flooding and wildfire that could be applied to historic properties without diminishing their historic integrity. She created educational handouts for the public based on her research. She received her BA in Urban Studies with a concentration in Urban Planning from the College of Charleston and her Master’s in Urban and Regional Planning with a focus on hazard mitigation from the University of Colorado, Denver.

Marta Blanco Castano – Hazard Mitigation Planner and GIS Analyst: Ms. Marta Blanco Castano is a GIS Analyst for Wood and provides support on hazard mitigation, drought, emergency management, and other planning projects. She will be the lead planner and will provide support to the project team in the development of the Hazard Identification and Risk Assessment, including GIS and hazard profile/vulnerability assessment update. She has experience with GIS, which allow for the collection, analysis, management, storage, and representation of a variety of spatial and non-spatial datasets.



Annie Berlingheiri – Staff Geologist: Ms. Berlingheiri has five years of experience in environmental hydrology and geology, and hazard mitigation planning with a focus on supporting projects in rural and mountainous regions with impacted mountain streams. She has provided task management and technical support on both government and private sector projects. Ms. Berlingheiri has managed and supported the development of site characterization reports, technical studies, work plans, standard operating procedures, hazard/risk assessments, and environmental assessments. She has assisted in the development of watershed-scale and local-scale water budgets.

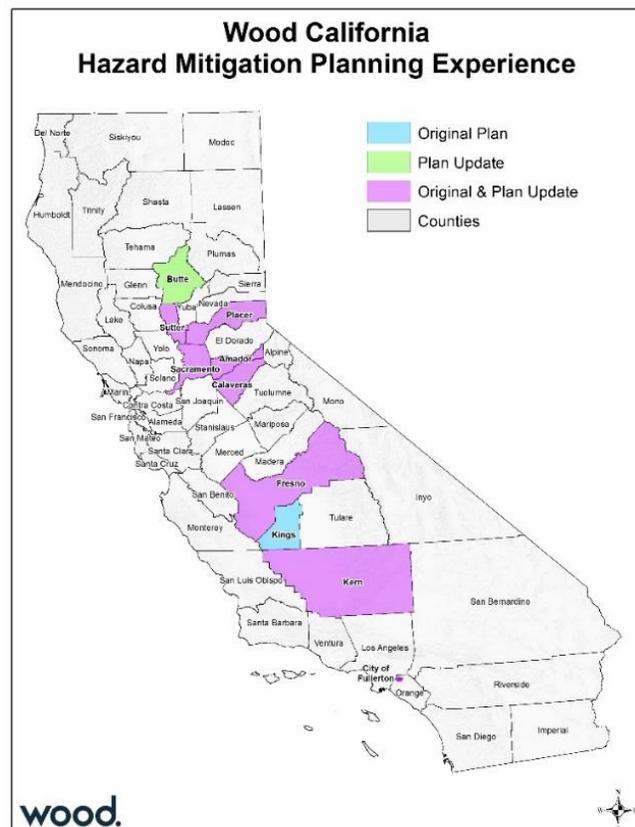
Support Staff: Wood support staff, including water resource engineers from our Rancho Cordova office will be used, as needed to help the District scope projects and costs for HMGP grant applications.

3. Experience

Our Hazard Mitigation & Emergency Management staff brings extensive experience with plan development and plan updates approved by Cal OES and FEMA. The Wood project team has a long-standing relationship with FEMA Region IX. We have completed 17 local plans in California: 14 multi-jurisdictional and three single jurisdictional LHMPs approved by the Region: Fresno (original plan and update in FEMA review phase), Sutter (original plan and plan update), Butte (plan update), Amador (original and update), Kern (original and update), Placer (original and update), Sacramento (original and update), Calaveras (original plan), and Kings (original plan) counties; the City of Fullerton (original plan); and the Calaveras County Water District (original and two updates). Many of our clients continue to use our services on update cycles, which we feel is a testament to the quality of our plans and planning processes.

Wood has also completed and received FEMA approval of one plan in Nevada for Washoe County. Although each plan followed a similar planning process designed to identify strategies that help clients reduce future losses and become eligible for FEMA mitigation funding, they are each customized to reflect the unique aspects of their respective planning areas. We also have experience with state plan update cycles as well, including the update of nine state hazard mitigation plans (Arkansas, Colorado, Missouri, Mississippi, New Mexico, Kansas, North Dakota, South Dakota, and Wyoming). Our firm was also hired to “fix” locally developed plans that did not pass the FEMA requirements. FEMA and Cal OES are familiar with and respect the quality of Wood-facilitated hazard mitigation plans.

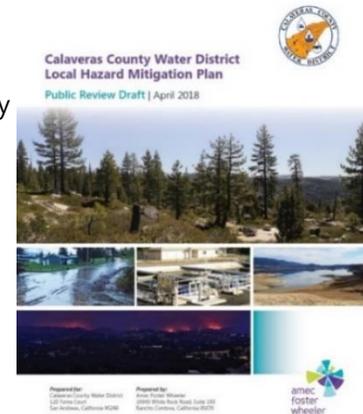
The development of the plans detailed below are similar in scope and performed by the staff identified in primary roles for the development of the LHMP. We have a proven ability to deliver high-quality plans in tight timeframes, as demonstrated in some of the past project examples below, thus we are confident of our ability to respond to District staff and project demands in a timely and competent manner. Many of



our clients return to us to complete the requisite five-year updates or utilize our grants skills to help them find funding and manage project implementation. Once we have a working relationship with the District, it is our goal to remain the District's long-term partner in hazard mitigation planning and tracking, if we are awarded the hazard mitigation planning work. We also have availability to complete hazard mitigation planning through May 2019 and can perform these services through the support of our Rancho Cordova, Petaluma, and Oakland, California and Boulder, Colorado planning and GIS staff.

Calaveras County Water District Hazard Mitigation Plan – Original and Updates

Wood recently updated Calaveras County Water District's (CCWD's) LHMP within a streamlined 6-month timeframe to ensure the CCWD continues to remain eligible for FEMA grant funding. The planning process began in mid-January 2018 and the Draft LHMP was submitted to Cal OES for review in early June 2018. This single jurisdictional plan covered all 657,920 acres of the Calaveras County planning area in the central Sierra Nevada foothills in the northeastern portion of California. The topographically diverse area spans the Sierra Nevada Mountains and San Joaquin Valley and includes small rural communities and rapidly urbanizing communities along the western border with San Joaquin County.



The plan underwent a comprehensive update in early 2018 building upon the plan that was previously updated in 2012, and originally updated in 2006 – both times by Wood. The plan demonstrates CCWD's and the community's commitment to reducing risks from hazards and serves as a tool to help decision makers direct mitigation activities. The plan was also developed to ensure CCWD's continued eligibility for certain federal disaster assistance: specifically, grant funds available through the FEMA Hazard Mitigation Grant Program (HMGP), the Pre-Disaster Mitigation Program (PDM), and the FMA. By ensuring the LHMP remains current, the CCWD has been awarded multiple FEMA HMGP and PDM grants.

For the public outreach component, Wood re-convened participants of the original HMPC, as well as several new members from Calaveras County, CalFIRE, and American Red Cross. Our team facilitated three planning workshops under a short timeframe to ensure CCWD completed the Public Review Draft by Spring 2018. The public participation plan included developing a LHMP Webpage, media press releases, radio advertisements, newspaper notices, and an online public survey that generated over 125 responses.

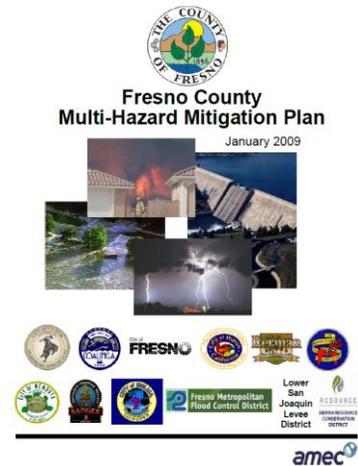
The hazard identification and vulnerability assessment included a detailed critical facility inventory and analysis. The GIS database accounts for over 140 of CCWD's water and wastewater facilities, including water treatment plants, wastewater treatment plants, lift stations, pump stations, spray fields, and diversion dams. The plan update also contains a qualitative discussion on the probable effects of climate change for the hazard of concern. The discussion relies on information from the 2009, 2014, and 2018 California Climate Adaptation Strategy plan documents and uses information from Cal-Adapt. The LHMP was approved by Cal OES and FEMA in October 2018. The 2018 Final LHMP is available here:

<https://ccwd.org/wp-content/uploads/2013/12/Final-Draft-LHMP-Update-2018-compressed.pdf>

- ▶ Update Project Manager: Ms. Juliana Proseri
- ▶ Original Contract Amount: \$35,874
- ▶ Actual Fees Paid by Client: \$33,215

Fresno County Multi-Hazard Mitigation Plan – Original Plan and Updates

Wood developed a LHMP for Fresno County (County), including both natural and man-made hazards, and is in the final stages of the 2017-18 plan update. The multi-jurisdictional plan included the county, nine incorporated communities, and several districts and covers a large and topographically diverse geographic area. Due to its geographic diversity, the County was subdivided into western, central, and eastern planning regions to address unique issues with the coastal range, foothills, and mountainous areas.



Another unique aspect of this plan was the level of multi-jurisdictional coordination and participation. Due to the size of the County and the importance of participation to the jurisdictions, stakeholders, and interested parties, Wood conducted three educational meetings, at different times and locations within the County, but all within a 48-hour period. This was followed up with Wood-facilitated municipal level planning subcommittee meetings. This process enabled the jurisdictions to complete their own annexes to the plan, using a template developed by Wood. The plan focuses on strategies to mitigate flood, wildfire, earthquake, drought and agricultural hazards which pose a significant concern to the Fresno County Planning Area. Man-made hazards focused on the release of hazardous materials from both fixed locations and transportation corridors. A critical facility inventory and analysis, using GIS methods, was completed during the process. The planning process included three sets of public meetings. The 2017-18 plan update also included a hazard risk analysis associated with development trends and an enhanced assessment of levee failure and drought hazards, including land subsidence and drought-related tree mortality. The County is currently soliciting public comment on the updated plan before it is finalized and submitted for Cal OES and FEMA review and approval. The Public Review Draft and Appendices is available here:

<http://www.co.fresno.ca.us/departments/public-health/office-of-emergency-services-oes>.

- ▶ Update Project Manager: Mr. Jeff Brislawn
- ▶ Original Contract Amount: \$150,000
- ▶ Actual Fees Paid by Client: \$144,000 (estimated)

Kern Multi-Hazard Mitigation Plan – Original Plan and Updates

Kern County is California's third-largest county in land area, and at 8,172 square miles, it is larger than the state of Massachusetts, New Jersey, or Hawaii. Due to its large size and geographic diversity the planning area was subdivided into valley, mountain, and desert regions to capture the unique hazard issues associated with them. The County is susceptible to catastrophic earthquakes, floods, and wildfires. The planning effort utilized GIS to analyze property and critical facilities at risk to wildfire, based on mapping from CAL FIRE Very High Fire Hazard Severity Zones. The plan also captured post-fire erosion potential. The multi-jurisdictional plan includes 11 cities, 26 special districts, and 19 school districts, and involved coordination among jurisdictions and several public meetings. The planning team coordinated with community emergency response teams, fire safe councils, Kern Council of Governments, state and federal agencies, and neighboring counties. This plan includes over 200 mitigation projects. The 2012 plan update also included an analysis of hazard risk associated with development trends and an enhanced assessment of levee and dam failure hazards. The updated Plan is available at:

<http://kerncountyfire.org/operations/divisions/office-of-emergency-services/emergency-plans/hazard->

[mitigation-plan.html](#).

- ▶ Update Project Manager: Jeff Brislawn
- ▶ Original Contract Amount: \$57,000
- ▶ Actual Fees Paid by Client: \$57,000

References

- ▶ Peter Martin, Water Resources Manager
Calaveras County Water District
120 Toma Ct. San Andreas, CA 95249
(209) 754-3094
peterm@ccwd.org
- ▶ Christin Shepherd, P.E., CFM, Civil Engineer II
City of Boulder, Public Works/Utilities
1739 Broadway, Boulder, CO 80302
(303) 441-1889
shepherdc2@bouldercolorado.gov
- ▶ Wendy J. Benson, Administrative Coordinator
Kern County Fire Department, Office of Emergency Services
2601 Panorama Drive, Building B, Bakersfield, CA 93306
(661) 873-2603
wbenson@co.kern.ca.us

4. Scope of Work

Our Understanding

Hidden Valley Lake Community Services District is a small special district that has a service area comprised of 1,882 acres of residential, agricultural, and minor commercial land uses within the Hidden Valley Lake subdivision. The District's service area is located 5 miles northeast of Middletown and approximately 12 miles southeast of Clearlake in the southern portion of Lake County, California. The District's service area is bounded by Highway 29 to the west, Putah Creek to the south, the Ranchos subdivision to the east, and undeveloped lands to the north. It provides potable water and wastewater collection and treatment services to approximately 7,000 residents. The District provides water to these residents through seven water storage tanks and four wells. The District also has an agricultural well that provides water along Putah Creek during the summer months to mimic the natural surface water flow, and a sewer reclamation plant is located along Grange Road, which provides reclaimed water to Hidden Valley Lake golf course.

Over the past three years, some of the largest wildfires ever recorded within California occurred in portions of Lake County, including the Mendocino Complex (Ranch Fire) fire that burned 410,203 acres this fire season. This wildfire and numerous other wildfires that proceeded it have all burned large portions of Mendocino National Forest, residential homes, and some fires that impacted developed cities in Sonoma County. In 2017, the nearby Tubbs Fire burned 36,807 acres and in 2016 the nearby Clayton Fire burned 3,929 acres north of the Hidden Valley Lake subdivision near Clearlake. Wood understands the impact these natural hazard events have on communities. We know that the District, as a large water



supplier in the region, helped support the fire response teams in the region, specifically during the Mendocino Complex fire. We also know that the District recently applied for a Hazard Mitigation Grant Program (HMGP) grant not long after the FEMA Disaster Declaration was filed in October 2017 during the major wildfires that spread across California. The intent of the HMGP was to fund the preparation of a LHMP, which ensures the District is eligible for FEMA hazard mitigation funding.

Our Approach

Wood understands that the District needs to develop a LHMP that is accepted by the Cal OES and FEMA and with the goal of meeting the eligibility requirements for the HMGP under Section 404 of the federal Disaster Relief Act (The Stafford Act, as amended). We know several critical and time-sensitive District mitigation projects are pending based on development and approval of the LHMP. With this understanding, Wood will develop a single-jurisdiction LHMP consistent with the requirements of DMA 2000, FMA and associated planning guidance that includes natural and climate-related hazards. We will also consider all hazards of concern evaluated in the 2018 Lake County LHMP Update, which included dam failure, drought and water storage, earthquake, flooding, landslide and debris flow, severe weather, and wildfire. New natural hazards considered in the 2018 Lake County LHMP will also be considered, such as agricultural hazards, aquatic biological hazards (e.g., cyanobacterial blooms, invasive quagga mussels), and severe extreme heat. We understand that this will be the first LHMP prepared for the District. Therefore, the District needs to prepare the hazard and risk assessment, develop a mitigation strategy, draft the plan itself, and facilitate planning workshops, Board of Directors hearings, and staff meetings.

The following table summarizes FEMA’s original four-phase planning process, the detailed CRS flood mitigation planning steps, and the nine handbook planning tasks from FEMA’s March 2013 Local Mitigation Planning Handbook. It provides an overview of the four-phase approach (and detailed 10-step planning process) Wood will take to develop the District’s LHMP.

Wood’s Hazard Mitigation Planning Process

FEMA 4 Phase Guidance and Wood Work Plan Phases	Community Rating System (CRS) Planning Steps	2013 FEMA Local Mitigation Planning Handbook Steps (44 CFR Part 201)
Phase 1: Organize Resources	Step 1. Organize Resources	1: Determine the Planning Area and Resources 2: Build the Planning Team 44 CFR 201.6(c)(1)
	Step 2. Involve the public	3: Create an Outreach Strategy 44 CFR 201.6(b)(1)
	Step 3. Coordinate with Other Agencies	4: Review Community Capabilities 44 CFR 201.6(b)(2) & (3)
Phase 2: Identify Hazards and Assess Risks	Step 4. Assess the hazard	5: Conduct a Risk Assessment 44 CFR 201.6(c)(2)(i) 44 CFR 201.6(c)(2)(ii) & (iii)
	Step 5. Assess the problem	
Phase 3: Develop a Mitigation Strategy	Step 6. Set goals	6: Develop a Mitigation Strategy 44 CFR 201.6(c)(3)(i); 44 CFR 201.6(c)(3)(ii); and 44 CFR 201.6(c)(3)(iii)
	Step 7. Review possible activities	
	Step 8. Draft an action plan	
Phase 4: Implement and Monitor the Plan	Step 9. Adopt the plan	8: Review and Adopt the Plan
	Step 10. Implement, evaluate, and revise	7: Keep the Plan Current



FEMA 4 Phase Guidance and Wood Work Plan Phases	Community Rating System (CRS) Planning Steps	2013 FEMA Local Mitigation Planning Handbook Steps (44 CFR Part 201)
		9: Create a Safe and Resilient Community 44 CFR 201.6(c)(4)

Our approach also incorporates the eight tasks outlined in the District’s Request for Proposals (RFP) to develop the District’s LHMP. A description of these tasks/phases is detailed below.

Phase 1: Organize, Coordinate, and Initiate Outreach Development

Planning Step 1: Develop the Planning Process

Critical to a successful mitigation planning process is building, coordinating, and facilitating a Hazard Mitigation Planning Committee (HMPC), or working group. The DMA planning criteria requires that a HMPC be created, as outlined in the table above. Wood will work with District staff to develop a list of HMPC members within both the District and among local and regional agencies and schedule a project kick-off meeting. As part of this phase, Wood will also prepare a schedule for the completion of the LHMP, and a Data and GIS Needs List to support timely gathering and analyzing of hazard data. The GIS Needs List for water and wastewater special districts typically consists of District assets by service area, such as critical lifeline utility, water, and wastewater facilities owned by the District (e.g., lift stations, pump stations, water tanks, water treatment plants, water reclamation plants). Additionally, we also request replacement values for the facilities that exclude the land value.

Wood will prepare for and facilitate HMPC Meeting #1. Ms. Juliana Prosperi will attend this meeting and Mr. Jeff Brislawn will attend via teleconference. The meeting will be utilized to detail the DMA hazard mitigation planning requirements, present the overall scope of services, detail the work requirements of the HMPC, and establish a detailed project schedule. A plan for public involvement (Planning Step 2) and coordination with other agencies and departments (Planning Step 3) will be discussed at this meeting. Wood will summarize the risk assessment process and detail the data requirements for the LHMP.

Wood will also provide a customized data collection guide to each of the HMPC members to assist the team in collection of required data. This unique Wood tool facilitates the collection of data, documents participation, and serves as a reference document during the planning process. Wood will then collect any additional relevant background documents, such as the District Sewer Master Plan, and available Water Management Plans, Emergency Operations Plans, Flood Mitigation Plans, and Stormwater Drainage Plans. To the extent possible we will make best use of the 2018 Lake County LHMP and any GIS information that can be provided by Lake County. These documents and spatial data sets will be used throughout the planning process to develop the Risk Assessment and to assess existing hazard mitigation capabilities.

Deliverables

- Preliminary Project Kick-Off meeting with District
- Distribution of Draft Project Execution Plan and Schedule
- Assistance with the formation of the HMPC
- HMPC Contact List
- HMPC Meeting #1 (Working Group Meeting)
- Presentation on hazard mitigation planning process at HMPC Meeting #1



- Prepare and distribute the Data Collection Guide

Planning Step 2: Public Outreach and Contact Coordination

As part of HMPC Meeting #1, conducted in Planning Step 1, Wood will work with the HMPC on how to effectively meet the planning requirements for public involvement. This may include inviting public stakeholders to serve on the HMPC or publicizing the activities of the HMPC through the District website and through press releases to local media outlets (e.g., newspapers, radio, television, social media). Wood and the District Water Resources Specialist will work together to develop outreach materials and to set up meeting dates for workshops.

Wood will also help the District plan one public workshop. In coordination with the District, Wood will assist in the preparation and facilitation of the public workshop. The public workshop can occur during the development of the LHMP or once the LHMP is circulated for public review (as outlined in the District's RFP). Wood will also assist the District with its public education and involvement efforts by drafting proposed text for public notices, press releases, flyers, brochures, meeting advertisements, or website postings. We will take advantage of the District's existing community involvement and public notification mechanisms. The District will be responsible for coordinating the release of all press releases, website postings, and other public outreach efforts (e.g., News and Updates Website). We will also prepare an Online Public Survey to encourage further participation by the public and other stakeholders.

Deliverables

- Assist in the identification of public involvement activities
- Draft text for press releases and websites
- Assist District in preparation for one (1) Public Workshop either during the LHMP development or during public review of the Draft LHMP
- Attendance at one (1) Public Workshop
- Assistance facilitating the Public Workshop and collecting public input and comment
- Compile input from the incorporation of public comment and potential changes for the LHMP
- Preparation and organization of an Online Public Survey

Planning Step 3: Coordinate with Other Departments and Agencies

DMA regulations require that the planning process is coordinated with other stakeholders and agencies. Representatives from District departments and local, state, and federal agencies may be asked to join the HMPC or to provide data and input during the planning process. Coordination with other local agencies may include the Lake County. Coordination with state and federal agencies may include: Cal OES, California Geological Survey, California Department of Water Resources, California Department of Forestry and Fire Protection (CalFIRE), California Department of Transportation, FEMA, National Oceanic and Atmospheric Administration, National Weather Service, US Forest Service, and other appropriate regional agencies to be identified early in the planning process.

In addition, Wood will coordinate this effort with existing District plans and studies, which may include infrastructure plans and capital improvement projects.

Deliverables:

- Identify and invite agencies to participate on HMPC and/or to provide data as necessary
- Update HMPC Contact List



Phase 2: Identify Hazards and Assess Risks

Planning Step 4: Identify the Hazards

The first task of the Risk Assessment is the Hazard Identification, which involves identifying and profiling hazard events that present a threat to the District. The planning effort will identify natural and climate-related hazards and will prioritize them by significance. Because the District's service area falls within the jurisdictional boundary of Lake County and the District participated in the County's plan update, we reviewed the recently prepared and approved 2018 Lake County LHMP to understand the hazards profiled and the mitigation actions developed for that plan. Based on our review of the 2018 Lake County LHMP, hazardous materials/transportation may be included as a man-made hazard to consider in the District's LHMP, but most other man-made hazards would likely be dismissed from further consideration as they either do not occur in the County or due to lack of past occurrences.

As part of the plan development process, the HMPC will then review the list of hazards during HMPC Meeting #2 (Planning Step 5). Hazards evaluated will include, but not be limited to, dam failure, drought and water storage, earthquake, flooding: 100/500 year and localized stormwater flooding, severe weather (extreme heat, heavy rains and storms, tornadoes, wind), soil hazards (erosion, expansive soils, landslides and debris flows, subsidence), wildfires, and others that may be considered significant by the District as previously mentioned (e.g., agricultural hazards, aquatic biologic hazards). A review and consideration of the hazards contained in the 2013 State of California Hazard Mitigation Plan, and in the 2018 Draft California State Enhanced Multi-Hazard Mitigation Plan (SHMP) (under development after public review) will also be evaluated for inclusion in this LHMP.

As part of the Hazard Identification, Wood will collect information about past hazard events. This will take place on- and off-site, and will include an Internet, newspaper and literature search for data related to historic events, and an inventory and review of the County's (if needed) existing (Geographic Information System (GIS) data layers. This assessment will also include collecting detailed information on impacts from California's multi-year drought on the District's facilities, as well as wildfires, and erosion and sedimentation potential in the District's watershed. The Project Team staff will collect data that describes:

- Natural hazards posing a risk to District;
- Geographic location and extent of hazards;
- The history of these hazards;
- Speed of onset/duration of the hazard;
- Severity of the hazard;
- The likelihood that these hazards will occur in the future; and
- The frequency and recurrence interval that they occur.

The hazards will be prioritized by the HMPC based on historical data, potential damage to critical infrastructure, potential loss estimates, occurrence data, and funding and mitigation abilities. Our data collection efforts will be focused on using existing data, as described in the DMA regulations. Data limitations and gaps will also be identified during this process. These limitations may be considered as recommendations in the mitigation strategy part of the plan. This step will also involve the development of a GIS geodatabase, if necessary.

Deliverables

- Collect the Hazard Identification Data



- Compile/analyze the data and draft the “Hazard Identification” portion of the Plan
- Maps prepared in ArcGIS and related files

Planning Step 5: Assess the Risks

Following identification of hazards in Step 4, Wood will complete the Risk Assessment by preparing a Vulnerability Assessment and a Capability Assessment as described below. Wood will work with District staff to use the best available hazard and inventory data, including GIS data.

Vulnerability Assessment. Wood will determine the likely impacts the hazards identified in Planning Step 4 would have on the District. This assessment will include the following, as feasible:

- Number and types of vulnerable District facilities;
- Actual or assessed values of the vulnerable facilities;
- Repetitive losses to facilities, if any;
- Critical facilities at risk;
- Natural and cultural resources at risk;
- Growth and development trends; and
- An estimate of losses per hazard, where feasible.

Wood will utilize GIS to perform potential loss estimations for priority hazards, as appropriate. These tools have proven useful in DMA planning projects as a baseline inventory source and loss estimation tool.

Capability Assessment. As part of the Risk Assessment and as required by Cal OES, Wood will evaluate the District’s existing capabilities to mitigate risk and vulnerabilities from hazards. By collecting information about existing programs, policies, regulations, and emergency plans, Wood can assess activities and measures already in place that contribute towards mitigating the vulnerabilities identified.

Once complete, the Risk Assessment “paints a picture” of the potential disaster impacts. The information obtained during this process details the “net vulnerability” of the District planning area (i.e., vulnerability tempered by existing capabilities), and it provides a platform for developing mitigation goals. In addition, this information provides a baseline of what these likely impacts would cost, thus providing an estimate of the benefits of any resulting mitigation actions. This provides added value to the LHMP by ensuring integration of the plan with existing policies, procedures, and other plans and assists in the identification of additional mitigation strategies.

Following the assimilation, compilation, and analysis of the Vulnerability and Capability Assessment data, Wood will then provide the compiled Risk Assessment to the HMPC for its review and input during HMPC Meeting #2. Both Ms. Juliana Prosperi and Mr. Jeff Brislaw will attend HMPC Meeting #2.

Deliverables:

- Vulnerability Assessment Inventories and Data
- Prepare loss estimations, as appropriate
- Compile/analyze the data and prepare Preliminary Draft of Risk Assessment
- HMPC Meeting #2 (Working Group Meeting)
- Presentation of Risk Assessment findings at HMPC Meeting #2



Phase 3: Prepare the Local Hazard Mitigation Plan

Planning Step 6: Draft Goals

The mitigation strategy is ultimately the most important part of the plan. It details plan goals and objectives and identifies and prioritizes mitigation actions designed to minimize the effects of natural hazards on the District’s planning area.

The HMPC will use the Risk Assessment as a platform for drafting mitigation goals and objectives for the LHMP. Goals provide a guide as to what should be done to improve the District’s disaster resilience. Objectives define strategies or implementation steps to attain the identified goals. The goals and objectives will reflect the District’s long-term vision to reduce the risk to people and property within the District’s planning area and will focus on enhancing overall mitigation capabilities. Goals and objectives from other District documents, as well as state plans, such as the 2013 California SHMP (and 2018 Draft), and the 2018 Lake County LHMP will be analyzed to ensure consistency with existing programs. This step will be accomplished during HMPC Meeting #2.

Planning Step 7: Review Possible Activities

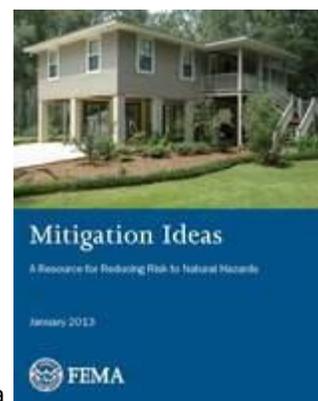
Wood will work with the HMPC members to develop mitigation actions. The new actions will be developed from reviewing the validity and status of other planning actions (e.g., 2018 Lake County LHMP) and by utilizing the Risk Assessment. At HMPC Meeting #3, Wood will assist the HMPC in drafting potential mitigation actions to reduce the effects of priority hazards and to meet the new goals and objectives. In developing mitigation alternatives to address the priority hazards within the planning area, the team will adhere to the model of mitigation activities promoted by DMA, FEMA’s CRS, and the FMA program, which categorizes mitigation measures into the following six categories:

- Preventative Measures;
- Property Protection;
- Emergency Services Measures;
- Structural Projects;
- Natural Resource Protection; and
- Public Information Programs.

Wood will then provide the HMPC with a set of criteria and review their potential for selecting and prioritizing mitigation measures. FEMA recommends the STAPLE/E approach detailed below:

- **S**ocial acceptability;
- **T**echnical feasibility;
- **A**ministrative feasibility;
- **P**olitical acceptability;
- **L**egality;
- **E**conomic feasibility (Availability of funding and cost effectiveness); and
- **E**nvironmentally sound.

The criteria will be applied to select and prioritize mitigation activities that will reduce the vulnerability to the destructive consequences of hazards within the planning area and to promote efficient recovery and reconstruction when disasters do occur. In HMPC Meeting #3, each recommended action will have a



responsible party identified and will include a description of the risk reduction objectives addressed, the alternate measures considered but not selected, an approximate benefit/cost estimate, and a description of possible funding sources. As mitigation alternatives are finalized by the responsible parties, timelines for project completion, and descriptions of those entities responsible for project implementation will be specified. Wood will also rely on other planning documents and tools, such as FEMA's 2013 Mitigation Ideas. Additionally, our staff will work with the HMPC to develop an implementation plan with priorities, that includes identification and analysis of possible grant and funding opportunities. A special emphasis will be placed on the identification and scoping of projects that will be likely candidates for FEMA HMGP funding. Both Ms. Juliana Prosperi and Mr. Jeff Brislawn will attend HMPC Meeting #3.

Deliverables:

- HMPC Meeting #3 (Working Group Meeting)
- Incorporate research and public input
- Prepare/Finalize Plan Goals and Objectives
- Development of mitigation alternatives based upon the identified risks, vulnerabilities, existing capabilities and planning goals
- Presentation of criteria sets to use in developing a final list of agreed upon selected, prioritized, mitigation alternatives for inclusion in the Plan
- Completion of Mitigation Recommendation Forms by the HMPC

Planning Step 8: Draft the Action Plan

Based on information collected during each of the tasks above, Wood will prepare the first draft of the LHMP. This LHMP will be compliant with the DMA 2000 and Cal OES requirements. Once complete, the first draft will be provided to the District and the HMPC members for review and comment via a SharePoint, Google Drive, or Dropbox site. Wood will solicit comments from District staff and the HMPC members and incorporate the comments into a second draft LHMP. This second draft, also transferred via the preferred online file sharing platform, will be used by the District for the public workshop. Once the second draft LHMP is complete, the District will circulate the Draft LHMP for public review. As outlined in Phase 1, Planning Step 2, Ms. Prosperi will attend the Public Workshop at the end of the public review period (i.e. May 21, 2019).

Deliverables:

- Develop 1st Draft LHMP for HMPC review
- Develop 2nd Draft LHMP for Public Review

Phase 4: Plan Submittal to Agencies and Board of Directors Adoption

Planning Step 9: Plan Submittal and Adoption

Based on feedback from the public workshop, Wood will develop a final draft in digital and hard copy to submit to Cal OES and FEMA Region IX for preliminary review and approval. This submittal will include a completed FEMA Plan Review Crosswalk that details how the plan meets the requirements of DMA 2000. Wood's proposed approach suggests that the District request this preliminary review and interim approval from the State and FEMA prior to formal board adoption. Wood has used the preliminary review approach with all its plans in the past, as recommended in the latest DMA planning guidance, which helps to save governing bodies from having to adopt the plan twice if changes are requested. Based on this review,



Wood will address all comments and requested changes and revisions to the plan by Cal OES and FEMA and will provide a master electronic and hard copy of the plan to the District to assist in adoption of the plan by the District's Board of Directors. Wood will also use the FEMA Region IX Review Tool prior to plan submittal and adoption.

This task assumes two color hard copies of the LHMP will be provided by Wood: one (1) hard copy to be submitted to Cal OES/FEMA and one (1) hard copy to be provided to District. Wood will also deliver the final plan document electronically to the District in both Word and PDF formats.

Deliverables:

- Incorporate public comments into Plan, and develop Final Draft LHMP
- Complete FEMA Plan Review Crosswalk for submission with the LHMP
- Complete FEMA Region IX Review Tool
- Submit LHMP for review and approval by Cal OES and FEMA Region IX
- Deliver Final LHMP in two (2) hard and one (1) electronic formats to District

Planning Step 10: Implement, Evaluate, and Revise the Plan

In accordance with the requirements for DMA plans, Wood will develop a method and schedule for monitoring and evaluating the LHMP. The plan maintenance requirements will include the following:

- Method and schedule of monitoring and evaluating the plan, which includes criteria used, responsible office, and process for formal five-year update
- Process by which the plan will be incorporated into existing planning mechanisms and requirements
- Schedule with procedures for ensuring the plan's implementation and update within five years
- Discussion of how the District will continue to involve the public in the plan maintenance and update process

These procedures, which include monitoring, evaluating, and updating the plan within a five-year cycle and incorporating continued public and stakeholder involvement throughout the plan maintenance process, will be modified as needed to improve the process for the next update cycle. The plan implementation section will identify ways to incorporate mitigation strategies into existing planning practices, policies, and programs to institutionalize hazard mitigation. This process will be developed and incorporated into the development of the draft and final LHMP documents. The District is ultimately responsible for plan implementation as well as for monitoring, evaluating, and updating the plan in accordance with the process outlined in the LHMP.

Deliverable:

- Draft of implementation, evaluation, and monitoring process

Phase 5: Meeting Attendance

Wood will attend internal meetings with District staff, including three Board of Director meetings. During Board of Director meetings, Ms. Juliana Prosperi will be available to make a presentation to the Board of Directors on the status of the plan (assumed during LHMP development, LHMP public review, and adoption of Final LHMP). We have also included time to participate in four teleconference calls to discuss deliverables and comments on the Draft LHMP. Our Project Manager, Ms. Juliana Prosperi will attend the three HMPC meetings and public workshop (included in previous tasks) in-person as part of this task. Mr. Jeff Brislaw will attend each meeting via teleconference, and two of the HMPC meetings in person. Each



on-site meeting will include preparation and attendance time, and completion of meeting minutes.

Deliverables:

- Project Kick-Off Meeting (via teleconference)
- Four (4) Teleconference Calls
- Three (3) Board of Director Meetings

Schedule

Wood is ready to begin work upon execution of a contract with the District. It is anticipated that the LHMP project will start in late November 2018 with a plan submittal to Cal OES/FEMA approximately six months later in May 2019. As outlined in the RFP, Wood recognizes the work deliverables will take at least six months to complete. Specific project milestones will be developed upon contract award (as part of Phase 1 and Planning Step 1) and the two additional planning tasks/phases to accommodate Board of Directors meeting attendance. This schedule is flexible and can be modified based on the needs of the District, and we recognize that minor adjustments may be possible, but that it is the District’s goal that the timelines are met, so that future mitigation projects are not delayed.

Task	Anticipated Date
Notice to Proceed	November 20, 2018
Project Kick-off Meeting	November 21, 2018
Submit HMPC Invite List	November 28, 2018
HMPC Meeting #1	December 6, 2018
Coordinate with District to Launch LHMP Website	December 13, 2018
Board of Directors Meeting	January 15, 2019
Utilize GIS to assess hazards	January 17, 2019
Draft Hazard Identification and Risk Assessment	January 31, 2019
HMPC Meeting #2	February 12, 2019
Board of Directors Meeting	February 12, 2019
HMPC Meeting #3	March 7, 2019
Finalize Goals and Objectives	March 14, 2019
Compile Mitigation Actions Worksheets	March 14, 2019
Submit 1 st Administrative Draft LHMP	March 26, 2019
District provides Consolidated Staff Comments on 1 st Administrative Draft LHMP	April 9, 2019
Submit 2 nd Administrative Draft LHMP	April 18, 2019
Circulate Public Review Draft LHMP	April 23, 2019
Public Workshop	May 21, 2019
Public Review Ends	May 22, 2019
Complete FEMA Region IX Review Tool	May 21, 2019
Submit LHMP to Cal OES for Review	May 22, 2019
Submit to FEMA for Review	TBD
Board of Director’s Meeting	October 15, 2019

*Board of Directors Meetings are held on the third Tuesday of each month at 7:00 p.m.



5. Cost Estimate

Wood will perform the proposed Scope of Services described above for a total fixed-fee of **\$54,278**. This amount includes all professional services and related direct and overhead expenses.

Wood's proposed approach to project management and the preparation and production of the LHMP will ensure timely completion of tasks and delivery of high-quality work products. Our approach involves close coordination throughout the process with District staff to ensure the preparation of a thorough LHMP with an appropriately detailed hazard assessment and careful development of mitigation projects. We track project phases, budget, and deliverables on a weekly basis using hands-on participation and oversight by our project manager. We also practice strict management controls by staff assignments, task management, scheduling, cost control and tracking, and ongoing client communication. Our team employees Microsoft Project® and other schedule tools (i.e., Management Portal, Deltek) to ensure that complex tasks are completed according to expedited schedule.

Our success tracking and maintaining a tight timeline, while also controlling costs was achieved during the recent CCWD LHMP Update. The LHMP was drafted and submitted to Cal OES for review in less than six months. The CCWD had several HMPG grant applications submitted for FEMA review, and eligibility was contingent upon the timely update of the CCWD LHMP. Our project manager was involved in the day-to-day project activities of all analysis, review, and document production. She also ensured all tasks were assigned to staff qualified to carry them out effectively and efficiently. Our client references can attest to our ability to meet project deliverable deadlines and track and control costs.

Assumptions

Wood has included the following assumptions for this proposal:

- Wood will attend seven on-site meetings at the District's offices in Hidden Valley Lake that will include a total of nine trips by two Wood staff (seven trips by Ms. Juliana Prosperi from our Rancho Cordova office and two trips by Mr. Jeff Brislaw from our Boulder, CO office for two of the three HMPC meetings). In addition to the three (3) HMPC meetings, Ms. Prosperi will attend one (1) public workshop, and three (3) Board of Director's meetings.
- Wood assumes we will participate in the initial project kick-off meeting via teleconference.
- Wood will help facilitate the public workshop in May (during public review of Draft LHMP). Our team will work with the District to provide outreach content throughout the LHMP development process, including reviewing content to post on the District's website and social media platforms.
- Wood will produce all GIS maps, figures, and graphs for the LHMP, but assumes the District will provide all GIS base layers and critical facility data layers (e.g., parcel layers, etc.), as well as any supporting Lake County data used in the development of the 2018 Lake County LHMP.
- Wood will mail one (1) hard copy to Cal OES/FEMA and one (1) hard copy will be provided to the District. Wood will electronically deliver the Final LHMP to the District in Word and PDF formats.
- Wood will prepare a meeting agenda, sign-in sheet, PowerPoint presentation and slideshow handouts, worksheets, and a meeting summary for the project kick-off meeting, HMPC meetings, and public workshop. Our staff will also provide flip-charts and other supplies, as needed.
- Wood assumes the District will provide one consolidated set of comments from District departments and the HMPC on the 1st Draft LHMP.



Wood Environment & Infrastructure Solutions, Inc.															
Hidden Valley Lake Community Services District LHMP: Cost Estimate															
		Rate	Unit	Task 1: Organize, Coordinate, and Initiate Outreach Development		Task 2: Identify Hazards and Assess Risks		Task 3: Prepare Local Hazard Mitigation Plan		Task 4: Plan Submittal to Agencies and Board of Directors Adoption		Task 5: Meeting Attendance		Summary	
LABOR CATEGORIES	PERSONNEL			Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost
Senior Associate II	Jeff Brislawn, CFM	\$ 175.00	HR	4	\$700.00	16	\$2,800.00	16	\$2,800.00	6	\$1,050.00	5	\$875.00	47	\$8,225.00
Senior 2 II	Juliana Prospero, AICP	\$ 132.00	HR	24	\$3,168.00	32	\$4,224.00	32	\$4,224.00	24	\$3,168.00	24	\$3,168.00	136	\$17,952.00
Senior 1 III	Kyle Karsjen	\$ 120.00	HR	2	\$240.00	8	\$960.00	2	\$240.00	0	\$0.00	0	\$0.00	12	\$1,440.00
Technical Professional 3 III	Annie Berlingheiri	\$ 100.00	HR	12	\$1,200.00	50	\$5,000.00	4	\$400.00	4	\$400.00	0	\$0.00	70	\$7,000.00
Technical Professional 2 II	Amy Carr	\$ 80.00	HR	4	\$320.00	50	\$4,000.00	24	\$1,920.00	16	\$1,280.00	0	\$0.00	94	\$7,520.00
Technical Professional 2 II	Marta Blanco Castano	\$ 80.00	HR	12	\$960.00	50	\$4,000.00	12	\$960.00	8	\$640.00	4	\$320.00	86	\$6,880.00
Administrative II	Ashley Shivley	\$ 70.00	HR	2	\$140.00	2	\$140.00	4	\$280.00	2	\$140.00	2	\$140.00	12	\$840.00
Labor Subtotal				60	\$6,728.00	208	\$21,124.00	94	\$10,824.00	60	\$6,678.00	35	\$4,503.00	457	\$49,857.00
Misc Expenses		0.00%			\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
OTHER DIRECT COSTS		Rate	Unit	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost
Local Mileage		0.55	mile	100	\$54.50	400	\$218.00	400	\$218.00	0	\$0.00	0	\$0.00	900	\$490.50
Vehicle Rental		\$ 60.00	day	0	\$0.00	1	\$60.00	1	\$60.00	0	\$0.00	0	\$0.00	2	\$120.00
Airport Parking		\$ -	day	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
Rental Car Gas		\$ 3.50	gallon	0	\$0.00	20	\$70.00	20	\$70.00	0	\$0.00	0	\$0.00	40	\$140.00
Parking/Tolls		\$ 7.00	day	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
Per Diem - Lodging (city)		\$ 140.00	day	1	\$140.00	3	\$420.00	2	\$280.00	1	\$140.00	3	\$420.00	10	\$1,400.00
Per Diem - Meals (city)		\$ 70.00	day	1	\$70.00	3	\$210.00	2	\$140.00	1	\$70.00	3	\$210.00	10	\$700.00
Airfare (from Denver to Sacramento)		\$ 400.00	trip	0	\$0.00	1	\$400.00	1	\$400.00	0	\$0.00	0	\$0.00	2	\$800.00
Reproduction (black & white)		\$ 0.10	page	50	\$5.00	500	\$50.00	500	\$50.00	500	\$50.00	50	\$5.00	1,600	\$160.00
Reproduction (color)		\$ 0.40	page	50	\$20.00	100	\$40.00	100	\$40.00	100	\$40.00	50	\$20.00	400	\$160.00
Other Reproduction (e.g. color, binding, tabs etc)		\$ 10.00	each	2	\$20.00	2	\$20.00	5	\$50.00	5	\$50.00	2	\$20.00	16	\$160.00
CD ROM copies		\$ 5.00	each	0	\$0.00	0	\$0.00	2	\$10.00	2	\$10.00	0	\$0.00	4	\$20.00
Color Print Film/ Development or Digital Camera		\$ -	each	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
Large Package Shipping		\$ -	pkg	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
Overnight Shipping		\$ 15.00	pkg	0	\$0.00	0	\$0.00	2	\$30.00	2	\$30.00	0	\$0.00	4	\$60.00
Other ODCs															
Subcontractor			job	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
ODC Subtotal					\$309.50		\$1,488.00		\$1,348.00		\$390.00		\$675.00		\$4,210.50
ODC Markup @ 5%		5.00%			\$15.48		\$74.40		\$67.40		\$19.50		\$33.75		\$210.53
ODC Total					\$324.98		\$1,562.40		\$1,415.40		\$409.50		\$708.75		\$4,421.03
LABOR AND ODCs TOTAL					\$7,052.98		\$22,686.40		\$12,239.40		\$7,087.50		\$5,211.75		\$54,278.03



wood.

Resumes

Resumes



Summary

Years of Experience

25

Education

MS/Geology, Engineering/Environmental Specialization/Colorado State University/1992

BS/Geology/Ohio University/Athens, OH/1987

Registrations / Certifications/ Licenses

- Certified Floodplain Manager US-06-02156/expires 1-31-19
- Earthquake Engineering Research Institute
- Association of State Floodplain Managers
- Natural Hazards Mitigation Association
- Colorado Association of Stormwater and Floodplain Managers
- Colorado Emergency Management Association
- Rocky Mountain Hazus User Group – Co chair
- Geological Society of America

drought, wildfire, subsidence and tree mortality hazards, and writing the document.

City of Tracy Local Hazard Mitigation Plan Update, CA (8/2018—present), QA/QC.

Providing QA/QC review for the development of a new Local Hazard Mitigation Plan (LHMP) for the City. Providing assistance with meeting facilitation and oversight to ensure compliance with the Disaster Mitigation Act of 2000.

Calaveras County Water District Local Hazard Mitigation Plan Update, CA (12/2017—5/2018), QA/QC.

Provided QA/QC review for an update to the Calaveras County Water District's (CCWD) Local Hazard Mitigation Plan (LHMP) which included plan review and assistance with meeting facilitation and project oversight to ensure compliance with the Disaster Mitigation Act of 2000.

Multi-Jurisdictional Hazard Mitigation Plan Update, Kern County, CA, 9/2011 – 7/2013, Project Manager.

Responsible for the five-year update of a multi-jurisdictional Disaster Mitigation Act (DMA) and Community Rating System (CRS) compliant mitigation plan in 2012. This included facilitating the planning team meetings, using GIS for the plan's risk assessment, modeling multi-hazard risk, and writing the document.

Professional Summary

Mr. Brislawn is the Hazard Mitigation Lead / Sr. Associate in Wood's Hazard Mitigation and Emergency Management Program and has over twenty five years of experience in Emergency Management, GIS and mitigation planning work for state and federal governments, as well as technical assistance to local governments. Mr. Brislawn has been the project manager on more than 20 Disaster Mitigation Act (DMA) compliant local and state hazard mitigation plans, as well as provided GIS-based risk analysis in support of many others. Mr. Brislawn is also experienced in leading drought, dam failure evacuation, climate adaptation, and energy assurance planning efforts. Mr. Brislawn is experienced with Federal Emergency Management Agency (FEMA) mitigation grant programs and has assisted local and state governments with the development of technically feasible, cost effective and environmentally sound mitigation project applications. Mr. Brislawn is an experienced user of FEMA's benefit cost analysis software modules and Hazus, FEMA's multi-hazard loss estimation software. Mr. Brislawn has provided GIS and natural hazards mitigation technical assistance to the FEMA Mitigation Division during times of disaster, travelled to disaster areas, written reports, trained staff, and been involved in community outreach. Mr. Brislawn's academic experience in engineering and environmental geology provides a strong earth sciences background to his work in natural hazards risk assessments. Mr. Brislawn is a Certified Floodplain Manager and an Wood Certified Project Manager

Representative Projects

Multi-Jurisdictional Hazard Mitigation Plan Update, Fresno County, CA (7/2017 – 9/2018), Project Manager.

Responsible for the five-year update of a multi-jurisdictional Disaster Mitigation Act (DMA) and Community Rating System (CRS) compliant mitigation plan in 2017-2018. This included facilitating the planning team meetings, modeling multi-hazard risk with an emphasis on



Jeff Brislawn, CFM
Hazard Mitigation Lead / Senior Associate



Hazard Mitigation Plan Development, Kern County, CA, 12/2004 – 12/2005, Project Manager.

Responsible for the development of a multi-jurisdictional Disaster Mitigation Act (DMA) and Community Rating System (CRS) compliant mitigation plan. This included facilitating the planning team meetings, using GIS for the plan's risk assessment, and writing the document.

Comprehensive Flood Management Plan, City of Sacramento, California, 6/2014 – 6/2015, QA/QC.

Provided project and plan review and document finalization of a Comprehensive Flood Management Plan for the City that incorporated National Flood Insurance Program's (NFIP) CRS elements, emergency management, and flood mitigation.

Hazard Mitigation Plan Development, Fresno County, CA, 2008 – 2009, QA/QC.

QA/QC on GIS used to develop maps and model hazard impacts to support a multi-hazard mitigation planning effort in Fresno County.

Multi-Hazard Mitigation Plan Development, City and County of Sacramento, CA, 6/2010 – 10/2012, GIS and CRS Lead.

Used GIS to support the hazard identification and risk assessment portion of the Sacramento multi-hazard mitigation plan. Integrated the National Flood Insurance Program's (NFIP) CRS requirements with the DMA for the City of Sacramento.

Hazard Mitigation Plan Update, City of Westminster, CO (8/2017 – 8/2018), Project Manager

Responsible for the 2017-2018 update of a multi-hazard Disaster Mitigation Act (DMA) and CRS compliant hazard mitigation plan for the City. Incorporated City-developed Hazard Identification and Risk Assessment with an emphasis on drought and dam failure hazards. Facilitated project meetings.

Hazard Mitigation Plan Development, Amador County, CA, 3/2005 – 3/2006.

Used GIS to develop maps and model hazard impacts to support a multi-hazard mitigation planning effort in Amador County.

Hazard Mitigation Plan Development, Placer County, CA (4/2009 – 5/2010)

QA/QC Review and BCA Workshop Instructor. QA/QC Review of document and lead facilitator of a workshop for planning team members on how to use FEMA's Benefit Cost Analysis tool to leverage FEMA grants to fund priority projects in the plan.

Hazard Mitigation Plan Development, Placer County, CA, 4/2004 – 5/2004.

Used GIS to develop maps and model hazard impacts to support multi-hazard mitigation planning efforts in these counties.

Cherry Creek Dam Failure Evacuation Plan, Denver CO. 1/-11/2017 Project Manager.

Lead the development of a comprehensive regional evacuation plan for a high consequence dam in the Denver Metropolitan Area. Coordinated a steering committee of emergency managers from 3 counties and the City of Aurora, as well as a multi-agency Evacuation Planning Team/stakeholder group that included the Corps of Engineers and local response personnel. Developed functional annexes for transportation, communications and warning, access and functional needs, animal protection, and reunification/re-entry using input from facilitated meetings with work groups. Developed maps and appendices displaying evacuation zones, routes, and impacted critical facilities and populations.

Lake Isabella Dam Failure Evacuation Plan, Bakersfield, CA, 2/2008 – 4/2012, GIS Lead.

GIS lead on the analysis of dam failure impacts from Lake Isabella on the metropolitan Bakersfield, California area to support the creation of an evacuation plan. Involved analyzing the outputs of multiple dam failure scenarios impacts on population, buildings and road infrastructure.

Levee Repair Funding Assistance, Town of Greybull, WY, 5/2014 – 9/2015, Task Manager.



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Hazard Mitigation Lead / Senior Associate



Provided assistance to the Town as part of team providing levee certification services. Researched and recommended local, state, and federal funding sources for levee repair and improvements. Suggested options for meeting local match requirements that included in-kind services, cash, or other grants or loans depending on the funding source.

Town of Greybull Benefit Cost Analysis (BCA) for Levee Grant Application, Big Horn, WY, Task Manager.

Directed analysis of critical facilities at risk of flooding to the 10-year, 25-year, 50-year, 100-year, and 500-year events to support an application for levee improvements under the FEMA Hazard Mitigation Grant Program. Used FEMA's BCA Tool to produce results for the Town's grant application within a three week timeframe.

FEMA Hazard Mitigation Grants Technical Support, Colorado Division of Homeland Security and Emergency Management, CO, 6/2014 – 6/2015, Project Manager.

Responsible for coordination of a large team during the development of 100 FEMA HMGP applications, primarily within a two month period. Directed project leads to provide assistance to more than 40 communities in the development of successful acquisition, flood control, wildfire, and other mitigation projects, including scope of work, budget, and NEPA compliance aspects. Incorporated CDBG-DR funding as match where applicable. Also provided technical assistance with Benefit Cost Analysis, project scoping and eGrants for the FY 2015 PDM/FMA grant cycle.

CRS Technical Assistance, City of Westminster, Colorado, 8/2015 – 8/2016, Project Manager.

The project involved working with the city on the development of new documentation to support the 2013 CRS Coordinator Manual requirements, verifying the City's floodplain management efforts to maintain and potentially enhance their CRS rating.

Hazard Mitigation Plan Update, City and County of Denver, CO, 1/ – 9/2016, Project Manager.

Responsible for the 2016 update of a Disaster Mitigation Act (DMA) and compliant mitigation plan update for Denver. The project built upon on the City's initial planning and hazards analysis efforts. Including facilitating meetings with a city mitigation planning committee and linking mitigation actions in related planning documents such as stormwater master plans. Also aligned with CRS floodplain management planning requirements.

Hazard Mitigation Plan Update, Jefferson County, CO, 7/2015 – 6/2016, Project Manager.

Responsible for the 2015 update of a multi-jurisdictional Disaster Mitigation Act (DMA) and Community Rating System (CRS) compliant mitigation plan update for Colorado's most populated County with a significant wildland urban interface and flood risk. Facilitated meetings, directed update to hazard risk assessment and coordinated with project team and County.

Hazard Mitigation Plan Development Santa Fe County, New Mexico, 10/2015 – 10/2016, Project Manager

Responsible for the development of a county hazard mitigation plan. The County plan is a single jurisdictional plan analyzing risk and strategies to mitigate several hazards with an emphasis on dam failure, wildfire, flood, and drought. Integrated existing countywide Community Wildfire Protection Plan during the effort. Facilitated planning team meetings and regional public meetings.

Hazard Mitigation Plan Development Taos County, New Mexico, 9/2016 – ongoing, Project Manager.

Responsible for the development of a county hazard mitigation plan in Northern New Mexico at risk to dam failure, wildfire, flood, drought and severe weather. Developed GIS-based risk assessment to differentiate risk across 5 participating jurisdictions. Facilitated planning team meetings and a public meeting; included development of online public survey for additional public input.

Hazard Mitigation Plan Development Los Alamos County, NM, 8/2013 – 2/2016, Project Manager.

Responsible for the update of a hazard mitigation plan in one of the most hazard prone regions of New Mexico. The County plan is a single jurisdictional plan that includes the unincorporated townsites of Los Alamos and White Rock.



The 2013-2015 plan update focused on analyzing risk and developing updated strategies to mitigate several hazards including wildfire, flood, drought, earthquake, volcano, dam failure, and severe weather. The update including a process of defining critical facilities and developing a comprehensive, GIS based inventory. Integrated existing countywide Community Wildfire Protection Plan during the effort. Assisted planning team with the update of hazard mitigation strategies and implementation process.

Hazard Mitigation Plan Development, Douglas County, CO, 6/2014 – 8/2015, Project Manager.

Responsible for the development of a multi-jurisdictional Disaster Mitigation Act (DMA) and Community Rating System (CRS) compliant mitigation plan update. Included transitioning from a regional plan to a stand-alone plan for a high growth county in Colorado's Front Range. Advised on the formation of a steering committee to maximize CRS credits. The project included an enhanced GIS-based risk analysis for flood hazards and the integration of information from community wildfire protection plans.

Hazard Mitigation Plan Update, Grand County, Colorado, 2013, Project Manager.

Responsible for the update of a hazard mitigation plan update for a mountainous community with a recreation based economy. The plan assessed impacts natural and manmade hazards, with particular emphasis on wildfire and landslide hazards. Integrated existing Community Wildfire Protection Plans and developed a flood vulnerability analysis based on DFIRM. Included involving municipalities, fire protection districts and water districts such as Northern Water and Denver Water in the planning effort.

Hazard Mitigation Plan Updates, City of Boulder, CO, 1/2012 – 1/2013 and 9/2017-6/2018, Project Manager

Responsible for the 2012 and 2018 updates of a multi-hazard Disaster Mitigation Act (DMA) and CRS plan for the City, with an emphasis on flood, wildfire and drought hazards. Facilitated project meetings and a public workshop following a process to maximize credits under updated CRS planning guidance. Included the development of a Program for Public Information consistent with the current CRS guidance. Directed use of GIS to enhance the flood hazard vulnerability assessment to detail potential loss by stream group.

Boulder Climate Preparedness Plan 2011, Boulder County Planning Department, Colorado, 4/2011 – 12/2012, Project Manager.

Served as the AMEC project manager on a consultant team responsible for analyzing the potential impacts of climate change on four sectors of interest to Boulder County and the City of Boulder. Lead investigator on emergency management/floodplain management and public health sectors. Reviewed existing adaptive capacity to climate related hazards including wildfires and floods and recommended potential adaptation strategies to the Climate Adaptation Planning Committee.

Hazard Mitigation Plan Development, Archuleta County, CO, 6/2010 – 2/2012, Project Manager.

Responsible for the development of a multi-jurisdictional Disaster Mitigation Act (DMA) plan, with an emphasis on wildfire, winter storm and flood hazards. Integrated existing countywide Community Wildfire Protection Plan and flood hazard analysis using DFIRM.

Tribal Hazard Mitigation Plan Development, Ute Mountain Ute Tribe, CO, 10/2010 – 2/2012, Project Manager.

Responsible for the development of a multi-hazard Disaster Mitigation Act (DMA) compliant with tribal planning guidance, with an emphasis on wildfire, winter storm and flood hazards. Integrated existing countywide Community Wildfire Protection Plan and Hazus flood hazard analysis. Included an identification and analysis of risk to critical facilities and tribal cultural assets.

Hazard Mitigation Plan Update, Gunnison County, CO, 2/2012 – 7/2013, Project Manager.

Responsible for the update of a multi-jurisdictional Disaster Mitigation Act (DMA), plan for this large county in Colorado's Rocky Mountains. The plan assessed impacts from avalanche, wildfire, flood, and other hazards, with particular emphasis on flood and geologic hazards. Integrated existing countywide Community Wildfire Protection



Plan and preliminary DFIRM during the effort. Assisted planning team with the development of hazard mitigation strategies.

Hazard Mitigation Plan Update, Summit County, CO, 1/2013 – 7/2014, Project Manager.

Responsible for the update of a hazard mitigation plan update for a mountainous community with a recreation based economy. The plan assessed impacts from avalanche, wildfire, flood and other hazards, with particular emphasis on wildfire and landslide hazards. Integrated existing countywide Community Wildfire Protection Plan and performed a flood vulnerability analysis based on DFIRM. Included involving fire protection districts and water districts such as Denver Water in the planning effort.

Community Wildfire Protection Plans – Ouray, Montrose, Delta and Gunnison Counties, Colorado, 8/2010 – 11/2011, Project Manager. Responsible for the development of four county-wide community wildfire protection plans on Colorado's western slope in partnership with another consulting firm. Responsible for stakeholder and public meeting facilitation, community and public outreach, GIS and mapping, and document development. The four plans were prepared simultaneously through collaboration with the West Region Wildfire Council.

Hazard Mitigation Plan Development, Jefferson County, CO, 1/2009 – 8/2012, Project Manager.

Responsible for the development of a multi-jurisdictional Disaster Mitigation Act (DMA) and Community Rating System (CRS) compliant mitigation plan update. Included transitioning from a regional plan to a stand-alone plan for the most populated county in Colorado. The project included a Hazus level II GIS-based risk analysis for flood hazards and the integration of information from local level community wildfire protection plans.

Region 6: Big Horn County, Hot Springs County, Park County, Washakie County, WY Hazard Mitigation Plan, WY 2016, Project Manager.

Project Manager. Responsible for the development of a multi-jurisdictional Disaster Mitigation Act (DMA) for a 4 county region in northwestern Wyoming including nine municipalities, the first of its kind in the State. The project included a risk analysis for the region and counties and an online survey to gather public input.

Region 4: Lincoln County, Sweetwater County, Uinta County, WY Hazard Mitigation Plan, WY, 2016, QA/QC.

Responsible for QA/QC review of the development of a multi-jurisdictional Disaster Mitigation Act (DMA) for a 3 county region in southwestern Wyoming.

Hazard Mitigation Plan Update, Laramie County, WY, 2/2012 – 2/2013, Project Manager.

Responsible for the update of a multi-jurisdictional Disaster Mitigation Act (DMA) plan for Wyoming's most populous County, including merging of the City of Cheyenne's HMP. Planning emphasis on flood, wildfire, and severe weather hazards. Utilized effective DFIRM within GIS to enhance the flood hazard vulnerability assessment.

Hazard Mitigation Plan Update, Washakie County, WY, 3/2011 – 2/2012, Project Manager.

Responsible for the update of a multi-jurisdictional Disaster Mitigation Act (DMA) plan for a rural Wyoming County, with an emphasis on flood and wildfire hazards. Utilized effective DFIRM within GIS to enhance the flood hazard vulnerability assessment.

Drought Management Plan 2018, Town of Castle Rock, CO 11/2017 – 6/2018, Project Manager.

Led the development of a local drought management plan that will be used to assist Castle Rock, Colorado, a growing community of approximately 57,000, to mitigate and manage drought. Led planning workshops and plan development.

South Drought Mitigation Plan 2015, South Dakota Office of Emergency Management, 6/2014 – 12/2015, Project Manager.

Jeff Brislawn, CFM
Hazard Mitigation Lead / Senior Associate



Responsible for the development of a Drought Mitigation Plan for the state. Facilitated multiple planning meetings with the state's Drought Task Force. Included development of a sector-based drought vulnerability annex, which formed the basis for the development of drought mitigation strategies.

Oklahoma Drought Challenge, Bureau of Reclamation and Oklahoma Water Resources Development Board, OK (7/2014 – 7/2015), Sr Advisor and Lead Facilitator.

Senior advisor in the development and design of innovative gaming forum used to foster stakeholder engagement with drought resilience and response planning. Facilitated design of simulated drought scenarios, tournament delivery and after-action report development.

Colorado Drought Mitigation and Response Plan Update 2013, Colorado Water Conservation Board, 1/2013 – 5/2014, Project Manager.

Responsible for the update to Colorado's Drought Mitigation and Response Plan, compliant with the Disaster Mitigation Act (DMA) of 2000 and aligned with modern emergency management standards. Facilitated multiple planning meetings and presentations and update of a drought vulnerability annex, including a survey of municipal and Industrial water users.

Colorado Drought Mitigation and Response Plan, Colorado Water Conservation Board, 10/2009 – 4/2012, Project Manager.

Responsible for the development of a major update to Colorado's Drought Mitigation and Response Plan, compliant with the Disaster Mitigation Act (DMA) of 2000 and aligned with modern emergency management standards. Facilitated multiple planning meetings and presentations. Included the development of a Local Drought Management Plan guidance document and web-based toolbox of drought information.

Colorado Drought Vulnerability Assessment, Colorado Water Conservation Board, CO, 12/2010 – 6/2014, Technical Advisor.

Provided technical guidance on a detailed multi-sector drought vulnerability assessment developed to comply with FEMA mitigation planning requirements.

Colorado Flood Mitigation Update, Colorado Water Conservation Board, CO, 7/2013 – 5/2014, Project Manager.

Responsible for the update to Colorado's Flood Mitigation Plan, compliant with the Disaster Mitigation Act (DMA) of 2000. Facilitated multiple planning meetings and presentations and integrated an existing Hazus Level 1 flood analysis provided by FEMA.

Climate Change Impact Analysis, City of Waveland, MS, 8/2011 – 8/2013, Technical Lead.

Responsible for the development of a climate change impact analysis as part of a NOAA Sea Grant-funded study for this coastal community in conjunction with a hazard mitigation plan update. The project included a literature review and GIS-based risk analysis for exacerbated flood and hurricane hazards, as well as an analysis of the risks to the community from sea level rise resulting from climate change.

Hazard Mitigation Plan Update, KS, 7/2007 – 12/2007, Project Manager.

Responsible for the 2007 update to the state of Kansas multi-hazard mitigation plan, in accordance with the requirements of the Disaster Mitigation Act (DMA). Update included converting the plan from a Mitigation 2020 format to a more consistent with other state plans. Updated risk modeling methods were used to quantify relative vulnerability to floods, tornadoes, windstorms, hail, and winter storms on a county by county basis across the state.

Missouri Hazard Mitigation Plan Update 2010, State Emergency Management Agency, MO, 8/2009 – 5/2012. QA/QC Review.

Provided QA/QC review and technical guidance on the Wood's project team during the 2010 update of Missouri's enhanced Hazard Mitigation Plan. Provided technical guidance to the integration of DFIRM depth grids into the state's Hazus based flood hazard risk assessment.



South Dakota Hazard Mitigation Plan Update 2013, South Dakota Emergency Management, SD, 10/2012 – 3/2014, Project Manager/Technical Lead.

Developed update to the state plan's risk assessment during the 2013 three year update cycle as a sub consultant. Updated risk modeling methods were used to quantify relative vulnerability to floods, tornadoes, windstorms, wildfires and winter storms on a county by county basis across the state. Included integration of Hazus Average Annualized Loss flood risk information, new DFIRM, and levee hazards. Included the refinement of risk for Rural Electric Cooperatives statewide and incorporation of how climate change may change frequency and intensity of hazards.

South Dakota Hazard Mitigation Plan Update 2010, South Dakota Emergency Management, SD, 9/2009 – 6/2011, Project Manager/Technical Lead.

Developed update to the state plan's risk assessment during the 2010 update cycle as a sub consultant. Updated risk modeling methods were used to quantify relative vulnerability to floods, tornadoes, windstorms, wildfires and winter storms on a county by county basis across the state. Included integration of Hazus Level 1 flood risk information, and levee hazards. Included the identification of risk for Rural Electric Cooperatives statewide.

Hazard Mitigation Plan Update, City of Poquoson, VA, 11/2008 – 10/2009, Project Manager.

Responsible for the development of a multi-jurisdictional Disaster Mitigation Act (DMA) and Community Rating System (CRS) compliant mitigation plan for this coastal community. The project included a Hazus level II GIS-based risk analysis for flood and hurricane hazards, as well as an analysis of the risks to the community from sea level rise resulting from climate change.

County Mitigation Plans, Various in Kansas, 7/2007 – 12/2007, Technical Lead.

Focus on risk assessment, including overseeing the use of Hazus for flood modeling, and QA/QC reviewer for various local hazard mitigation plans in Kansas, including Allen, Harper, Harvey, Labette, Montgomery, Neosho, Osage, Reno, and Sumner Counties. Facilitated the completion of the Kiowa County Hazard Mitigation Plan, which included the Town of Greensburg that had been devastated by a tornado in 2008.

Hazard Mitigation Plan Update, Dane County, WI, 11/2008 – 10/2010, Project Manager.

Responsible for the update of a multi-jurisdictional Disaster Mitigation Act (DMA) plan. The update included integrating a separate Flood Mitigation Assistance (FMA) plan with the DMA plan, and followed Community Rating System (CRS) planning steps. The update also included additional jurisdictional, stakeholder, and public involvement.

Hazard Mitigation Plan Development, Boulder County, CO, 1/2008 – 1/2009, Project Manager.

Responsible for the development of a multi-jurisdictional Disaster Mitigation Act (DMA) and Community Rating System (CRS) compliant mitigation plan. Facilitated planning team meetings and document development. Parcel-based GIS risk analysis conducted for wildfire and flood hazards.

Hazard Mitigation Plan Development, Teller County, CO, 11/2007 – 7/2008, Project Manager.

Responsible for the development of a multi-jurisdictional Disaster Mitigation Act (DMA) plan, with an emphasis on wildfire, winter storm and flood hazards. Integrated existing countywide Community Wildfire Protection Plan during the effort.

Hazard Mitigation Plan Development, Ouray County, CO, 9/2007 – 2/2010, Project Manager.

Responsible for the development of a multi-jurisdictional Disaster Mitigation Act (DMA), plan. The plan assessed impacts from avalanche, wildfire, flood and other hazards, with particular emphasis on debris flow hazards. Integrated existing countywide Community Wildfire Protection Plan during the effort. Assisted planning team with the development of hazard mitigation strategies.

Hazard Mitigation Plan Development, City of Boulder, CO, 5/2005 – 4/2006, Technical Lead.

Focus on risk assessment, including the use of GIS to model hazard impacts to support a multi-hazard mitigation planning effort in the city, with an emphasis on flood hazard risk. Assisted with the final coordination and drafting of the plan and conducted public meetings.

Poquoson, Virginia, DMA Mitigation Plan, 2/2004 – 12/2004, Technical Lead.

Focus on risk assessment, including the use of Hazus Level II to model coastal flood and hurricane hazard impacts to support the update and enhancement of the city's multi-hazard mitigation plan.

Publications and presentations

"Dry Times: Learning from Drought and Hazards Early Warning Systems," Panel presenter on drought planning and preparedness in practice, 43rd Annual Natural Hazards Research and Applications Workshop July 2018, Broomfield, CO

"Evacuation Planning for Extreme Events: Failure of the Cherry Creek Dam" Association of State Floodplain Managers 2018 Annual Conference, Phoenix, AZ

"A Practical Approach for an Effective Hazard Mitigation Planning Process" Co presenter for workshop for Association of State Floodplain Managers Annual Conference 2017 Annual Conference, Kansas City, MO

"Sustainable Disaster Recovery Within a Dynamic Watershed; A Colorado Flooding Case Study" Association of State Floodplain Managers 2014 Annual Conference, Seattle, WA

'Surf's Up in Waveland MS: Assessing Climate Change Impacts Through Enhanced Mitigation Planning' Association of State Floodplain Managers 2013 Annual Conference, Hartford CT

"Drought Planning in Practice" American Planning Association Annual Conference 2013, Chicago, IL

"Estimating Flood Damage Impacts on Existing and Future Development Within the Poudre River Flood Floodplain in Fort Collins, Colorado," Jeff Brislawn, Colorado Association of Stormwater and Floodplain Manager's Annual Conference, Snowmass, CO. September, 2011.

"Community Level Drought Planning: Lessons Learned" National Integrated Drought Information System and National Drought Mitigation Center Engaging Preparedness Communities Workshop June 2011, Chicago, IL

"Emergency Management for Floodplain Managers," Jeff Brislawn, Colorado Association of Stormwater and Floodplain Manager's Annual Conference, Snowmass, CO. September, 2010.

"Hazard Mitigation Planning Workshop." Co- Presenter, Floodplain Management Association's (FMA) Fall Conference. San Jose, CA. September 8th, 2009.

"Urban Drainage And Flood Control District Preparedness Exercise 2009 – Dealing With A Flood In Morrison." Co presenter, Colorado Association of Stormwater and Floodplain Manager's Annual Conference, Crested Butte, CO. September, 2009.

"Methods to Conduct Statewide Flood Loss Vulnerability Assessments" Association of State Floodplain Managers Annual Conference. Reno, NV 2008.

"Updating Multi-Hazard Mitigation and CRS Floodplain Management Plans: Everything You Need to Know" (4-hour Workshop). Association of State Floodplain Managers Annual Conference. Co presenter, Oklahoma City, OK. May 2010.

Western Governor's Association State Drought Planning Meeting, March 2000, Albuquerque, New Mexico. Speaker.

"Public Outreach Opportunities for Geoscience Education and Hazard Mitigation During Disaster Recovery Operations: Experiences from the Northridge Earthquake"; Geological Society of America Annual Meeting, October 1994, Seattle, Washington.

FEMA Region VIII Other Assistance Conference, August 1994, Spearfish, South Dakota (Speaker).

Fifth U.S. National Conference on Earthquake Engineering, July 1994, Earthquake Engineering Research Institute, Chicago, IL (Speaker).



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- "Planning and Drought" American Planning Association Planning Advisory Service Report No 574 2013, Schwab; Contributing author.
- "The Colorado Drought Mitigation and Response Plan"; Boulas, L., Truby, J., 1981. Rev 1986 and 1990 by Truby, Boulas, Kistner, R. Revised 2001 by Brislawn, J.P., Gally, M., Boulas, L., Truby, J., Grier, T., White, P., Koleis, M.. Colorado Office of Emergency Management, Golden, CO.
- "Direct Measurement of Liquefaction Potential in Soils of Monterey County, California"; Charlie, W.A., Doehring, D.O., Brislawn, J.P., and Hassen, 1998. US Geological Survey Professional Paper 1551-B: "The Loma Prieta, California, Earthquake of October 17, 1989-Liquefaction." US Government Printing Office, Washington, D.C.
- "Mapping Colorado's Earthquake Hazard with Geographic Information Systems"; Brislawn, J.P., Mejia-Navarro, M., Oaks, S.D., and Koleis, M.J., 1993. Proceedings of the Fifth U.S. National Conference on Earthquake Engineering, Vol. II, Earthquake Engineering Research Institute, Oakland, CA.
- "Earthquakes and Related Hazards in Colorado"; Oaks, S.D., Brislawn, J.P., Mejia-Navarro, M., and Koleis, M.J., 1993. Map scale 1:1,000,000. Colorado Earthquake Hazard Reduction Program, Colorado State University, Fort Collins, CO.
- "Geographic Information Systems: A Workbook for Local Governments"; Brislawn, J.P., 1993. Colorado Earthquake Hazard Reduction Program, Colorado State University, Fort Collins, CO.
- "Loma Prieta Earthquake: Piezovane, SPT and CPT Evaluations of Liquefaction in Monterey County, California"; Charlie, W.A., Doehring, D.O., Brislawn, J.P., Hassen, H., Siller, T., 1993. Proceedings of the XIII International Conference on Soil Mechanics and Foundation Engineering, Special Volume on Earthquakes, New Delhi, India.
- "Liquefaction Evaluation with the CSU Piezovane"; Charlie, W.A., Doehring, D.O., Brislawn, J.P., Scott, C.E., Butler, L.W., 1993. Proceedings of the XIII International Conference on Soil Mechanics and Foundation Engineering, New Delhi, India.
- *Emergency Operations Plan Guidance Manual; Brislawn, J.P., 1993. Colorado Office of Emergency Management, Golden, CO.



Summary

Years of Experience

15

Education

Bachelor of Science, Community and Regional Planning/Iowa State University/2004

Technical / Trade Apprenticeship, Emergency Medical Technician/Des Moines Area Community College/2008

Core Skills

- Hazard Mitigation Planning
- Emergency Response Planning
- Strategic Planning
- Public/Private Sector Collaboration
- Infrastructure Protection Planning
- Asset Protection Planning
- Grant Writing and Management
- Project Management
- Program Management
- Planning Facilitation

Professional Summary

Mr. Karsjen is a Senior Emergency Management Specialist for Wood's Hazard Mitigation and Emergency Management Program. Kyle has over 15 years' experience in emergency management in both government and the private sector, including threat/hazard identification and risk assessment, capabilities assessment, hazard mitigation, emergency response planning, infrastructure and asset protection, strategic planning and program assessment. Mr. Karsjen has served as project manager on a variety of projects across the Midwest and Western regions of the United States, as well as providing support for projects across the country.

Throughout his career, Kyle has been responsible for the development of an assortment of plans and planning products, most of which have involved facilitating diverse groups of stakeholders toward the development and implementation of specific planning and project goals. Additionally, Kyle has offered guidance and technical assistance on hazard mitigation and emergency response plan development to counties and communities.

In addition to his planning and program experience, Kyle has held a variety of response and recovery roles in Iowa's State Emergency Operations Center for a number of federally declared disasters, including floods, blizzards, and the state's activities during the national Hurricane Katrina response. Kyle has local emergency response experience as a firefighter and emergency medical technician.

Representative Projects

State of Iowa, 11 County Hazard Mitigation Plan Updates, 2017, Project Manager.

Coordinating the development of 11 multi-jurisdictional hazard mitigation plans in Iowa, including Dallas, Davis, Dubuque, Emmet, Howard, Jackson, Kossuth, Story, Union, Wright, and Worth counties. Coordinated plan development, facilitated county planning processes, and developed hazard analyses and risk assessments on a variety of hazards.

Fresno County, CA Hazard Mitigation Plan 2018, Planner.

Assisted in the development of the hazard analysis and risk assessment, specifically assessing risks associated with hazardous materials in the County.

State of Wyoming, Region 2 Hazard Mitigation Plan 2018, Project Manager.

Working with three counties (Converse County, Natrona County, Niobrara County) in eastern Wyoming to develop a regional FEMA-approved hazard mitigation plan. Leading planning meetings, coordinating jurisdictional and regional planning activities, facilitating the development of regional and jurisdiction-specific mitigation plans, and finalizing the plan for FEMA review.

City and County of Denver, CO Cherry Creek Evacuation Plan, 2017, Planner.

Assisted in the development of an evacuation plan for the Cherry Creek Dam, working with City of Denver, Adams County, Arapahoe County and the City of Aurora. Facilitated workgroups to assess specific evacuation parameters for access and functional needs and pets and animals.



City of Boulder, CO Hazard Mitigation Plan Update, 2017, Planner.

Supported the development of the plan's hazard analysis and risk assessment.

State of Wyoming, Region 5 Hazard Mitigation Plan, 2017, Planner.

Supported the development of a multi-jurisdictional Disaster Mitigation Act (DMA) for a county region with two counties (Fremont County, Sublette County) and one tribe (Wind River Reservation) in west central Wyoming including twenty incorporated jurisdictions. Developed input for risk assessment related to wind, winter storm, extreme cold and other hazards.

State of Missouri Hazard Analysis and Risk Assessment, Missouri State Emergency Management Agency, MO 2017, Planner.

Responsible for developing specific chapters for hazards identified by the Planning Committee, including wildfire, civil disorder, terrorism, transportation incidents and special events. Each chapter included hazard analysis, historical analysis, impact identification and analysis of future vulnerability, and an EMAP-compliant consequence analysis.

State of Wyoming, Region 4 Hazard Mitigation Plan 2016, Project Manager.

Worked with the three counties in Region 4 (Lincoln County, Sweetwater County, Uinta County) to develop a regional FEMA-approved hazard mitigation plan. Lead planning meetings, coordinated planning activities, conducted risk assessment, facilitated the development of county-specific mitigation projects and developed the final plan. Hazards assessed included dam failure, other man-made incidents and natural hazards.

State of Wyoming, Region 6 Hazard Mitigation Plan, 2016, Planner.

Supported the development of a multi-jurisdictional Disaster Mitigation Act (DMA) for a four-county region (Big Horn County, Hot Springs County, Park County, Washakie County) in northwestern Wyoming including nine municipalities. Developed input for risk assessment related to wind, winter storm, extreme cold and other hazards.

Taos County, NM Hazard Mitigation Plan, 2016, Planner.

Worked with the county and jurisdictions to facilitate successful planning process and plan development, culminating in a compliant mitigation plan. Developed the hazard analysis for the county, including assessments and historical analysis of risk from tornadoes and high winds.

State of South Dakota, Hazard Analysis and Risk Assessment, South Dakota Office of Emergency Management, SD, 2016, Planner.

Responsible for developing specific chapters for natural and man-made hazards identified by the Planning Committee. Each chapter included hazard analysis, historical analysis, impact identification and analysis of future vulnerability.

State of Colorado, Colorado Hazard Mitigation Grant Program (HMGP) Assistance, 2015.

Provided technical assistance with Benefit Cost Analysis, project scoping and eGrants for the FY 2015 PDM/FMA grant cycle.

City and County of Denver, CO Hazard Mitigation Plan Update, 2016, Planner.

Working with the City/County to facilitate successful planning process and plan development, culminating in a compliant mitigation plan. Developing the hazard analysis for the City/County, including assessments and historical analysis of risk from drought, extreme temperatures and wildfires, along with assessment of man-made hazards including active shooter, energy disruption, and civil disturbance.

Santa Fe County, NM Hazard Mitigation Plan Development, 2015, Planner.

Working with the county to facilitate successful planning process and plan development, culminating in a compliant mitigation plan. Developed the hazard analysis for the county, including assessments and historical analysis of risk from drought, extreme temperatures and wildfires.

Jefferson County, CO Hazard Mitigation Plan Update, 2015, Planner.

Working with the county to facilitate successful planning process and plan development, culminating in a Disaster Mitigation Act (DMA) and Community Rating System (CRS) compliant mitigation plan update. Responsible for developing the hazard analysis for the county, including assessments and historical analysis of risk from drought, erosion and deposition, extreme temperatures and wildfires.

South Dakota Drought Mitigation Plan, South Dakota Office of Emergency Management, SD, 2015, Planner.

Assisted in the development of a Drought Mitigation Plan for the State of South Dakota. Tasks included assessment of agency capabilities, development of an agency capability matrix, identification of potential funding sources for drought mitigation, response and recovery, and development of a mitigation actions matrix.

Big Horn County, WY Hazard Mitigation Plan, 2015, Planner.

Responsible for developing specific chapters for hazards identified by the Planning Committee. Each chapter included hazard analysis, historical analysis, impact identification and analysis of possible future impacts for each hazard. Hazards assessed included hail, tornadoes, wildland fire and dam failure.

Campbell County, WY Hazard Mitigation Plan, 2015, Planner.

Responsible for developing hazard specific annexes for hazards identified by the Planning Committee. Annexes included hazard analysis, historical analysis, impact identification and analysis of possible future impacts. Hazards assessed include flooding, severe weather, hazardous materials and methane seeps, along with identification and assessment of vulnerable populations.

Niobrara County, WY Hazard Mitigation Plan, 2015, Planner.

Responsible for developing hazard specific annexes for hazards identified by the Planning Committee. Annexes included hazard analysis, historical analysis, impact identification and analysis of possible future impacts. Hazards assessed include drought, extreme temperatures, wildland fires, landslides and terrorism.

Teton County, WY Hazard Mitigation Plan, 2015, Planner.

Responsible for developing hazard specific annexes for hazards identified by the Planning Committee. Annexes included hazard analysis, historical analysis, impact identification and analysis of possible future impacts. Unique hazards assessed included earthquakes, winter storms and avalanche.

Los Alamos County, NM Hazard Mitigation Plan, 2015, Planner.

Supported the development of the plan, including finalization of the HIRA, development of meeting materials, and incorporation of updated hazard mitigation strategies provided by the Hazard Mitigation Planning Committee into the final plan.

Core Capabilities Assessment, State of Iowa, 2013, Project Manager.

Responsible for facilitating discipline partners and subject matter experts to set targets for each of the 31 core capabilities identified in the National Preparedness Goal, and assessing Iowa's current capability levels against those targets. This information then provided the framework for the development of the state's strategic plan for homeland security and emergency management.

Threat and Hazard Identification and Risk Assessment (THIRA), Iowa Homeland Security and Emergency Management, 2013, Project Manager.

Facilitated discipline partners and subject matter experts to identify and flesh out worst-case scenarios for each hazard listed in Iowa's Hazard Analysis and Risk Assessment, including potential impacts on National Preparedness Goal core capabilities in order to identify the maximum requirements for each core capability in the State of Iowa. Also co-coordinated the 2014 update.

Summary

Years of Experience

17

Education

MA/Environmental Science and Energy Analysis/Boston University/2004

BA/Environmental Studies/University of Colorado – Boulder/2001

BA/English/University of Colorado – Boulder/2001

Registrations / Certifications/ Licenses

- American Institute of Certified Planners (AICP), No. 0231888
- Leadership in Energy and Environmental Design Accredited Professional (LEED AP[®])
- Building Design + Construction (BD + C) GBCI, No. 10057058
- Wood E&Is Project Management Training, May 2015

Nationwide Permits under the Clean Water Act (CWA), and Fugitive Dust Control Plans (FDCPs). She also specializes in Geographic Information System (GIS) analysis, biological reconnaissance and Phase I Environmental Site Assessment surveys; and provides senior technical, QA/QC, and editorial review. She is a versatile planner that is proficient in all aspects of current and long-range planning, public outreach and engagement, and facilitation.

Representative Projects

City of Tracy Hazard Mitigation Plan, Tracy, CA (2018 – Present), Project Manager.

Ms. Prosperi is preparing the City of Tracy’s Local Hazard Mitigation Plan (LHMP). The City is preparing the LHMP to meet the eligibility requirements for the Hazard Mitigation Grant Program under Section 404 of the federal Disaster Relief Act. Ms. Prosperi is in the process of developing a single-jurisdiction LHMP. The effort involves public outreach and facilitation of three Hazard Mitigation Planning Committee (HMPC) meetings, a Stakeholder Workshop, and a public workshop. She recently prepared a Community Engagement Strategy for the City to help guide the public outreach and planning process. Ms. Prosperi also oversees a team preparing the Hazard Identification and Risk Assessment, which will cover both natural and man-made hazards.

Calaveras County Water District Local Hazard Mitigation Plan Update, Calaveras County, CA (2017 – Present), Project Manager.

Ms. Prosperi updated the Calaveras County Water District’s (CCWD) Local Hazard Mitigation Plan (LHMP). CCWD updated their LHMP to meet the eligibility requirements for the Hazard Mitigation Grant Program under Section 404 of the federal Disaster Relief Act (The Stafford Act, as amended). In coordination with our Hazard Mitigation planning team, Ms. Prosperi developed a single-jurisdiction LHMP Update consistent with the requirements of DMA 2000, FMA

Professional Summary

Ms. Prosperi has over 17 years of experience as an AICP-certified planner and regulatory compliance specialist with expertise in environmental, transportation, and land use planning with an emphasis on hazard mitigation, climate adaptation, and sustainability planning and policy. Ms. Prosperi has worked extensively as an environmental consultant on projects ranging from new schools, linear electric and water infrastructure development, renewable energy, mines, land use, hazard mitigation plans, and parks, trails, and recreation master plans. As a project manager, her skills span compliance with the National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), and Tahoe Regional Planning Agency (TRPA) Regional Plan and Code of Ordinances. As a land use planner, Ms. Prosperi regularly conducts environmental review, successfully manages multi-disciplinary teams in the preparation of national and state environmental impact documents, prepares Local and Multi-Hazard Mitigation Plans, and provides regulatory permitting support. She supports projects in northern Nevada, northern California, as well as Colorado, Oregon, and Utah.

She provides technical planning services and extensive community and stakeholder engagement strategy development and support, including organizing community involvement plans; facilitating workshops, open houses, public meetings; and presenting in front of decision-makers. Ms. Prosperi also oversees regulatory permitting and has prepared and obtained a range of plans and permit types, including Stormwater Pollution Prevention Plans (SWPPPs); Section 1602 Lake or Streambed Alteration Agreements, Section 404



and associated planning guidance and limited to natural hazards. The effort involved public outreach and facilitation of three Hazard Mitigation Planning Committee (HMPC) meetings and a public workshop. The project involved a robust planning process, participation from over 20 jurisdictions and state and local agencies, the circulation of an online public survey, informational booths at community events, and a streamlined six-month schedule. Ms. Prosperi ensured the LHMP update was completed on-time and within budget; both Cal OES and FEMA recently approved the project in October, and the LHMP goes before the CCWD Board this November.

Stillwater National Wildlife Refuge – Carson River Ranch Parcels Land Transfer to State of Nevada, Lyon County, NV (2018), Deputy Project Manager.

Ms. Prosperi supported and oversaw the completion of a Phase 1 Environmental Site Assessment consistent with ASTM Standard Practice E1517-05 and Environmental Protection Agency Standards and Practices for All Appropriate Inquiries (40 CFR Part 312) for an approximate 1,700-acre project site along the Carson River near Silver Springs, Nevada. The project documentation is being prepared on behalf of the US Fish and Wildlife Service as part of a property transfer to the State of Nevada. The project involved conducting a Phase I ESA on a subject site that overlapped with a large portion of the Carson River Superfund Site Operable Unit 2 study area, which spans from Virginia City to the terminal wetlands in the Stillwater National Wildlife Refuge.

Big Bend National Park, Land Protection Plan, National Park Service, Brewster County, TX (2017 – Present), Deputy Project Manager.

Ms. Prosperi is assisting in the preparation of a draft Land Protection Plan for Big Bend National Park, with a focus on non-park owned parcels inside and adjacent to the Park boundaries. The Land Protection Plan will be used in understanding parcel ownership and to prioritize non-park owned parcels for various actions (e.g. easements, acquisition, etc.) in order to reduce future conflicts. Ms. Prosperi is coordinating BIBE and NPS review of the plan.

West Wash Dam Rehabilitation Supplemental Watershed Plan and Environmental Assessment, Natural Resources Conservation Service – Nevada State Office, Reno, NV (2015-2017), Project Manager.

Ms. Prosperi prepared a Supplemental Watershed Plan and Preliminary Environmental Assessment (PLAN-EA) for the Natural Resources Conservation Service (NRCS) that evaluated alternatives for the rehabilitation of West Wash Dam located within northwest Reno, Nevada. Ms. Prosperi was responsible for the preparation of a Public Participation Plan, Scoping Notices, the facilitation of the Scoping Meeting, two Public Workshops, the preparation of a Scoping Report, and the completion of numerous sections of the Public Review EA. This project involved the completion on an economic cost-benefit analysis, a robust planning process and a diverse stakeholder group that include the City of Reno, Washoe County, University of Nevada – Reno, and several community groups.

634 Line Rebuild EA and Construction Monitoring, NV Energy, Douglas County, NV (2015 – 2017), Project Manager.

Ms. Prosperi managed the preparation of an Public Review and Final EA and Finding of No Significant Impact (FONSI) document for the reconstruction of a 2.67-mile portion of the existing 634 Transmission Line from Foothill Road in the Carson Valley to Tramway Drive near the Heavenly Valley Ski Resort in Douglas County, Nevada. The project was constructed at 120 kV standards to meet current avian protection construction guidelines. A 1.65-mile portion of the 634 Line is located on private land and a 1.02-mile portion is located on federal public lands managed by the US Forest Service. Ms. Prosperi recently oversaw the restoration and environmental monitoring for the transmission line.

Pinewild Condominium Distribution Line Rebuild, Zephyr Cove, NV (2018 – Present), Deputy Project Manager.

Ms. Prosperi is currently working on behalf of NV Energy to obtain project permits for a distribution line rebuild project in the Pinewild subdivision located along the eastern shore of Lake Tahoe in Zephyr Cove. Ms. Prosperi conducted a tree survey, including documentation of diameter breast height (dbh) of all protected trees within 15 feet of a proposed distribution line rebuild and specific transformer site replacement. She prepared a Tree Protection Plan, Temporary BMP Plan, and coordinated site plan review with NV Energy and Tahoe Regional Planning Agency (TRPA) staff.

Lake Village Subdivision Distribution Line Rebuild, Stateline, NV (2018 – Present), Deputy Project Manager.

Ms. Prosperi is currently working on behalf of NV Energy to obtain Tahoe Regional Planning Agency permits for a distribution line rebuild project. Ms. Prosperi conducted a tree survey, including documentation of diameter breast height (dbh) of all protected trees within 15 feet of a proposed distribution line rebuild and specific transformer site replacement. She prepared a Tree Protection Plan for the project. She also supported the preparation of a Temporary BMP Plan, and coordinated site plan review with NV Energy and TRPA staff.

Incline Village Tyner Way Distribution Line Rebuild, Incline Village, NV (2018 – Present), Deputy Project Manager.

Ms. Prosperi conducted a tree survey, including documentation of diameter breast height (dbh) of all protected trees within 15 feet of a proposed distribution line rebuild and specific transformer site replacement/retaining wall areas. She prepared a Tree Protection Plan for the project, and coordinated site plan review with NV Energy and Tahoe Regional Planning Agency (TRPA) staff.

Samsung Solar Fatal Flaw Feasibility Analyses, Kern County, Tulare County, San Bernardino County, and Kings County, CA (2018 – Present), Senior Environmental Planner.

Ms. Prosperi prepared regulatory framework, land use, aesthetics/visual resources, and noise environmental constraints analysis for over seven (7) potential solar generation facilities and generation-tie projects in Southern California. As part of the effort, she conducted land use mapping and consulted with the planning and natural resource agency departments in each County to determine the feasibility of siting a solar generation array on parcels ranging from 400 to 800 acres and located within a ½ mile of an existing transmission line or substation.

New Pass Peak Distribution Line EA, NV Energy, Pershing and Lansing County, NV (2015 – 2016)

Ms. Prosperi managed the preparation of a Public Review EA for the construction of a new 24.9 kilovolt (kV) distribution line from an existing distribution line located within the Edwards Creek Valley, located approximately 25 miles northwest of the unincorporated community of Austin, Nevada to an existing communications site located on New Pass Peak. The project would traverse approximately 5.77 miles of lands managed by the BLM within the Stillwater Field Office planning area. Ms. Prosperi worked with the Stillwater Field Office to review technical studies, develop the Proposed Action, support the scoping process, circulate the Public Review EA, and secure permits.

Mason and Smith Valley Transmission Line Right-of-Way EA, NV Energy, Yerington, NV (2015 – Present), Project Manager.

Ms. Prosperi prepared several sections of an EA that evaluated impacts associated with the rebuild of a 24-mile transmission line right-of-way permit renewal. Specifically, Ms. Prosperi prepared the summary of the Proposed Action, the mineral resources and cumulative effects section, and noticing materials. She also queried the Legacy Rehost database (LR2000), conducted a cursory review of aerial photography within the project vicinity, and coordinated with BLM specialists and Lyon County planning staff.

Santa Barbara County Cannabis Land Use Ordinance and Licensing Program EIR, Santa Barbara County, CA (2017 – Present), Senior Environmental Planner.

The County of Santa Barbara is proposing a Cannabis Land Use Ordinance and Licensing Program. Consistent with state law, the proposed Project would regulate commercial cannabis activities within unincorporated areas of the County. The Project would involve: amendments to the Santa Barbara County Code (County Code) to establish a new licensing program for cannabis activities; amendments to the County Land Use and Development Code (LUDC), the Montecito Land Use and Development Code (MLUDC), and the County Coastal Zoning Ordinance (CZO) to address cannabis activities; and amendments to County documents and regulations to address specific aspects of cannabis activities. Ms. Prosperi prepared the Land Use and Noise sections and drafted responses to public comments.

Donner Pass Roadway Improvements, Federal Highway Administration – Central Federal Lands Division (FHWA – CFLHD), Truckee, CA (2015 – Present), Senior Environmental Planner.

Ms. Prosperi is providing environmental permitting and project management services towards delivery of a final set of plans, specifications and cost estimates for the Federal Highway Administration, Central Federal Lands Highway



Division (CFLHD) for proposed improvements to Donner Pass Road located in Truckee, California. This project consists of a 6.54-mile segment of Donner Pass Road (Old US 40) beginning at the Interchange 80 / Donner Pass Road bridge in Soda Springs extending over Donner Pass, and ending at the town limits of Truckee, California. Key elements of the project include road rehabilitation, road widening to provide Class II bicycle lanes, and paving existing pullouts to improve parking for trailhead, rock climbing, and historical sightseeing access. Ms. Prosperi is supporting the CFLHD, Nevada and Placer counties, the Town of Truckee, and the USFS with the NEPA, CEQA, and regulatory approvals.

Highland Canal Stormwater Improvement, Truckee Meadows Water Authority (TMWA), Reno, NV (2013 – 2014)

Ms. Prosperi evaluated impacts, constraints, and potential alternatives for the implementation of a stormwater improvement project in northwest Reno, Nevada. The process was guided by routine feedback from a Technical Advisory Committee (TAC), which consisted of members from Nevada Division of Environmental Protection (NDEP), Nevada Division of Transportation (NDOT), Nevada Division of State Lands (NDSL), Army Corps of Engineers (Corps), City of Reno, Washoe County, and the Union Pacific Railroad (UPRR). Ms. Prosperi also oversaw the completion of the final plan set and permits.

Santa Monica Downtown Specific Plan, City of Santa Monica Planning Department, Santa Monica, CA (2017 – Present), Senior Environmental Planner.

The City of Santa Monica is proposing a Specific Plan for the Downtown District – known as the Downtown Specific Plan. The proposed Downtown Specific Plan would implement the community’s vision for the Downtown as guided by the City’s Land Use and Circulation Element (LUCE). The LUCE outlines a broad range of goals and objectives for the Downtown and requires the adoption of a specific plan that includes refined policies and standards tailored to the Downtown. Ms. Prosperi assisted the project team in the preparing responses to over 30 individual comments received during the public review period on the Draft and Recirculated Draft EIR.

Ruth Zenia and Van Duzen Roadway Improvement Project, Federal Highway Administration – Central Federal Lands Highway Division (FHWA – CFLHD), Trinity County, CA (2016 – Present), Senior Technical Advisor.

The Federal Highway Administration, Central Federal Lands Highway Division (FHWA-CFLHD), in cooperation with the US Forest Service (USFS) and Trinity County, is proposing to road improvements on Van Duzen Road (County Road 511) and Ruth-Zenia Road (County Road 502). Both roads function as primary access routes to the Six Rivers National Forest (SRNF) south of State Route 36 and provide the main transportation routes for the rural communities of Mad River, Ruth, Zenia, and Kettenpom in Trinity County, California. Ms. Prosperi is supporting the preparation of baseline biological surveys, a Categorical Exclusion (CE) under NEPA and an Initial Study/Negative Declaration (IS/ND) under CEQA, and environmental permits. She also provided senior and QA/QC review for project deliverables.

Additional Qualifications

- “It Takes Everyone – Sustainability Planning in Lake Tahoe” Presenter/Panelist, American Planning Association – Western Planner Conference, October 2013, Stateline, Nevada
- “Career Planning for Young Urban Planners” Panelist/Organizer, American Planning Association – California Planning Conference (CalAPA), November 2009, Squaw Valley, California



Summary

Years of Experience

1

Education

MURP/Urban and Regional Planning/University of Colorado Denver/2017

BA/Urban Studies/College of Charleston/2014

Professional Associations

- American Planning Association
- APA Colorado

Areas of Expertise

- ICS-100 Introduction to Incident Command/12/31/2050
- IS-700 National Incident Management System (NIMS)/12/31/2015
- ICS-200 ICS for Single Resources and Initial Action Incident/12/31/2050
- IS-800 National Response Framework/12/31/2050
- ICS-300 Intermediate ICS for Expanding Incidents/12/31/2050

Professional Summary

Ms. Carr has educational and professional planning experience with a focus on land use and hazard mitigation. She worked as a Planner for Arapahoe County, Colorado to review site plans by applying the County's Land Development Code and Comprehensive Plan to each plan. As a County Planner, she revised the Wireless Telecommunication Systems section of the Land Development Code to be up to date with modern technology and state statutes. She worked with the City of Manitou Springs to research hazard mitigation strategies for flooding and wildfire that could be applied to historic properties without diminishing their historic integrity. She created educational handouts for the public based on her research. She received her BA in Urban Studies with a concentration in Urban Planning from the College of Charleston and her Master's in Urban and Regional Planning with a focus on hazard mitigation from the University of Colorado, Denver. At Wood, she has worked as a Hazard Mitigation Planner to help communities write and update their Hazard Mitigation Plans as well as help in determining potential mitigation actions for their community.

Representative Projects

City of Tracy Local Hazard Mitigation Plan, City of Tracy, California, 2018. Planner. Ms. Carr is providing support for the preparation of a new LHMP for the City of Tracy located in San Joaquin County, California. Ms. Carr drafted the Online Public Survey for the City to increase participation, and is supporting the preparation of community engagement and outreach materials, including flyers, brochures, website postings, and other materials. Ms. Carr is also in the process of preparing the Hazard Identification and Risk Assessment.

City of Westminster Hazard Mitigation Plan Update, 2018, City of Westminster Emergency Management, Planner.

Responsible for updating the City of Westminster's Hazard Mitigation Plan, compliant with the Disaster Mitigation Act (DMA) of 2000. Responsible for updating and editing the plan document and completing a mitigation capabilities tracker based on the City's available resources. Participated in the facilitation of HMPC meetings.

Wyoming Regional Hazard Mitigation Plans, Region 1 and Region II, 2018 Wyoming Office of Emergency Management, Planner.

Responsible for writing the base document of Region I's Hazard Mitigation Plan based on information collected from HMPC meetings, public meetings, public surveys, and local hazard mitigations plans.

Responsible for completing the Hazard Identification and Risk Assessment for the Region II and writing the base document of Regional Hazard Mitigation Plan. Participated in facilitating HMPC and public meetings.

Archuleta County Hazard Mitigation Plan Update, 2018, Archuleta County Office of Emergency Management, CO, Planner.

Updated the County's mitigation actions plan through information given from the Office of Emergency Management and other County stakeholders.



Story County Hazard Mitigation Plan Update, 2018, Story County, IA, Planner.

Researched and completed portions of the Hazard Identification and Risk Assessment for the County's plan update. The sections included: human disease, animal, plant and crop disease, hazardous materials, infrastructure failure, and transportation incident.

Colorado State Hazard Mitigation Plan Update 2018, Colorado Department of Homeland Security, Planner.

Responsible for data collection from local hazard mitigation that was integrated into the State of Colorado Hazard Mitigation Plan. Participated in the facilitation of HMPC meetings.

Colorado Drought Mitigation and Response Plan Update 2018, Colorado Water Conservation Board, Planner.

Responsible for data collection from local hazard mitigation action plans that was integrated into the Drought Plan. Updated the base document with new information that has happened since the last plan update and integrated information from the State Hazard Mitigation and Flood Plans that were simultaneously being updated. Participated in facilitating planning meetings including, creating handouts and updating mitigation action tables.

Colorado Flood Plan Update 2018, Colorado Water Conservation Board, Planner.

Participated in the update to Colorado's Flood Plan, compliant with the Disaster Mitigation Act (DMA) of 2000 and aligned with modern emergency management standards. Responsible for data collection from local hazard mitigation action plans that was integrated into the Flood Plan. Updated the base document with new information that has happened since the last plan update and integrated information from the State Hazard Mitigation and Drought Plans that were simultaneously being updated.

Ute Mountain Ute Tribal Hazard Mitigation Plan Update, 2018, Ute Mountain Ute Tribe, Ute Mountain Ute Reservation, CO, Planner.

(32790096) Researched and completed portions of the Hazard Identification and Risk Assessment for the Tribe's plan update. Responsible for the updating and editing the plan document including the integration of new data on natural hazards and the results from public surveys.

South Dakota Hazard Mitigation Plan Update, 2018, State of South Dakota Office of Emergency Management, SD, Planner.

Responsible for the collection of information from local hazard mitigation plans that is used to inform the plan update. Updated and edited the base document including the integration of new information that was collected from local hazard mitigation plans.

Publications / Presentations

"Hazard Mitigation Strategies for Historic Properties", City of Manitou Springs Historic Preservation Commission, May, 2017



Summary

Years of Experience

1

Education

MS/Geographic Information
Science/University of Denver/2017

BA/ Geography and Environmental
Studies/University of Colorado/2015

Professional Summary

Marta is a GIS Analyst and Planner for Wood, primarily involved with Water Resources and Hazard Mitigation projects. She has experience with Geographic Information Systems and Technology, which allow for the collection, analysis, management, storage, and representation of a variety of complex spatial and non-spatial datasets. For planning projects, she enjoys researching, analyzing data, collaborating with government entities, and devising creative ways to implement solutions to regions vulnerable to various hazards (e.g., drought, flooding, wildfire). Previous to joining the Wood Environment and Infrastructure team, she worked as a GIS Intern at Quantum Water and Environment, manipulating and analyzing geospatial information and datasets related to groundwater studies and environmental

compliance projects. She concurrently worked at the University of Denver (DU), as a Graduate Teaching and Research Assistant to her department's academic instructors.

During her time at DU, Marta gained experience teaching and conducting research within the fields of GIS and geography, particularly by employing statistical analyses and the development of geospatial visualization systems. She has been involved with projects related to natural resource management, transportation networks, real estate, cyber infrastructure, and urban geography, where she often dealt with project management and community development-focused tasks. She is passionate about applying spatial analysis, data management, visualization methods, and planning and regulation processes to aid with decision making within different industries and economy sectors.

Representative Projects

Town of Greybull Benefit Cost Analysis (BCA) for Levee Certification, Big Horn, WY, Planner / GIS Analyst.

Planner and GIS Analyst, performed parcel analysis of critical facilities at risk of flooding to the 10-year, 25-year, 50-year, 100-year, and 500-year events. Collected, manipulated, analyzed, and created summaries and maps. Developed a project summary document to state the process to arrive at the building loss estimates, and what analysis/methods were used to calculate depth damage functions from parcels, local information, flood depth grids, survey elevation points, and construction replacement values. Finally submitted the results into FEMA's BCA Tool.

Tribal Hazard Mitigation Plan Update, Ute Mountain Ute Tribe, CO, Planner / GIS Analyst.

Worked to manipulate and make a presentation of GIS and relevant tribal data and information, to present during the Mitigation Plan meetings with the community. Also helped researching for and writing the hazard mitigation plan.

Hazard Mitigation Plan Update, 11 County Plans, IA, Planner / GIS Analyst.

Performed GIS analysis using ArcGIS 10.4.1 to complete hazard risk assessments to provide loss estimates as well as mapping products. Other GIS analysis was performed for geographic hazards such as Dam Failure and Levee Failure as well as Wildland/Grass Fire and Hazardous Materials Incidents. Additionally, researched and wrote several hazard sections for many of the community plans (e.g., riverine flooding, wildfire).

Colorado State Drought Mitigation and Response Plan Update, CO, Planner / GIS Analyst.

Planner and GIS Analyst, researching and incorporating updates to the environmental, energy, state assets, and social vulnerability sections within the previous plan, to represent recent changes in state regulation, past and future potential effects from drought, and other aspects tied to this hazard. GIS analyses as well as a vulnerability calculation tool are part of the update, and Marta assisted with implementation and interpretation of how these results may affect how the state will monitor, mitigate, and respond to drought across its many sectors. Also attended meetings



with local agencies and governments (e.g., CWCB, Colorado Parks and Wildlife) to coordinate and develop mitigation action and response strategies.

Colorado Enhanced State Multi-Hazard Mitigation and Response Plan Update, CO, Planner / GIS Analyst.

Processed Level 1 Hazus Flood Analysis for counties across the state. Assisted with QA-QC for GIS and planning tasks. Wrote the drought hazard chapter. Made maps and figures for various hazards, to display vulnerabilities as well as statuses of current local plans and municipal and tribal mitigation efforts. Performed analysis on state assets/facilities and potential losses across the state for landslide hazards.

Wyoming Regions 1 and 2 Multi-Hazard Mitigation Plans, WY, Planner / GIS Analyst.

Planner and GIS Analyst, creating blueprints to guide mitigation and response actions related to various hazards (e.g., wildfire, flood, drought, dam failure), by collecting information about local vulnerabilities, regulations, knowledge, populations, and properties/structures to create a regional plan. The planning process requires GIS analyses of local, state, and federal datasets (e.g., FEMA's Digital Flood Insurance Rate Maps), map generation, data management, parcel analysis, and other spatial and non-spatial tool and information synthesizing to enable local governments to make informed decisions, reduce losses, and increase resilience from these and other complex hazards. Wrote several of the hazards' Hazard Identification and Risk Assessment (HIRA) chapters.

Castle Rock Drought Plan, Castle Rock, CO, Planner.

Assisting with conducting background research then developing a drought plan, by implementing information collected from various sources, local master plans, and community-held workshops. The project involves formulating the town's first-ever drought management plan, with the objectives to provide a comprehensive framework to guide Castle Rock's staff on drought mitigation and response actions, preserve essential public services and water resources during droughts, minimize adverse drought-related impacts (e.g., on public health and safety, economic activity, the environment), enable effective community of drought awareness, and provide an effective means to monitor and improve the plan itself over time.

Converse County Hazard Mitigation Plan, WY, Planner / GIS Analyst.

Reviewed and quality checked GIS analysis on critical facilities and plan documents, to ensure consistency in discussions, text, charts, graphs, tables, maps, and other related data and content.

Hazards U.S. (HAZUS) Analyses for FEMA and RiskMAP Studies, Colorado State-Wide, GIS Analyst.

Performing riverine-based flooding and hazard studies on various counties across Colorado, to identify areas of particular risk by utilizing specialized GIS software and tools. The loss estimation analyses take into account different complex variables including Digital Elevation Models (DEMs), hydrological features, population and other census-derived data, and local utilities and infrastructure. Results are then further analyzed to arrive at how the financial, social, and infrastructure losses may affect people and jurisdictions, and put into map form for presentation at hazard mitigation meetings and events.

Arkansas River Hydrologic Evaluation, CO, GIS Analyst.

Generated maps after analyzing river gauge, dam, and other related hydrology data to portray the river basin and all its features. Carried out research as well to corroborate information from USGS records and other online databases. Also created a historic geographic visualization and document access interface containing water studies and features related to the basin (published on ArcGIS Online).

Colorado Water Conservation Board's (CWCB) Colorado Hazard Mapping and RiskMAP (CHAMP) Phase III, Colorado State-Wide, GIS Analyst.

Performing various GIS and data management tasks including spatial analyses, digitizing, geo-rectification, development of stream centerlines, image analysis and construction, data collection and metadata creation/revision, assessments of existing datasets (e.g., QA/QC), and generating visual outputs related to floodplain delineation and mapping of different riverine risks across Colorado. The tasks performed assist engineering and science-based work

that will ultimately empower communities with long-term planning and resiliency tools to combat flooding and other natural hazards.

BP Wood River Environmental Site Cleanup, IL, GIS Analyst.

Assisting with geospatial mapping, analysis, and data management work related to an environmental compliance and cleanup project from an old BP oil refinery near the Wood River. Specific tasks include finding and documenting data sources (e.g., generation of metadata), conducting project research, editing features, creating datasets, and quality checking work.

Fluvial Hazard Migration, CO, GIS Analyst.

Performing GIS tasks including research of historical imagery, geo-rectification of raster datasets, general data analysis, digitization to obtain vectorized datasets, and performing QA/QC. This project seeks to study and understand how streams and their features change over time, and concurrently affect or may be affected by natural and man-made structures, so that conclusions may be made about the hazards posed by and imposed onto riverine features (e.g., river banks).

Middle South Platte River First Order Approximate (FOA), CO, GIS Analyst.

Analyzed and processed the Middle South Platte River area streams, to re-arrange their location, shape, size, and connectivity with other streams based on their features and surrounding landscape (natural environment). This allowed for future hydrological and hydraulic analysis and modeling to take place, as the raw line features were not in a clean enough format to enable further analysis/modeling.

Mina Cata, Coloso Mine, Guanacevi Mine, El Cubo Mine, and Terronera Mine Projects, Mexico, GIS Analyst.

Analyzed and processed historical images to superimpose imagery from various years, and create mosaics and raster dataset collages. These images show the changes in the areas in and around the mines in question, over time. Processing involved mosaicking methods, geo-rectification, clipping, resizing, re-structuring, conversion, and other such manipulation.

Rio Grande Levee Work, CO, GIS Analyst.

Generated maps after analyzing levee, dam, and other related data to portray the Rio Grande Levee and all its features. Carried out research as well to corroborate information from historic records, imagery, and geospatial datasets.

Summary

Years of Experience

5

Education

MS/Geology/West Virginia University/2013
BA/Earth and Planetary Sciences/Ohio Wesleyan University/2007

Core Skills

Hydrologist/Hydrogeologist
Technical Writer
Risk Assessor
Environmental Scientist
Administrative
Geologist
GIS Specialist

Professional Summary

Ms. Berlinghieri has five years of environmental consulting experience in environmental hydrology and geology. She has provided task management and technical support on both government and private sector projects. She has managed and supported the development of site characterization reports, technical memoranda, work plans, standard operating procedures, risk assessments, hazard mitigation plans, and emergency action plans. She has assisted in the development of HEC-RAS dam inundation models and watershed-scale and local-scale water budgets. Her field experience includes stream gauging, geomorphic stream assessment, aquifer testing, collection of field-based water quality parameters, and operations and maintenance of automatic samplers, pressure transducers, and meteorological stations. Her environmental sampling experience includes surface water, groundwater, stormwater, mine waste, stream sediment, and aquatic macroinvertebrates. Ms. Berlinghieri also performed independent research quantifying surface water-groundwater exchange in a restored stream channel using a one-dimensional heat transport model.

Representative Projects

Calaveras County Water District Local Hazard Mitigation Plan Update, Calaveras County, CA (2018), Staff Geologist.

Prepared materials for planning meetings and workshops with stakeholders and multiple agencies to support the development of an update to the Calaveras County Water District Local Hazard Mitigation Plan.

West Wash Dam Rehabilitation Environmental Assessment, Dougherty Sprague Environmental, Reno, NV (2015), Staff Geologist.

Assisted in preparation of Environmental Assessment for West Wash Dam Rehabilitation. Researched and prepared Geological Resources and Soil Resources text. Evaluated potential consequences of four alternatives and proposed mitigation measures to minimize construction impacts.

Georgetown Divide Public Utility District Dam Inundation Mapping and Emergency Action Plan, Georgetown, CA (2018-present), Modeler and Emergency Action Planner.

Assisted in preparation of HEC-RAS dam inundation model consistent with the approach required by Division of Safety of Dams (sunny day breach for specific dam storage). Performed field reconnaissance of hydraulic structures. Coordinated with client to gather data and other information necessary to develop the inundation model. Assisted in preparation of the Emergency Action Plan based on dam inundation modeling results.

Remedial Investigation at Confidential Mine Superfund Site, Alpine County, CA (2013-present), Staff Geologist/Hydrologist.

Worked as member of multidisciplinary project team to perform remedial investigation activities at a remote site. Managed field implementation of stormwater, surface water, water balance, and surface water-groundwater interaction investigations. Responsible for equipment inventory and maintenance, training field staff, managing sampling crews, and providing support in site logistics and staffing. Performed environmental sampling of surface water, groundwater, stormwater, mine waste, stream sediment, and aquatic macroinvertebrates. Performed stream discharge measurements, water level measurements, pressure transducer operations and maintenance, maintenance and troubleshooting on automatic water samplers, conventional and pneumatic aquifer testing, hydrometeorological data collection, and meteorological station maintenance. Installed and monitored drive-point piezometers and



seepage meters to assess surface water-groundwater interaction. Provided oversight of subcontractors during construction of two in-channel v-notch weirs. Performed compilation, validation, quality control checks, and evaluation of field data and geochemical data. Managed and assisted in preparation of standard operating procedures, risk assessments, data evaluation, reports, tables, and figures.

Walker Mine Site, Confidential Client, Plumas County, CA (2014), Staff Geologist.

Prepared client for litigation through document review and report preparation. Reviewed historical and technical documents and correspondence to decipher site history, responsible parties, site investigations, and remedial actions. Prepared timeline including site history, mining activities, property ownership, and remedial activities. Contributed to preparation of expert report.

Statewide Geotechnical TO 07 SBRRRP, California Department of Transportation (Caltrans), Sacramento, CA (2018), Staff Geologist.

Provided quality control review of geotechnical borehole investigations to identify permanent installations and prepare for field verification of borehole locations. Reviewed boring backfill data sheets and well completion reports for compliance with Caltrans requirements. Analyzed Geotechnical Design Reports, Foundation Reports and Log of Test Borings for geotechnical borehole specifications and potential impacts on groundwater basins.

Caltrans Injection Well Inventory, California Department of Transportation (Caltrans), Sacramento, CA (2015), Staff Geologist.

Supported client in effort to update and validate inventory of Class-V injection wells on its properties. Visited Caltrans maintenance stations and rest areas to validate existence of wells listed on historic inventory. Obtained data for well registration through site reconnaissance and conversations with Caltrans personnel.

CDM/Caltrans-TMDL Monitoring D2, 3, 10, CDM Smith Inc., Various, CA (2013-2016), Field Scientist.

Conducted stormwater monitoring to characterize storm runoff from highways. Collected flow-weighted composite and one-time grab samples using automatic stormwater samplers for a variety of analytes. Maintained communication with management and other field personnel.

Additional Qualifications

- Berlinghieri, AL, 2013, Assessment of Hyporheic Exchange at In-stream Restoration Structures on Savage River, Garrett County, Maryland [MS Thesis]: West Virginia University, 78 p.
- Schneider, AL, Mittlefehldt, DW, 2007, Compositional Constraints on Hematite-rich Spherule (Blueberry) Formation at Meridiani Planum Mars: Lunar and Planetary Science XXXVIII, Abstract #1941, Lunar and Planetary Institute, Houston, TX.
- Software: Microsoft Office, HEC-RAS, ArcGIS, Hach Insight, Trimble TerraSync and Pathfinder, Solinst Levellogger, AQTESOLV, and MATLAB.

**ACTION OF
HIDDEN VALLEY LAKE COMMUNITY SERVICES DISTRICT**

DATE: November 19, 2018

AGENDA ITEM: Discussion and Possible Action: Discuss cost and make recommendation for funding option for the October power outage

RECOMMENDATIONS: Make recommendation to approve payment for emergency power generator (October 14-16, 2018) to United Rental in the amount of \$16,447.69 and Coastal Mountain Electrical in the amount of \$2,562.50, Staff recommend funds come from Operational Reserves (Fund 325 \$20K available as of Nov. 2018)

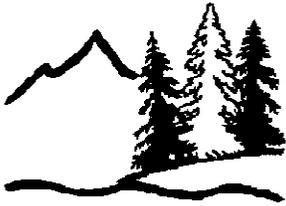
FINANCIAL IMPACT: United Rental	\$16,447.69
Coastal Mountain	\$2,562.50
Total	\$19,010.19

BACKGROUND: On October 14, the District was affected by a power outage due to a fire at Hwy 29 and Tubbs Lane. Staff requested (3) generators from United Rental. Coastal Mountain Electric was on site for the connection and wiring of the generators. Generators were demobilized on October 16th.

APPROVED
AS RECOMMENDED

OTHER
(SEE BELOW)

Modification to recommendation and/or other actions:



James Day Construction, Inc.
 dba Coastal Mountain Electric
 14832 Lakeshore Drive
 Clearlake, CA 95422
 Ph: 707-994-0437 * Fx: 707-994-8504

Commercial - Industrial - Agriculture
 Electrical Systems, Design / Build
 License #507105 C10
 DIR PWCR #1000008522
 SAM * CA DGS #1153880 SB Cert.

Invoice

7546

Date

11/13/2018

Bill To:
 Hidden Valley Lake Comm. Service District
 19400 Hartman Road
 Hidden Valley Lake, CA 95467-8371

Project: 7167 Hook up Generators

Job Site Address:

Ph 707-987-9201 Fx 707-987-3237accting

Vender#	P.O. Number	Terms
	Trouble Call	Net 30

Service Date	Description	Qty	Cost	Total
10/14/18	Hook up generators at Hartman Plant, Greenridge, Station 9 and Well site for power outage.	17	125.00	2,125.00
10/15/18	Disconnect office building from genset. Other genset locations disconnected by others. Generator rental to be billed direct to HVLCSD.	3.5	125.00	437.50

Total	\$2,562.50
Payments/Credits	\$0.00
Balance Due	\$2,562.50

Please pay by this invoice. Statements only issued to past due accounts. Coastal Mountain Electric reserves the right to charge interest on all past due invoices at a rate of 1 1/2% interest monthly (18% annually).

**ACTION OF
HIDDEN VALLEY LAKE COMMUNITY SERVICES DISTRICT**

DATE: November 19, 2018

AGENDA ITEM: Discuss: Cost and make recommendation for funding option for the November power outage

RECOMMENDATIONS: Make recommendation to approve the transfer of funds from Capital Improvement Reserves (Fund 320) to Operational Reserves (Fund 325) to pay for power generation during the purposed November power shut down. Recommendation to transfer \$25K

FINANCIAL IMPACT: \$25K

BACKGROUND: District Staff were notified the morning of November 8th by PG&E that power was scheduled to be shut down between 4 and 8 am. The District mobilized the generators to have on standby should the power go out. PG&E chose not to shut power down. The District will be billed for 1 day for each generator (3) on site by United Rental.

APPROVED
AS RECOMMENDED

OTHER
(SEE BELOW)

Modification to recommendation and/or other actions:

Hidden Valley Lake CSD
Conceptual Study Engineer's Estimate
Backup Power Reliability
Hazard Mitigation Grant Program
June 2017

ITEM NO.	ITEM DESCRIPTION	ESTIMATED QUANTITY	UNIT OF MEASURE	UNIT PRICE	ITEM TOTAL
Well 04					
1	Site Excavation & Misc. Demo	1	LS	\$ 25,000	\$ 25,000
2	Generator & Switchgear	1	LS	\$ 100,000	\$ 100,000
3	Misc. Electrical	1	LS	\$ 15,000	\$ 15,000
4	New Access Road & Misc. Grading	1	LS	\$ 35,000	\$ 35,000
Admin Building/WTP Site					
5	Demo Wooden Building	1	LS	\$ 15,000	\$ 15,000
6	Generator & Switchgear	1	LS	\$ 150,000	\$ 150,000
7	New Gate & Fence	1	LS	\$ 10,000	\$ 10,000
8	Misc. Electrical	1	LS	\$ 15,000	\$ 15,000
9	Misc. Grading	1	LS	\$ 5,000	\$ 5,000
Greenridge Booster Pump Station Site					
10	Site Excavation & Misc. Demo	1	LS	\$ 25,000	\$ 25,000
11	Generator & Switchgear	1	LS	\$ 100,000	\$ 100,000
12	New Building	1	LS	\$ 150,000	\$ 150,000
13	Misc. Electrical	1	LS	\$ 15,000	\$ 15,000
14	Misc. Grading	1	LS	\$ 15,000	\$ 15,000
Unit 9 Site					
15	Site Excavation	1	LS	\$ 15,000	\$ 15,000
16	Demo Building	1	LS	\$ 15,000	\$ 15,000
17	New Control Building	1	LS	\$ 150,000	\$ 150,000
18	Generator & Switchgear	1	LS	\$ 100,000	\$ 100,000
19	New Control Panels	1	LS	\$ 75,000	\$ 75,000
20	Misc. Electrical	1	LS	\$ 15,000	\$ 15,000
21	Misc. Grading	1	LS	\$ 15,000	\$ 15,000
OVERALL					
22	SWPPP	1	LS	\$ 18,000	\$ 18,000
23	Mobilization	1	LS	\$ 46,000	\$ 46,000
Construction Subtotal					\$ 1,124,000
Construction OHP (10%)					\$ 113,000
25% Contingency					\$ 310,000

**ACTION OF
HIDDEN VALLEY LAKE COMMUNITY SERVICES DISTRICT**

DATE: November 19, 2018

AGENDA ITEM: Discuss AMI options and provide the Board with additional information; requesting direction to proceed.

RECOMMENDATIONS: Select the option most beneficial to the District and its ratepayers.

FINANCIAL IMPACT:

Schneider Electric : \$977,342. (20 year SRF loan)

Suez : \$2,085,000. (15 year maintenance/lease)

Suez : \$1,901,210 (10 year maintenance/lease)

BACKGROUND:

APPROVED
AS RECOMMENDED

OTHER
(SEE BELOW)

Modification to recommendation and/or other actions:

Financial Summary
Hidden Valley Lake CSD

Projected Savings	
Projected Savings:	\$ 42,732
Escalation:	0.00%
Savings Guarantee Term (yrs):	20
Projected Construction Savings:	

Guarantee Savings			
	Measured	Non-Measured	Escalation
Annual Utility Savings:			
Operations & Maintenance:			
Capital Cost Avoidance:			
Construction Utility Savings:			

Cost	
Total Project Pricing:	\$ 1,637,341
Capital Contribution:	
Grant:	\$ 818,670.50
Finance Amount:	\$ 818,671
Utility Rebate:	

Finance Terms	
Annual Interest Rate (%):	1.70%
# of Payment Periods per Yr:	1
Lease Term (yrs):	20
Payment Factor:	0.000000
Payment per Period:	\$ 48,629

Performance Assurance	
Measurement & Verification:	\$ -
Support Services:	\$ 25,632
Escalation:	1.00%

Year	Savings				Cost			Performance Assurance		Net Savings		
	Projected	Measured Utility	Non-Measured Utility	O&M / Capital CA	Guarantee Total (B+C+D)	Project Payment	Guaranteed Surplus (E+F)	Projected Surplus (A+F+Reb)	M&V Costs	Support Services Costs	Net Savings (H+I+J)	Projected Cumulative Savings
	A	B	C	D	E	F	G	H	I	J	K	L
Construction												
1	\$ 42,732					\$ (48,629)	\$ (48,629)	\$ (5,897)			\$ (5,897)	\$ (5,897)
2	\$ 42,732					\$ (48,629)	\$ (48,629)	\$ (5,897)		\$ (25,888)	\$ (31,786)	\$ (37,683)
3	\$ 42,732					\$ (48,629)	\$ (48,629)	\$ (5,897)		\$ (26,409)	\$ (32,306)	\$ (69,989)
4	\$ 42,732					\$ (48,629)	\$ (48,629)	\$ (5,897)		\$ (26,939)	\$ (32,837)	\$ (102,826)
5	\$ 42,732					\$ (48,629)	\$ (48,629)	\$ (5,897)		\$ (27,481)	\$ (33,378)	\$ (136,205)
6	\$ 42,732					\$ (48,629)	\$ (48,629)	\$ (5,897)		\$ (28,033)	\$ (33,931)	\$ (170,136)
7	\$ 42,732					\$ (48,629)	\$ (48,629)	\$ (5,897)		\$ (28,597)	\$ (34,494)	\$ (204,630)
8	\$ 42,732					\$ (48,629)	\$ (48,629)	\$ (5,897)		\$ (29,172)	\$ (35,069)	\$ (239,699)
9	\$ 42,732					\$ (48,629)	\$ (48,629)	\$ (5,897)		\$ (29,758)	\$ (35,655)	\$ (275,354)
10	\$ 42,732					\$ (48,629)	\$ (48,629)	\$ (5,897)		\$ (30,356)	\$ (36,254)	\$ (311,608)
11	\$ 42,732					\$ (48,629)	\$ (48,629)	\$ (5,897)		\$ (30,966)	\$ (36,864)	\$ (348,472)
12	\$ 42,732					\$ (48,629)	\$ (48,629)	\$ (5,897)		\$ (31,589)	\$ (37,486)	\$ (385,958)
13	\$ 42,732					\$ (48,629)	\$ (48,629)	\$ (5,897)		\$ (32,224)	\$ (38,121)	\$ (424,079)
14	\$ 42,732					\$ (48,629)	\$ (48,629)	\$ (5,897)		\$ (32,871)	\$ (38,769)	\$ (462,847)
15	\$ 42,732					\$ (48,629)	\$ (48,629)	\$ (5,897)		\$ (33,532)	\$ (39,429)	\$ (502,277)
16	\$ 42,732					\$ (48,629)	\$ (48,629)	\$ (5,897)		\$ (34,206)	\$ (40,103)	\$ (542,380)
17	\$ 42,732					\$ (48,629)	\$ (48,629)	\$ (5,897)		\$ (34,894)	\$ (40,791)	\$ (583,171)
18	\$ 42,732					\$ (48,629)	\$ (48,629)	\$ (5,897)		\$ (35,595)	\$ (41,492)	\$ (624,664)
19	\$ 42,732					\$ (48,629)	\$ (48,629)	\$ (5,897)		\$ (36,310)	\$ (42,208)	\$ (666,872)
20	\$ 42,732					\$ (48,629)	\$ (48,629)	\$ (5,897)		\$ (37,040)	\$ (42,938)	\$ (709,809)
Total	\$ 854,640					\$ (972,589)	\$ (972,589)	\$ (117,949)		\$ (591,860)	\$ (709,809)	

Comments:

AMI Metering Asset Management & Maintenance Program:

Hidden Valley Lake CSD - AMI Financing Options						
	Option 1 - 5 year Spread , you own it after 6 years		Option 2 - 10 year Lease		Option 3 - 15 year Lease	
Annual Fee: Years 1-5	\$267,202	\$1,336,010	\$149,000	\$1,490,000	\$139,000	\$2,085,000
Maintenance Fee: Years 1-15	\$27,414	\$411,210	\$27,414	\$411,210	\$0	\$0
Total Cost 15 year Project		\$1,747,220		\$1,901,210		\$2,085,000
	y2-y6	y7-y15				
Amount Due for infrastructure/capex	\$267,202	\$0	\$149,000		\$139,000	
Cash In/additional billing/year*	\$126,840	\$126,840	\$126,840		\$126,840	
Suggested Meter/Infrastructure Fee**	\$27,414	\$27,414	\$27,414		\$27,414	
Cash Out	\$112,948	-\$154,254	-\$5,254		-\$15,254	
Total Cash Out	\$564,740	-\$1,542,540				
		-\$977,800				
*: revenue enhancement of \$10,570/mo x 12 = \$126,840/yr						
**: \$27,414/2477 = \$11.07/meter/yr = \$.92/meter/mo infrastructure charge = 100% offset of system, rest of savings go to your bottom line						