NOTICE OF SPECIAL ENVIRONMENTAL COMMITTEE MEETING

Responsible for matters of stewardship of the District's property including: Urban Water Management Plans; Water Conservation Programs; Classis Watershed Education Grants; Watershed Management; Resource Management and other environmental related matter.

NOTICE IS HEREBY GIVEN that the San Lorenzo Valley Water District has called a special meeting of the Environmental Committee to be held on **Wednesday, January 15, 2020 10:00am** at the Operations Building, 13057 Highway 9, Boulder Creek, California.

AGENDA

1. Convene Meeting/Roll Call

2. Oral Communications
   This portion of the agenda is reserved for Oral Communications by the public for items which are not on the Agenda. Please understand that California law (The Brown Act) limits what the Board can do regarding issues raised during Oral Communication. No action or discussion may occur on issues outside of those already listed on today's agenda. Any person may address the Committee at this time, on any subject that lies within the jurisdiction of the District. Normally, presentations must not exceed five (5) minutes in length, and individuals may only speak once during Oral Communications. Any Director may request that the matter be placed on a future agenda or staff may be directed to provide a brief response.

3. Old Business:
   Members of the public will be given the opportunity to address each scheduled item prior to Committee action. The Chairperson of the Committee may establish a time limit for members of the public to address the Committee on agendized items.

   A. REVIEW STATEMENTS OF QUALIFICATIONS RECEIVED FOR FIRE MANANGEMENT
   Discussion and possible action by the Environmental Committee regarding the SOQs received from the RFQ for Fire Management Plan.

4. New Business: None
   Members of the public will be given the opportunity to address each scheduled item prior to Committee action. The Chairperson of the Committee may establish a time limit for members of the public to address the Committee on agendized items.

   A. ELECTION OF COMMITTEE CHAIR
   Discussion and possible action by the Environmental Committee regarding Committee Chair.

   B. SET DAY AND TIME FOR COMMITTEE REGULARLY SCHEDULED MEETINGS
   Discussion and possible action by the Environmental Committee regarding regularly scheduled meeting time and day.

   C. PREPARE A MULTI-MONTH CALENDAR
   Discussion by the Environmental Committee regarding the preparation of a multi-month calendar to look-ahead at least 3 months.

5. Informational Material: None.

6. Adjournment

In compliance with the requirements of Title II of the American Disabilities Act of 1990, the San Lorenzo Valley Water District requires that any person in need of any type of special equipment, assistance or accommodation(s) in order to communicate at the District's Public Meeting can contact the District Office at (831) 338-2153 a minimum of 72 hours prior to the scheduled meeting.

Agenda documents, including materials related to an item on this agenda submitted to the Committee after distribution of the agenda packet, are available for public inspection and may be reviewed at the office of the District Secretary, 13060 Highway 9, Boulder Creek, CA 95006 during normal business hours. Such documents may also be available on the District website at www.slvwd.com subject to staff's ability to post the documents before the meeting.

Certification of Posting

I hereby certify that on January 13, 2020 I posted a copy of the foregoing agenda in the outside display case at the District Office, 13060 Highway 9, Boulder Creek, California, said time being at least 24 hours in advance of the special meeting of the Environmental Committee of the San Lorenzo Valley Water District in compliance with California Government Code Section 54956.

Executed at Boulder Creek, California, on January 13, 2020.

_____

Holly B. Hossack, District Secretary
San Lorenzo Valley Water District

MEMO

To: Environmental Committee

From: District Manager

Subject: District Logo

Date: January 15, 2020

Subject: Request for Qualifications San Lorenzo Valley Water District Fire Management Plan

Recommendation:

It is recommended that the Environmental Committee review and comment on the attached 2 Statements of Qualifications, to provide the San Lorenzo Valley Water District Fire Management Plan in accordance with request for qualifications.

Background:

At the December 12, 2019 Environmental committee meeting the committee reviewed the Request for Qualifications (RFQ) to provide professional services to the District in developing a Fire Management Plan.

In response to the advertised RFQ the District received two proposals as follows;

- Panorama Environmental
- Dudek

It is recommended that the Environmental Committee review and comment regarding the attached 2 Statements of Qualifications to provide the San Lorenzo Valley Water District Fire Management Plan.

Panorama Environmental, Inc.
with Spatial Informatics Group, LLC

Statement of Qualifications to Provide Professional Services to the San Lorenzo Valley Water District for the Fire Management Plan

December 19, 2019

717 Market Street, Suite 650
San Francisco, CA 94103
650-373-1200
www.panoramaenv.com

PANORAMA ENVIRONMENTAL, INC.

Table of Contents

List of Attachments

1.COVER LETTER

December 19, 2019

Ms. Holly Hossack
District Secretary
13060 Highway 9
Boulder Creek, CA 95006

Dear Ms. Hossack,

Panorama Environmental, Inc. (Panorama) is excited to present our Statement of Qualifications (SOQ) to provide professionals services to the San Lorenzo Valley Water District (District). We understand that the District is seeking a consultant for the development of a Fire Management Plan that addresses fire risks, identifies assets and resources to protect, and includes detailed fuel reduction prescriptions and mitigations, including costs and funding options to implement the activities on their lands within the San Lorenzo River Watershed.

We are very interested in this project because we believe that we can bring a highly qualified team with very relevant, diverse skills and experience to the District. Panorama has partnered with Spatial Informatics Group, LLC (SIG) to provide the requested services. We have prepared a detailed proposal that includes:

- **Background:** A summary of our firms' experience and expertise on wildfire management and planning and fire hazard mitigation; Our understanding of the project and an approach based on our experience on similar projects.
- **Firm Experience:** Our experience in the last 7 years on similar projects, including our work with the Midpeninsula Regional Open Space District on their Wildland Fire Resiliency Program.
- **Staff Experience:** A summary of our team organization and management and a brief summary of our key team members. Resumes are presented in an attachment.
- **Subconsultants**: A summary of our key subconsultants experience and expertise.
- **References:** A list of references.

I will be the contact on this proposal and am legally authorized to represent and enter contracts for Panorama. My contact information is provided in my signature line.

We are excited to propose on this project. Please feel free to contact me with any questions about our SOQ. We have included a rate schedule under separate cover. We look forward to hearing from you.

Sincerely,

Tania Treis, Principal and President
Panorama Environmental, Inc.
717 Market Street, San Francisco, CA
P: 650.340.4829 E: tania.treis@panoramaenv.com

2. BACKGROUND

Proposed Team

Panorama Environmental, Inc. (Panorama) is excited to present our team to the San Lorenzo Valley Water District (District) on this important project. Our team has exactly the experience required to prepare a Fire Management Plan for the District and is preparing a similar plan for the Midpeninsula Regional Open Space District (Midpen). Panorama would be responsible for the services rendered. We propose to partner with Spatial Informatics Group, LLC (SIG) as our primary subconsultant. SIG provides the technical expertise in wildland fire and fuels methods and practices, risk assessment, modeling, treatment design, and costing. Panorama provides the overall team and project management, expertise and skill in report writing, program development, planning and policy analysis, community outreach, and California Environmental Quality Act (CEQA) compliance. Panorama managed the preparation of a similar vegetation management plan; the Biodiversity, Fire, and Fuels Integrated Plan , for the Marin Municipal Water District (MMWD) and has extensive experience working with other California water districts including Santa Clara Valley Water District, East Bay Municipal Water District, and the San Francisco Public Utilities Commission.

We have also included a few other specialty subconsultants who would augment the capabilities of our team, including Prometheus Fire Consulting, LLC, Fire Poppy Consulting, LLC, Nomad Ecology, and Basin Research Group.

Primary Consultant: Panorama Environmental, Inc.

Panorama offers government agencies and private entities expertise in multi-disciplinary environmental services and planning. Panorama is a privately-owned California S-Corporation with two owners, Tania Treis and Susanne Heim, and has been in business as Panorama Environmental, Inc. since 2011. Our firm's history, however, extends back to 1983, as MHA Environmental Consulting and to 2007 as RMT, Inc. Panorama is certified as a small business enterprise (SBE), woman-owned and minority-owned business enterprise (WBE/MBE), disadvantaged business enterprise (DBE), and woman-owned small business (WOSB). We have 23 employees and our headquarters is located at 717 Market Street, Suite 650, San Francisco, CA 94103. We also maintain a satellite office in Sacramento, CA, at 1722 J Street, Suite 218. Panorama's corporate structure includes two principals; six experienced project managers, each with 5 to 20 years of experience; several staff planners and analysts; a Geographic Information Systems (GIS) specialist; and administrative help. We also have in-house technical specialists in the areas of biology, visual resources, air quality, noise, fire ecology, and public facilitation.

Our key areas of expertise are California Environmental Quality Act (CEQA)/and National Environmental Policy Act (NEPA) compliance and permitting, but we have a special niche in strategic project definition and program development. We have managed and led the development of large-scale fire management plans, engineering and maintenance programs and plans, and water and groundwater programs. We utilize our expertise to integrate our partners' technical analyses into comprehensive, cohesive, and well-written documents. We provide the overall communication, tracking, and review to ensure the final deliverables exceed all expectations. Our team is particularly adept at describing complex technical information to stakeholders, the public, and decision makers.

Panorama's expertise for wildland fire programs and plans includes the development and preparation of fire management plans in high-fire-prone areas around the San Francisco Bay, including for 22,000 acres in Marin County for

MMWD, and on the over 64,000 acres on the San Francisco Peninsula for Midpen (a project with SIG). We have also prepared the controversial Environmental Impact Report (EIR) for the UC San Francisco's Vegetation Management Plan for the Mount Sutro Reserve and provided the revisions to the plan based on the EIR outcome. We recently provided the biological surveys and technical expertise for a fire management plan for the City of Redwood City and we are leading efforts with SIG to define a Wildland Fire Mitigation Plan for Alpine County. Our vegetation management and wildland fire planning experience is complemented by our extensive experience with water districts, including Marin Municipal Water District, East Bay Municipal Utility District, Montara Water and Sanitary District, Santa Clara Valley Water District (Valley Water), and the San Francisco Public Utilities Commission.

KEY FIRM INFORMATION

Corporate Structure: Corporation
Year Founded: 2011
Ownership: Tania Treis and Susanne Heim
Headquarters: 717 Market Street, Suite 650, San Francisco, CA 94106
Operational Track Record: Panorama has an exceptional operational record. We have maintained a stable business from their first year, with a consistent annual revenue and profitability over the last 8 years. They easily manage, on average, over 40 projects of varying sizes at any one time. Panorama has operated profitably since our start. We maintain a formalized corporate financial system that includes an accounting system run by a corporate Controller. **Panorama has no bankruptcies and no contracts terminated, and no contracts in default or that resulted in litigation or arbitration in the last 5 years.**

Partner: Spatial Informatics Group, LLC

While SIG would be primarily a subconsultant to Panorama, their technical expertise would be integral to the plan development, and as such, we see them as a partner firm in this effort. We have had a similar partnership in the preparation of the Alpine County Fire Hazard Mitigation Plan and Midpen's plan. SIG is a group of scientists with expertise in environmental fields ranging from ecology and forestry to natural resource economics. SIG provides a wide range of geospatial services and products integrated with professional consulting services in areas such as ecology, forestry, soils science, risk and hazard management, environmental economics, and urban and regional planning. Their people are experts in using tools such as Geographic Information Systems (GIS), remote sensing (including LiDAR analyses and data collection using unmanned aerial vehicle [UAV]), spatial data mining, and dynamic spatial modeling. Their analysts are also specialists in relevant fields such as landscape ecology and forestry. With experience in closely integrating spatial analysis with substantive research, SIG's team offers an integrative analytical approach, combining spatial analysis with scientific, ecological, and economic knowledge to understand the cumulative effects of management choices on the short and long-term stability of natural resources and ecosystem functions.

SIG has completed several projects directly related to the proposed project, including preparation of over 22 Community Wildfire Protection Plans (CWPPs), on the ground planning and implementation of hazardous fuels reduction projects, and detailed assessments of fire risk and hazards for multiple projects across California. Regional experience includes vegetation management planning for fuel reduction projects for the University of California (UC) at Berkeley and for development of Midpen's comprehensive Wildland Fire Resiliency Program covering over 64,000 acres, which is just north of the District's service areas.

Members of their team work extensively with Fire Safe Councils, federal, and local government landowners to develop and seek funding for collaborative fuels reduction projects. Team members who would work on this project have both led and been co-authors on several peer reviewed publications related to fuel treatments, wildfire emissions, and fire hazard and risk mitigation. In addition, our Project Manager is a current Registered Professional Forester (RPF).

SIG would support the District with technical expertise, information, and other proficiencies in all areas of forestry and wildland fire risk assessment, planning, and mitigation. They would integrate our vast background in California forest research, management, and policy development to help the District develop a Fire Management Plan that identifies the wildfire risk to residents and cultural, biological, and water assets, and defines a process for mitigating those risk.

Project Understanding and Approach

Project Understanding

The San Lorenzo Valley Water District is a special district that supplies water in the San Lorenzo River Watershed in Santa Cruz County, as defined under Division 12, Chapter 5, of the California Water Code. The District owns and manages more than 2,000 acres of rural watershed land, including one contiguous piece of land of approximately 1,620 acres for water supply and watershed protection on Ben Lomond Mountain, 252 acres in the Felton/Fall Creek watershed, and another 325 acres in the Zayante Creek area.

Fire suppression has increased the chance of a major fire in the San Lorenzo River watershed, like many other areas of California. Within the last decade, fires have occurred in adjacent watersheds. Under the right conditions, a similar watershed-scale fire could occur in the San Lorenzo River watershed. Such a fire could impact watershed health and water quality from altered surface hydrology, increased sedimentation, chemical impacts from fire retardants, and result in habitat degradation. It could also severely damage infrastructure, structures, natural resources, cultural resources, life, and property.

The District's forested watershed lands have not been professionally assessed for fire hazard or for risk of ignition. Invasive populations of French broom and acacia, and sudden oak death (SOD) have increased the risk of catastrophic fire. CalFire has rated most land in the District's service area on the west side of the San Lorenzo River as high fire hazard.

The District currently has no formal fire management program for District-owned lands. The District's existing policies of controlling invasive exotic species and managing its forest lands toward old growth contribute toward reducing the risk of a catastrophic fire, but additional fire protection, particularly of ingress and egress routes is needed. Fire management on District-owned lands needs to be tailored to the different plant communities, slopes, slope aspects, neighboring properties, and soil types unique to it's properties.

Existing stands of invasive exotic species have not been surveyed and mapped on District properties. The most serious infestations of invasive exotic species, especially acacia and French broom, occur on the District's Olympia watershed property, which is also home to the federally endangered sandhills and sand parkland communities. The combination of invasive exotic species and endangered species complicates fire management planning, yet the benefits of fire management are clear, both in terms of reducing the fuel load and in terms of enhancing the native habitats.

The District is looking to hire a consultant team to develop a Fire Management Plan in accordance with it's Watershed Management Plan, Chapter 5: Fire Management Policies.

Project Approach

Overview

We reviewed the list of elements to be include in the Fire Management Plan, as presented in the RFQ. Based on our experience on similar, and nearby projects, we have divided the work into four components or tasks, each described here.

Component 1: Baseline and Fire Hazard Risk Assessment

The first component of the project will be to develop the fire hazard risk assessment by developing an understanding and inventory of the baseline conditions, including understanding where and how fire suppression has led to increased risks;

mapping standing SOD-killed tanoak and invasive species in locations where it poses an elevated fire risk; identifying the high value resources and assets (HVRAs) to protect under the plan (i.e., structures, roads and emergency access, water infrastructure and resources, biological resources, cultural resources); and modeling fire hazard risks and risks of ignition to identify where and the types of fuel reduction and treatments to be implemented to minimize risks.

The approach would start with baseline and existing data collection. Data collection would be accomplished through review of existing GIS data and documentation. Spatial data would be obtained from sources such as existing CWPPs, CALFIRE Hazard Severity Maps and other state level data, known or planned fuel reduction projects, available infrastructure (roads, utilities, water storage tanks, and hydrants), and structure locations. Where existing data is not available, and to inventory ecosystems, including SOD-deaths, our team can use unmanned aerial vehicle (UAV) flights and LiDAR analyses to collect cover data over large areas. SIG FAA licensed pilot(s) can take 360-degree overview shots of project sites. interest. Each flight will generate a 360 map that can be easily viewed and panned online. These images can generated in 1-2 hours. SIG maintains a fixed wing UAV which is capable of generating high resolution, high accuracy imagery and maps that are compatible with ESRI GIS software. See this video for more information: https://www.youtube.com/watch?v=hSt9HRE7SnU

SIG is able to process existing LiDAR image to generate detailed vegetation structure (canopy cover, height, density) and topography. SIG maintains a full suite of field inventory equipment and trained staff who can collect any type of vegetation and fuels data; this data collection can be integrated with UAV or satellite based imagery as well. SIG can help coordinate the acquisition of new LiDAR data, if desired.

Once we understand the resources, our team would collaboratively identify the HVRAs, work with the District and fire agencies to complete and prioritize the most important assets to protect. Existing spatial data relevant to pre-fire planning, infrastructure, evacuations, and fuel treatments would be inventoried and aggregated into single GIS geodatabase.

We would then model the fire hazards and risks. Wildfire behavior modeling tools and techniques would be used, such as Calmapper, LANDFIRE, and FLAMMAP. FLAMMAP can be used to determine flame lengths, rate of spread, and fire type. Mapping of the HVRAs (including ingress/ egress routes) would then examined against the fire hazards and behavior analysis to determine focus areas for fuel treatments to mitigate risks as part of component 2 of the project.

Component 2: Fuel Risk Reduction and Hazard Mitigations

Based on the areas of moderate and high fire risk, the type of land use and vegetation in those areas, and the resources or values to be protected (such as the rare sandhills plant communities, redwood communities, and listed animal species), the fuel risk reduction and hazard reduction practices to protect public health and safety, protect natural resources, and to reduce the impact of wildland fire would be identified.

The goals of fuels management would be determined and should generally address safe ingress/egress, defensible space (including standards for adequate fire clearance around District structures and facilities), ignition prevention and containment, and ecosystem health. Practices must also consider the environmental impacts. We would then identify projects and priorities. Treatment standards would be defined for each vegetation type and the treatment methods would be determined. Treatment methods could include manual removal, mechanical removal, use of grazing, prescribed fire, and herbicide use. Best management practices would also be identified to protect natural, water, and cultural resources and to ensure safety during the work.

An emergency access plan would also be prepared that identifies, with input from responsible fire agencies and neighboring public agencies, essential roads for wildland fire access and the recommended maintenance of those roads, including improvements such as surfacing, additional turnouts, and safety zones.

As part of this task, our team could also use Portal for ArcGIS to provide a web map interface for District staff to interact, display, and print their data. The Portal could display data from either an in-house GIS or a SIG managed GIS. Web maps are customized to display data tailored to a specific plan or task. Web maps can be made visible for select staff, visible to responsible fire agencies, or the public.

Component 3: Outreach and Collaboration, Grant Funding, and Defensible Space Clearance Permit System

Outreach to overlapping, neighboring, and partner agencies will be important to the plan's success. The outreach component of this project could include the development of an outreach plan/program that defines the methods to solicit and consider feedback and to document the process, as well as to coordinate with surrounding entities to identify fire issues on adjacent lands and access requirements. This task would include fostering and maintaining interagency fire management partnerships.

As part of this component our team would also identify the timing, costs, and sources of funding available or funding opportunities for implementation of the Fire Management Plan.

Our team would also develop a permit system for adjacent landowners to maintain defensible space clearance surrounding homes and qualifying structures. Our team is very familiar with such a system and would use Midpen's similar permit system for defensible space as a model.

Component 4: Documentation of Plan

Documentation of the background, modeling and methods, the recommendations for fuel reduction and access road improvements (comprised of treatment recommendations and monitoring, as appropriate), the emergency response and post-fire response, and estimated costs and sources of funding, the outreach and collaboration that went into development of the plan, and the adjacent landowner permit system would be included in the Fire Management Plan. Our team has several models to help us shape this plan, including the plans that our team prepared for the MMWD, Midpen, and Alpine County.

OPTIONAL Component 5: CEQA Compliance

The Fire Management Plan would likely require review under CEQA before it can be adopted and implemented. Programs, like this one, are typically addressed through a programmatic CEQA document. The CEQA document would evaluate the elements of the program and specific projects and activities against the existing environment and would identify mitigation as needed to reduce the potential for environmental effects. A mitigation monitoring and reporting program would also be developed with the final CEQA document. Often, technical studies and surveys are required (e.g., biological, cultural) to understand the impacts. Our approach is to understand the constraints as we develop the plan, and to mitigate impacts to sensitive resources through design.

While programmatic, vegetation treatments can often still be performed at the completion of the CEQA process if enough detail on location and type of impact is provided. Our team has experience preparing the CEQA review for several fuel reduction/hazard mitigation projects covering large areas of land.

3. FIRM EXPERIENCE

Overview of Experience

The Panorama team, with SIG, brings the District a unique combination of experience in fire hazard risk assessment, **including for water districts,** and forestry to address fire hazards modeling, assessment, and design of hazard mitigations, as well as the experience with the environmental considerations needed to ensure resource values and legal requirements are met. Panorama and our primary subconsultant, SIG's, experience is synergistic and we have a well-established working relationship between the firms and the specific team members proposed here.

Our Experience on Fire Hazard Risk Reduction Assessments and Hazard Mitigations

Our team's most relevant experience is our current work with Midpen on their Wildland Fire Resiliency Program. Most of our proposed team members have a similar role in that program. Because of the program's geographic and contextual similarities to the District's plan, we have included a more in-depth description of our team's work on that project on the following page.

Other recent Bay Area experience for Panorama and our partner, SIG, includes for MMWD (another water district), UC Berkeley's Hill Campus in the East Bay, and UC San Francisco's Mount Sutro Reserve in the City of San Francisco. Our Panorama and SIG collaborative team is also currently providing very similar services to Alpine County for their Wildland Fire Hazards Mitigation Plan, where SIG is providing the risk assessment and defining the fuel treatments and Panorama is preparing the documentation, the outreach, and the CEQA and NEPA review documents.

Panorama, additionally, brings the experience of working with water districts that allows us to understand the mission of water supply, the importance of wildfire planning to protect water supply and quality as well as water infrastructure, and the balancing of operations with sensitive resource protection.

SIG brings extensive technical experience, having worked directly with private land owners, large forest product companies, non-profits, federal, local, and state agencies assisting them in wildfire risk assessment, mitigation, and collaborative planning. SIG completed CWPPs for Nevada County and the communities of Applegate, Dorris, and all of El Dorado County. They also completed the 2008 assessment, "Preliminary Biomass Fuel Availability and Feasibility Review for Siting Biomass Power Facilities in El Dorado County, California" for the El Dorado Fire Safe Council. In this partnership, SIG completed all fire modeling, GIS, transportation network analysis, and geo-spatial summaries included in the reports. SIG also completed a detailed fire risk assessment for the entire Lake Tahoe Basin.

Both firms have provided services in the Santa Cruz area. SIG flew aerial imagery and is installing permanent research plots for the beginning of a long-term project with Save the Redwoods, Sempervirens Fund, and Hamey Woods Forestry. One project goal is to restore old-growth redwood characteristics. Due to topography, proximity to the ocean, elevation and plant communities, the micro-climate in this 120-acre parcel might allow redwoods to persist despite climate change. The SIG UAV team created a 360 degree aerial image of the site showing ecological characteristics that will help understand and manage the area, as shown here: https://viewer.hangar.com/360?assetId=/mrpB9qpY

Panorama's and SIGs relevant projects from the last 7 years are summarized on the following pages.

PROJECT HIGHLIGHT

Midpeninsula Regional Open Space District Wildland Fire Resiliency Program

Years: 2018– present
Contact: Coty Sifuentes-Winter
Phone: 650.691.1200
Email: csifuentes@openspace.org
Team: Jason Moghaddas, Scott Conway, Carl Rudeen, Tania Treis, Rita Wilke, Phil Dye, Sasha Berhleman, Heath Bartosh and Nomad Ecology, Colin Busby and Basin Research Associates

This comprehensive program covers over 64,000 acres of preserve wildlands managed by Midpen, including all 26 of the District's preserves. SIG and Panorama were each selected for a 3-year contract to assist in defining and preparing the program and associated CEQA reviews. The program consists of several components, including a Vegetation Management Plan that includes the prescriptions for fuelbreaks and fuel reduction areas constructed along ingress-egress routes and key areas to protect infrastructure and assets; a Prescribed Fire Plan that defines prescribed fire units and methods; a Resource Advisory Map and Wildland Fire Pre-Plan; and a Monitoring Plan. The program identifies ingress/egress, emergency access, other constraints, sensitive natural and cultural resources, infrastructure, and important considerations for firefighters during a fire. The program also includes revisions to the District's Resource Management Policies to support the program. SIG is defining fuel management and prescribed burn units through extensive field mapping using unmanned aerial vehicles (UAVs) and is developing the prioritization tools to identify the projects to be implemented based on modeling. The program includes the habitat types, the methods used for fuel treatment in each habitat types, the implementation tools (including manual, mechanical, grazing, prescribed fire, and herbicides), an implementation plan and methodology to prioritize projects, and an estimated costing.

- ✓ Defining fuel treatments over a large area and prioritizing using modeling
- ✓ Coordinating input of multiple parties including fire districts, CALFIRE, and other jurisdictions with over 25 meetings scoped
- ✓ Defining and leading stakeholder and public outreach meetings and workshops
- ✓ Incorporating environmental considerations when defining and prioritizing fuel treatments
- ✓ Preparing CEQA documentation
- ✓ Collaborative effort of same staff from SIG and Panorama
- ✓ Midpen has an existing defensible space permit program for adjacent neighbors that our team understands

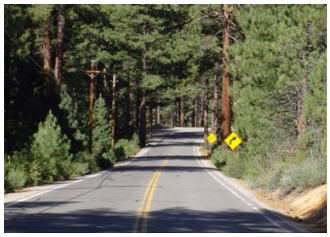
SIG and Panorama are working integrally with Midpen's staff through all phases of development of the program, including numerous consultations with partner agencies, tribal entities to understand and integrate cultural burning practices, CALFIRE, and fire protection agencies. Work to-date has included developing a policy gap analysis and recommendations for revised policies that were presenting in a report to the Board of Directors; developing the Vegetation Management Plan through coordination with Midpen's facilities teams for the Preserves, and presenting the plan to the Planning and Natural Resources Committee; developing the Monitoring Plan; developing the program-level Prescribed Burn Plan; designing and organizing three public outreach efforts with Midpen and numerous partner agencies to present the overall program and goals to the public and receive feedback; and defining the appropriate CEQA review and identifying the schedule that will drive the project. Panorama is preparing the documentation, including the Program, which will serve as the Project Description for the Program EIR. The Program EIR will address the vegetation management actions for public safety and ecosystem resiliency in enough detail that work can be carried out immediately upon completion of the EIR. A Tiered EIR will be prepared to address specific prescribed burn actions that have a longer planning horizon. Panorama has a team of biologists, soil scientist, hydrologists, recreation, and cultural resources specialists providing input for the prioritization of projects as well as to assess the impacts of the program, monitoring, and specific initial fuel treatments. Completion of the plan and EIR will allow Midpen to apply for grants to perform the work, potentially in collaboration with neighboring jurisdictions.

Marin Municipal Water District Biodiversity, Fire, and Fuels Integrated Plan and EIR

Panorama prepared the BFFIP in close collaboration with MMWD staff and prepared the associated EIR to address vegetation management activities on 22,000 acres of watershed lands in Marin County. The Final EIR was certified and the Plan approved in November 2019. The BFFIP includes definition of fuel management zones for both infrastructure (roads and structures) and for natural resources. Panorama, with MMWD, identified 27 management actions, the locations where they would occur, and the prioritization of the actions. A detailed 5-year plan was included in the BFFIP, which included a costs analysis, total acreages to treat by zone, and performance criteria to measure the success of treatments annually with adaptive management as needed.

Extensive mapping was performed to understand biological, cultural, soil and slope, noise, visual and other constraints. The plan addressed areas of increased threat due to extensive invasion of French and scotch broom, among other weeds, and of SOD. The program included a program to map and treat SOD for forest resiliency. The EIR addressed impacts from these fuel treatments by habitat type and fuel management method. Panorama led outreach efforts for the plan and EIR. SIG is working with MMWD and it's partners to define projects for funding under the various grant programs and recently submitted a grant for fuel treatments in the latest CALFIRE grant cycle. The documents for this project are available here: https://www.marinwater.org/455/Biodiversity-Fire-and-Fuels-Integrated-P

Alpine County Wildfire Hazards Mitigation Plan



Fuels reduction projects to reduce the risk of wildland fire are a high priority in Alpine County and several have been undertaken or are ongoing, including neighborhood fire breaks and larger scale fuels reduction projects on federal lands. Fuel reduction projects and priorities have also been developed in a CWPP for the County. The County received a grant to prepare a more detailed hazard mitigation plan.

SIG and Panorama were selected and are preparing the Wildfire Hazards Mitigation Plan for Alpine County. The plan includes an evaluation of fire hazard risks through modeling, identification and ranking of HVRAs through a collaborative process with a steering committee, identification of three priority projects including defining the specific fuel treatments, and defining the costs associated with those treatments. SIG is preparing the modeling and analyses and Panorama is leading the documentation, outreach effort strategy, and the CEQA and potentially, NEPA documentation for the project. The plan will include the modeling results and fire hazard risks, the important infrastructure and resources to be protected, and the detailed implementation plan of the projects.

UC San Francisco Mount Sutro Vegetation Management Plan and EIR

Panorama prepared the EIR for UCSF's vegetation management program for the Mount Sutro Reserve. The technical analysis included a detailed scenario of tree removal, based on the plan's fuel treatments, necessary to assess various types of impacts including fire hazards and carbon sequestration. Panorama provided revisions and updates to the Vegetation Management Plan prepared by the forester, and performed detailed fire behavior modeling using FLAMMAP.

UC Berkeley Hill Campus Vegetation Management Plan and EIR

SIG provided plan review for UC Berkeley's Hill Management Plan and EIR. This plan was focused on reducing fire risk on UC Berkeley owned lands by removing eucalyptus.

El Dorado County CWPP

SIG, working with the El Dorado Fire Safe Council, developed a comprehensive CWPP for the west slope of El Dorado County, California. The plan was based on the results of a landscape-scale community risk assessment and treatment prioritization strategy with emphasis on establishing local fuel management areas that are integrated with the existing treatment network. SIG established "logical" fuel management areas given the large area considered. Analytical tools were developed, similar to those proposed for this project, to prioritize projects. The goal was to provide maximum community protection at the lowest potential costs. CAL FIRE Fire Hazard Severity zone maps were assessed to identify the communities at risk, which included over 17 communities. All known, existing, and planned fuel treatments were mapped and a fire risk assessment was performed in order to identify and prioritize new fuel treatments. The fuel prescriptions were defined based on the team's extensive on-the-ground experience and knowledge of proven-effective methodologies. Once projects were identified, SIG identified the CEQA/NEPA and permitting considerations for the projects. SIG identified a stakeholder "map" to understand all of the participants and define what information was needed from each.

An Assessment of Fire Risk for Nevada City and Grass Valley, CA

SIG is working with CALFIRE on an assessment of wildfire risk to the communities of Nevada City and Grass Valley. The project includes developing potential fuel treatment locations for risk mitigation as well as an assessment of factors affecting structure loss during the 2018 Camp Fire.

California's 4th Climate Assessment: Fuel Treatments for Forest Resilience & Wildfire Mitigation

SIG has prepared reports for California's 4th Climate Assessment, published in 2018. For this report, SIG reviewed what is known about the effects of fuel treatments on stored forest carbon, wildfire risk and wildfire emissions in California's forests and summarized geo-spatial data gaps that need to be filled in order to make good fuel treatment decisions that both increase forest resilience and carbon sequestration. In addition to supporting the assessment, the report provides a scientific basis for developing carbon offset methodologies that could generate revenue to implement beneficial climate projects in California, The full report is available here: http://www.climateassessment.ca.gov/techreports/forests-wildfire.html

Assessing Extreme Fire Risk in California for the Public Utilities Commission

SIG scientists worked with CALFIRE to assess the top 2 percent worst fire weather conditions for the entire State of California. These conditions were then used to perform 1,000 unique, high-resolution wildfire simulations per cell; simulations were based on the USGS-supported LANDFIRE 1.3 dataset. In total, SIG scientists simulated over 100 million ignition events around the state of California under extreme historical weather conditions. This information was then used to create an updated public statewide fire threat map adopted by the Public Utilities Commission in December, 2017. The maps and other information are available here: https://www.cpuc.ca.gov/firethreatmaps/

4. STAFF EXPERIENCE

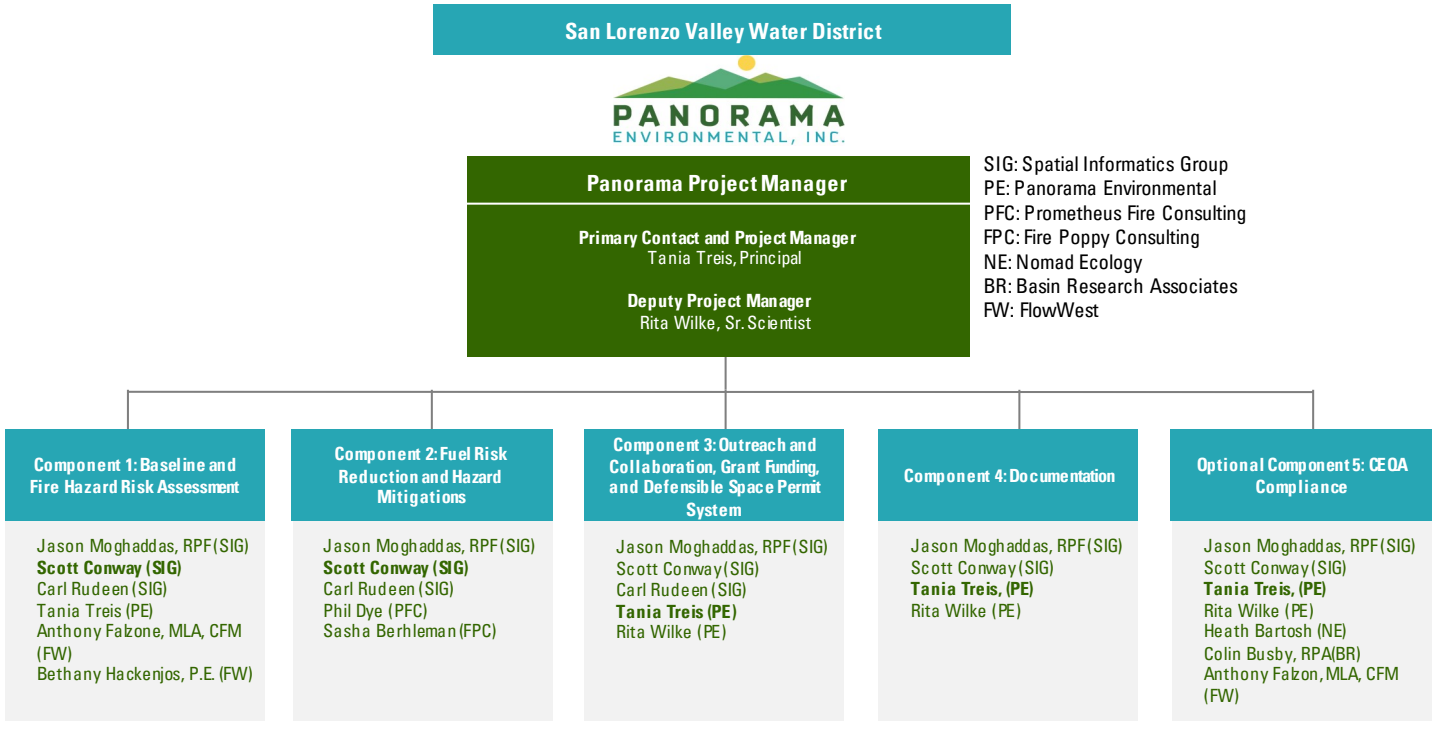
Key Members of the Consultant DevelopmentTeam

Team Organization and Management

We have composed a Consultant Development Team that includes a Project Manager and key point of contact from Panorama, Tania Treis, and several key technical team members.

Each technical team member is responsible for certain components of the program, based on their area of expertise and experience. Tania would oversee all work products and be the primary contact and day-to-day manager for both the internal and client team. Tania would ensure that the workplan is implemented and that timelines and budgets are met. She would be the central intelligence of the project, ensuring that all team members receive the information that they need to complete their component. A brief description of each key team member (Tania Treis, Rita Wilke, Scott Conway, and Jason Moghaddas) is provided on the following page. Resumes for each team member are included in **Attachment A.** The resumes focus on their expertise, education, and, specifically, project experience that highlights why they were chosen for this project.

Organizational Chart by Task



Panorama and SIG KeyTeam Members

Tania Treis, MA, MS, Principal—Project Manager

Tania has 18 years of experience managing a wide range of projects across California. She is a Principal and owner of Panorama. She has particular expertise in leading the plan definition and environmental review for wildland fuels reduction projects. Tania's strength is in solidifying and motiving teams, leading the team through project definition, presenting complex ideas and analyses in a way that is concise and understandable to the reader and decision-maker, and leading outreach and agency consultation and coordination. Tania is the Project Manager for Panorama for the Midpen Wildland Fire Resiliency Program and is leading the documentation of the program. Tania also led the preparation of the Biodiversity, Fire, and Fuels Integrated Plan for MMWD, and the associated Program EIR. Tania is also the Project Manager for the Alpine County Fire Hazards Mitigation Plan. Tania has been working on wildland fire planning projects since 2011.

Rita Wilke, Senior Environmental Scientist—Deputy Project Manager

Rita has 10 years of experience in the environmental field and leads Panorama's Sacramento Office. She is a skilled project manager for projects requiring environmental review under and involving multiple agencies and technical studies. Rita has managed environmental compliance for a variety of projects including transmission, public works, in addition to working with Tania on various wildfire and fuels management projects (Midpen's Wildland Fire Resiliency Program, Alpine County's Fire Hazard Risk Mitigation Plan). Rita's strength is her ability to bring multiple parties and agencies together to come to a consensus on project direction, including federal, state, and local agencies. She has experience on projects all over California.

Scott Conway, Forest Ecologist—Lead Technical

Scott Conway brings a unique combination of natural resource education, training, and management experience to successfully navigate forest and fuels management challenges. Scott began his career with the Forest Service. He assimilated a range of practical management experience in everything from implementing complex timber sales to biological surveys to prescribed and wildland fire. More recently, Scott worked at the Pacific Southwest Region's Remote Sensing Lab where he pioneered LiDAR and geospatial dataset application solutions for managers and decision makers in California, Nevada, and the Pacific Islands. In his current capacity as a Forest Ecologist with Spatial Informatics Group, Scott continues to lean on his deep set of experiences, education, and training to perform careful forest project assessment, analysis, implementation, and monitoring so clients to create defensible communities and resilient forests.

Jason Moghaddas, RPF, Director of Natural Hazards Team—Technical Oversight and PM

Jason Moghaddas brings over 20 years of experience in forestry, fuels reduction, and natural resource project planning and management. Jason is a recognized leader in the field having worked for or on projects with SIG, the Feather River Land Trust, the Plumas National Forest, and El Dorado County Fire Safe Council. Jason has applied for and received Resource Advisory Committee funding for multiple fuel reduction projects. Through his on-going work on this and other studies, Mr. Moghaddas had been a lead or co-author on over 20 published scientific papers. In addition to a strong research background, Mr. Moghaddas brings the practical experience of being a current Registered Professional Forest (#2774) along with extensive experience as a wildland fire fighter and wildlife field technician.

5. SUBCONSULTANT'S EXPERIENCE

Subconsultant Model and Oversight

Panorama has included a few other technical subconsultants to augment our team's experience, capabilities, and capacity. These team members are all working with Panorama and SIG on the Midpen and Alpine County wildfire planning projects.

We have included additional expertise in fire planning, fire ecology and fuel treatment design; prescribed burning; biological resources review, including botany; hydrology and geomorphology; and all aspects of cultural, historic, and archaeological resources review and protection, including for fuel management projects. A very brief summary of the key staff from each of these firms is provided on the next page, and resumes are provided in **Attachment A.**

Subconsultants andTheir Experience

Prometheus Fire Consulting, LLC

Prometheus Fire Consulting is a California Limited Liability Corporation owned and operated by Phil Dye. As professionals in fire planning and management, Prometheus assists a variety of landowners in recommending pre-wildfire mitigation measures as well as the use of fire as a resource management tool. They provide suggestions such as fire control line placement and design, infrastructure defense strategies, and proposed locations of fuels reduction work. Prometheus is working with SIG (and Panorama) on the Wildland Fire Resiliency Program for Midpen.

Fire Poppy Consulting, LLC

Fire Poppy Consulting, LLC is a dynamic fire and conservation management organization owned and operated by company principal Sasha Berleman, PhD. They are a leader in prescribed burn planning and coordination for diverse organizations and agencies, including burn plan development, outreach and communications, pre-fire mapping and assessment, and ecological monitoring/analysis. Their firm provides expertise in fire ecology, wildland fire science, plans and maps development, and relationship management.

Nomad Ecology, LLC

Nomad Ecology, LLC (Nomad) is a biological and ecological consulting firm . Nomad provides a full suite of natural resource related surveys, products, and regulatory assistance to comply with all applicable state and federal environmental regulations. They conduct natural resource analyses ranging from due diligence to comprehensive biological resource assessments; impact analyses; and restoration, mitigation, and resource-management plans. They are also working with Panorama and SIG on the Midpen Wildland Fire Resiliency Program.

Basin Research Associates

Basin Research Associates (Basin) was founded in 1977 to provide cultural resources research and management expertise throughout California and Nevada and assists clients in complying with the regulatory requirements of NEPA, the National Historic Preservation Act (NHPA) and CEQA as well as agency-specific regulations and local requirements. Basin has worked with Panorama for nearly 2 decades, including on wildland fuel reduction plans.

FlowWest

FlowWest provides a wide array of services in watershed planning. They bring a wealth of relevant experience gained through extensive work managing and restoring West Coast rivers for two decades. FlowWest is especially well-known for their ability to translate ecological, hydrological, hydraulic, and fluvial geomorphic analyses into improved understanding and management of ecological functions and design of restoration projects.

Phil Dye, Principal

Phil Dye is the owner of Prometheus Fire Consulting. He is a 20-plus year veteran of the California fire service, serving on the City of Milpitas Fire Department (retired) and currently a member of the Spring Valley Volunteer Fire Department. He is qualified as a National Wildfire Coordinating Group (NWCG) Prescribed Fire Burn Boss. He has led over 50 prescribed fires across the nation. Currently Phil is helping on a range of projects in the San Francisco Bay Area, including pre-fire planning for Midpen.

Sasha Berleman, Principal, Wildfire Ecologist

Sasha earned her PhD in Wildland Fire Ecology at UC Berkeley. Sasha is currently an active member on the Redding Interagency Hotshot Crew and has extensive experience on the ground in fire management and prescribed fire. Sasha is currently providing consulting services across the Bay Area in ecologically applied fire and fuels management, prescribed fire, monitoring and outreach for clients including East Bay Regional Park District, Audubon Canyon Ranch, Sonoma County Forest Working Group, The Nature Conservancy, and the Fire Learning Network.

Heath Bartosh, MS, Senior Botanist and Principal

Heath is an owner of Nomad Ecology and a botanist with over 20 years of experience. Mr. Bartosh is considered an expert in the flora of the Bay Area and has conducted extensive botanical fieldwork throughout California, focusing on distribution, soil and geologic relationships, endemism, regional and local rarity, and habitat conservation. In 2009, he became a member of the 10-person Rare Plant Program Committee at the state level of the California Native Plant Society. In 2016 Mr. Bartosh became one of the first professional botanists to become a Certified Consulting Botanist in California through the Botanist Certification Program.

Colin Busby, RPA, Principal Cultural Resources Specialist

Colin Busby, owner of Basin Research Associates, has 40 years academic and cultural resources management experience involved with all aspects of cultural resource assessment and NEPA and CEQA regulatory compliance. Experience includes the design, direction and execution of the cultural resource components of EISs, EIRs, EAs and other investigations for federal, state and municipal governments, private industry, the military, and the scientific community in the western U.S. He has led over 600 projects throughout California and Nevada, including fuel management programs with Panorama.

6. REFERENCES

1. Shaun Horne, Watershed Resources Manager—Marin Municipal Water District
Phone: 415.945.1190
E-mail: shorne@marinwater.org
Projects: Biodiversity, Fire, and Fuels Integrated Plan and EIR; Ross Reservoir Slide Repair Project

2. Coty Sifuentes-Winter, Senior Resources Management Specialist— Midpeninsula Regional Open Space District
Phone: 650.691.1200
E-mail: csifuentes@openspace.org
Project: Wildland Resiliency Program

3. Brian Peters, Community Development Director—Alpine County
Phone: 530. 694.1361
E-mail: bpeters@alpinecountyca.gov
Projects: Alpine Fire Hazard Mitigation Plan

4. Diane Wong, Principal Planner—University of California, San Francisco
Phone: 415.502.5952
E-mail: Diane.Wong@ucsf.edu
Project: Mount Sutro Vegetation Management Plan

PANORAMA
ENVIRONMENTAL, INC.

Attachment A: Resumes

Tania Treis, Principal

Tania has 18 years of experience managing the CEQA/NEPA and permitting process for a wide range of projects across California. She is a Principal and owner of Panorama. Tania's experience and knowledge spans all technical topics covered under CEQA and NEPA. She has particular expertise in leading the plan definition, policy analysis, and environmental review for wildland fuels reduction projects, such as for the University of California's Mount Sutro Reserve. Tania's strength is in solidifying and motiving teams, leading the team through project definition, presenting complex ideas and analyses in a way that is concise and understandable to the reader and decision-maker, and leading outreach and agency consultation and coordination. Tania is the Project Manager for Panorama for the Midpen Wildland Fire Resiliency Program and is leading the documentation of the program, including the policy analysis and the four individual plans that comprise the program. Tania also led the preparation of the Biodiversity, Fire, and Fuels Integrated Plan for MMWD, and the associated Program EIR. Tania is also the Project Manager for the Alpine County Fire Hazards Mitigation Plan. Tania has been working at the intersection of CEQA and wildland fire planning since 2011. Tania is currently the co-owner and a Principal at Panorama where she oversees company operations including the financial, administrative, and information.

Marin Municipal Water District, Biodiversity, Fire, and Fuels Integrated Plan (BFFIP), Marin County, CA

As project manager, Tania managed the preparation of the BFFIP, which is a vegetation management plan for fuel reduction that covers over 22,000 acres in Marin County. Tania worked closely with Marin Municipal Water District to ensure that the BFFIP adequately addressed public concerns, that it is concise and clear, and that it facilitates the environmental analysis for the CEQA document. Tania added in goals, actions, and projects related to forest sustainability and treating Sudden Oak Death impacted areas. Tania also led the preparation of the EIR. She led the technical team and reviewed all technical analyses to produce the Draft EIR and Final EIR and authored the water quality and geology sections.

Tania is currently helping the district with aspects of the mitigation monitoring plan and annual reporting.

Midpeninsula Regional Open Space District Wildland Fire Resiliency Program, San Mateo and Santa Clara Counties, CA

The Midpeninsula Regional Open Space District is creating the Wildland Fire Resiliency Program to address wildfire risk in the District's over 60,000 acres of open space preserves. Tania is defining the non-fire fuels management plan, a prescribed fire plan, wildland fire pre-plan/resource advisor maps, and a monitoring plan in coordination with staff from Spatial Informatics Group. Tania also designed the format and content of three public workshops to present the program. Tania participated in numerous collaborative agency meetings including with CALFIRE, tribes, and other groups. Tania's has taken the team member's analyses and information to prepare the documentation of the plan.

As project manager, Tania is also responsible for the preparation of two EIRs.

HIGHLIGHTS

- Deep understanding of CEQA/NEPA, and resource permitting
- Frequent expert speaker for groups such as AEP and San Francisco Bar Association
- Technical expertise in hydrology, geology, biology, cultural resources, visual

EMPLOYMENT

Firm: Panorama Environmental
Title: Principal
Years with Firm: 8, 2011– present
Past Employment:
MHA Environmental, Env. Scientist: 2002-2007
RMT Inc, Manager and Sr. PM: 2007-2011
Elan Pharmaceuticals, QA/QC, 2001 -2002
Phone: 650.340.4829
E-Mail Address: tania.treis@panoramaenv.com

EDUCATION

- M.S., Geology, San Jose State University, 2011
- M.A., Biology, University of Pennsylvania, 2001
- B.A., Mathematical Biology, University of Pennsylvania, 2000

Coursework: Advanced coursework in ecology, statistics, geomorphology, geology
Scholarships and Awards:
University Scholar

PROFESSIONAL QUALIFICATIONS

- Wetland Delineation Training Program. 38-Hour, fulfilling U.S. Army Corps of Engineers Wetland Delineation Training Requirements
- Geographic Information Systems Analyst Certificate Program, Foothill College

MEMBERSHIPS AND AWARDS

- Association of Environmental Planners (AEP) Member
- Architecture and Engineering Business Leaders

University of California San Francisco Mount Sutro Reserve Vegetation Management Plan and EIR

UCSF initiated the process to develop a vegetation management plan for their 61-acre Mount Sutro Reserve since 2002. As project manager, Tania led the CEQA process for the project and oversaw the work off all technical experts including on issues pertaining to fire hazards, changes in slope stability and erosion, visual changes, changes to a historic landscape, and a detailed analysis of carbon sequestration from changes in tree cover in the forest. Tania worked closely with the RPF on the project to revise vegetation management prescriptions to address environmental concerns.

CPUC Santa Cruz 115kV Reinforcement Project Santa Cruz County, CA

This project involved the construction of a new 115kV transmission line in an existing corridor, to reinforce the line. Tania served as Project Manager. Tania provided advise on the appropriate CEQA review and designed and led several contentious public meetings. Tania oversaw the preparation of the Initial Study and then an EIR for the project. Key concerns included tree removal, impacts to listed and fully-protected species, and impacts to recreational areas, including regional parks.

Santa Clara Valley Water District Dam Maintenance Program (DMP) and Program EIR, Santa Clara County, CA

The project involved the development of the Dam Maintenance Program (DMP), which identified the full range of maintenance activities necessary for dam maintenance and described protocols and procedures for carrying out the activities, including inspections, repairs, surface maintenance including vegetation management, and preventative and corrective maintenance. Tania's work included preparing descriptions of 67 activities and the definition of flow by-pass systems. She also helped define the program implementation methods and the maintenance and environmental compliance process, which defined several measures and practices to protect the environment. Tania served as the major point of contact with the client and the biological and hydrological subconsultant teams. Preparation of the DMP required close coordination and possibly permitting under another project at the SCVWD called the Fisheries and Aquatic Habitat Collaborative Effort (FAHCE), which involves restoration measures for Chinook salmon and steelhead trout spawning habitat. Tania led the preparation of the EIR sections.

Alpine County Wildfire Hazards Mitigation Plan and CEQA/NEPA Review, Alpine County, CA

Alpine County received funding to develop a Wildfire Hazard Mitigation Plan. Tania is servicing as the Project Manager, reviewing the data collection, modeling, and development of the high value resource assets tasks, designing the outreach program and materials, and leading the preparation of the documentation, including of the plan and overseeing the preparation of the CEQA and NEPA documents.

Mono County Walker Restoration Project Water Transfer Project EIR and Policy Review, Mono County, CA

Tania, as Project Director, is leading the preparation of the transfer program, and defined the policies to address the water transfer program and that will become General Plan amendments. Tania is preparing the hydrologic analysis and worked with the team's biologists to create a model to understand impacts to groundwater and surface water. She also reviewed the agricultural impacts of the project. One of the key concerns is the loss or changing of grazing patterns and agricultural character of the area from the transfers. She also addressed recreational impacts to fishing.

Santa Clara Valley Water District Pipeline Maintenance Program, Santa Clara and San Benito Counties, CA

The project involved development and environmental review of a Pipeline Maintenance Program (PMP), which outlined routine and preventative maintenance activities for 14 raw water pipelines and nine treated water pipelines spanning a total of 126 miles. Tania managed the preparation of the PMP and the Program Environmental Impact Report (Program EIR). She compiled existing information and interviewed SCVWD personnel and staff in order to define the PMP. She also played a key role in preparing the technical analysis for several sections of the Program EIR and defining best management practices and areas of applicability. Key issues included special status amphibian and fish species as well as cultural resources. Other roles include review and coordination of subconsultant work, performing field reconnaissance surveys, attending public scoping meetings, and preparing agency information. Tania also prepared permits with the California Department of Fish and Game (Streambed Alteration Agreement), the Army Corps of Engineers (Section 404 permit), and Section 401 certification and NPDES permits for discharge with low threat to water quality. All permits were received within four months of application.

Rita Wilke, Senior Environmental Scientist

Rita has 10 years of experience in the environmental field and leads Panorama's Sacramento Office. She is a skilled project manager for projects requiring environmental review under the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) and involving multiple agencies and technical studies. Rita has managed environmental compliance and conducted impact analyses on all CEQA topics, for a variety of projects including transmission, public works, in addition to working with Tania on various wildfire and fuels management projects (Midpen's Wildland Fire Resiliency Program, Alpine County's Fire Hazard Risk Mitigation Plan).

Rita's strength is her ability to bring multiple parties and agencies together to come to a consensus on project direction, including federal, state, and local agencies. She has experience on projects all over California. Rita also has experience with the planning and implementation of public outreach programs.

Midpeninsula Regional Open Space District Ecosystem Resiliency Vegetation Management Program and Program EIR, Santa Clara and San Mateo Counties, CA

The Midpeninsula Regional Open Space District is creating a Wildland Fire Resiliency Program to address wildfire risk in the District's 65,000 acres of open space preserves. Rita is assisting with the development of the program, collecting and collating data and information and will prepare the noise analyses for the CEQA review for the program. Rita helped with the planning and preparation of materials for the initial public meetings for the project and will assist with preparation of the CEQA document.

East Bay Municipal Utility District Photovoltaic Renewable Energy Project, Contra Costa County, CA

The project involves construction of a 5-megawatt solar facility on EBMUD land. As a Senior Environmental Scientist, Rita was responsible for defining impacts to jurisdictional waters and preparing permit applications for USACE and the RWQCB. Rita also prepared wildlife take permit applications for USFWS and CDFW for impacts to California red-legged frog and Alameda whipsnake.

Marin Municipal Water District Biodiversity, Fire and Fuels Integrated Plan, Marin County,

The project involves the preparation of the Biodiversity, Fire and Fuels Integrated Plan for the MMWD Mt. Tamalpais watershed. Panorama also prepared the Programmatic EIR for the Plan. As an environmental scientist, Rita was responsible for researching and analyzing different fuel management actions for impacts related to noise, hazards, and aesthetics.

Alpine County Wildfire Hazard Mitigation Plan and CEQA/NEPA Review, Alpine County, CA

Alpine County received funding to develop a Wildfire Hazard Mitigation Plan. Rita is servicing as the Deputy Project Manager coordinating the data collection, modeling, and development of the high value resource assets is complete, assisting with the outreach program design, and assisting with the preparation of the documentation, including of the plan and authoring the sections of the CEQA and NEPA documents. Rita has been integral in ensuring that multiple parties are coordinated and that deadlines are met on this project.

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HIGHLIGHTS

- Deep understanding of CEQA/NEPA
- Extensive permitting experience with USACE, USFWS, CDFW, Waterboards
- Strong communication and coordination skills
- Manages Panorama's Sacramento office
- Noise technical analysis using RCNM and noise data collection

EMPLOYMENT

Firm: Panorama Environmental
Title: Senior Environmental Scientist
Years with Firm: 7, 2012– present
Past Employment:
San Francisco State University, Grant Program Coordinator: 2008-2012
Phone: 650.290.47214
E-Mail Address: rita.wilke@panoramaenv.com

EDUCATION

- B.S., Ecology (cum laude), San Francisco State University, 2010
- B.A., German (cum laude), San Francisco State University, 2009
- A.A., Humanities, Folsom Lake College, 2005

Coursework: Restoration ecology field methods, wetland ecology, genetics, biometry/statistics, physiology

PROFESSIONAL QUALIFICATIONS

- Wetland Delineation Training Program. 40-Hour, fulfilling U.S. Army Corps of Engineers Wetland Delineation Training Requirements
- Advanced CEQA Workshop, Association of Environmental Professionals
- Basic NEPA Workshop, Association of Environmental Professionals

East Bay Municipal Utilities District Briones Tower Retrofit Project, Contra Costa County, CA

The East Bay Municipal Utility District (EBMUD) Briones Tower Seismic Retrofit Project includes seismic retrofits on the Briones Reservoir inlet/outlet tower located within the reservoir. The project requires use of floating platforms to assist with construction on the inside of the tower. Panorama worked with project engineers and EBMUD staff to identify impacts and permits associated with various construction techniques. Rita prepared the Project Description for all environmental documents and permits. She provided guidance on avoidance and minimization of environmental impacts to support a Categorical Exemption from CEQA. Rita also prepared the 1600 permit application to CDFW and provided feedback and clarifications on the draft permit.

California Public Utilities Commission Fulton-Fitch Mountain Reconductoring Project, Sonoma County, CA

Panorama prepared the Initial Study/Mitigated Negative Declaration for reconductoring a 10-mile 230-kV transmission line in Sonoma County, CA. Rita conducted the noise impact analysis in coordination with the noise technical expert and identified noise impacts from project construction, including helicopter use. Rita prepared the outline for the Noise Technical Report and collaborated with the technical expert to identify representative noise monitoring locations to characterize ambient noise levels in the project vicinity.

Inyo County Public Works Emergency Road Reopenings, Inyo County, CA

Rita defined the project by identifying impacts of the July 2013 desert storms on eight affected Inyo County roads. Impact areas along eight desert roads were mapped using Google Earth imagery. Rita helped to prepare permit applications for California Department of Fish and Wildlife and Lahontan Water Quality Control Board. Rita also prepared Caltrans Preliminary Environmental Study (PES) forms for four impacted roads.

City of Sunnyvale Civic Center Modernization EIR, Sunnyvale, CA

The project involves construction of a new Civic Center and library in the same location as existing Civic Center and library facilities. Rita measured pre-project noise levels in the project vicinity and drafted the noise impact analyses for the demolition and construction of the project. Main concerns include construction near the occupied library and residences.

California Public Utilities Commission Santa Cruz 115-kV Reinforcement Project, Riverside County, CA

This controversial project involved conversion of approximately 7 miles of a power line to a double-circuit power line, construction of almost 2 miles of new power line, and modification of two substations in Santa Cruz County, CA. Rita provided administrative support for the project manager, including preparing progress reports and assisting with invoice review and team coordination. Rita researched biological resources in the project area. She managed public meeting logistics, including reserving the meeting location, security, and A/V equipment. Rita attended public meeting where she collected public comments and answered questions from the public regarding the CEQA process. Reviewed and summarized comments received on the project during scoping and incorporated public input into the EIR sections. Wrote web content for project website and worked with CPUC staff to coordinate updates. In 2015, the application for the project was dismissed without prejudice by the CPUC.

California Public Utilities Commission Riverside Transmission Reliability Project, Riverside County, CA

This project includes construction of a new 10-mile, 230-kilovolt overhead double-circuit transmission line. Rita, as Project Manager, managed Panorama staff and technical experts to develop the scope of and prepare the Subsequent EIR. The project was highly controversial and required extensive outreach to various regulatory and local agencies, which Rita coordinated and led. Rita presented the findings of the Draft Subsequent EIR to agencies and the public during two well-attended public informational workshops in Riverside County. A substantial number of comments on the Draft Subsequent EIR were received from agencies, tribes, organizations, and the public, and Rita is managing the preparation of the Final Subsequent EIR, which includes a response to each comment received on the Draft Subsequent EIR.

California Public Utilities Commission Crazy Horse Switching Station Project, Salinas, CA

The project involved preparation of an IS/MND for construction of a switching station and reconfiguration of two 115-kV power lines. Rita provided administrative support for the project manager, including preparing progress reports and assisting with invoice review. She prepared content for project website and collaborated with CPUC staff to update the website. As an approved environmental monitor, Rita conducted mitigation monitoring site visits and prepared inspection reports during project construction.

Jason Moghaddas, Forester RPF #2774

Spatial Informatics Group

Mr. Moghaddas brings over 20 years of experience in forestry, fuels reduction, and natural resource project planning and management. Jason is a recognized leader in the field of wildland fire risk assessment and planning, having worked for or on projects with SIG, the Feather River Land Trust, the Plumas National Forest, and El Dorado County Fire Safe Council. As a Fire Ecologist on the Plumas National Forest, Jason worked as part of an U.S. Forest Service interdisciplinary team to conduct NEPA analyses for landscape level fuel treatments. Jason has applied for and received Resource Advisory Committee funding for multiple fuel reduction projects. As a project manager for the Fire and Fire Surrogate Study, Mr. Moghaddas successfully coordinated an interdisciplinary team of scientists for a study on the effects of fuel treatments on mixed conifer ecosystem process and structure. Through his on-going work on this and other studies, Mr. Moghaddas had been a lead or co-author on over 20 published scientific papers. In addition to a strong research background, Mr. Moghaddas brings the practical experience of being a current Registered Professional Forest (#2774) along with extensive experience as a wildland fire fighter and wildlife field technician. He worked as a wildland fire fighter (Plumas National Forest) on both engine and hand crews and has planned and implemented prescribed burns on both public and private lands and as a volunteer fire fighter with the Indian Valley Fire Department. As Conservation Director for the Feather River Land Trust, Mr. Moghaddas worked with large land owners to help develop and fund conservation easements on working ranches in Plumas County.

Jason is managing SIGs participation and work on Midpen's Wildland Fire Resiliency Program; UC Berkeley's Hill Campus Fire Hazard Reduction Program; work with MMWD on grant funding opportunities for their Biodiveristy, Fire, and Fuel Integrated Plan; and on SIGs participation in the preparation of the Wildfire Hazards Risk Mitigation Plan for Alpine County. Jason has led the preparation of numerous Community Wildfire Protection Plans.

Midpen Ecosystem Resiliency Vegetation Management Program and Program EIR, Santa Clara and San Mateo Counties, CA

Jason is the Project Manager for SIG and is leading the preparation of the program content, including development of fuel treatment locations, the prescribed fire program, and the monitoring program. His work has included development of a prioritization system locating and implementing fuel treatments, coordination the GIS and field team to locate potential pre-fire infrastructure and evacuation routes, and document preparation. Jason has also participated in numerous outreach efforts to surrounding agencies and jurisdictions and presented to the public and lead stations at workshops to inform the public of the program.

El Dorado County Community Wildfire Protection Plan, El Dorado County CA

Jason served as the Project Manager and worked with the El Dorado County Fire Safe Council to develop a comprehensive Community Wildfire Protection Plan (CWPP) for the west slope of El Dorado County, California. The plan was based on the results of a landscape scale community risk assessment and modeling, with an emphasis on establishing fuel management areas that are integrated with the existing treatment network.

Fuel treatment project were designed with extensive community input from in person public meetings and online surveys. Jason also led efforts to provide the costing for fuel treatments in order to identify projects that maximized the benefit for the costs.

HIGHLIGHTS

- An experienced fire ecologist, with extensive forestry and natural resource related planning and implementation experience across Northern California

EMPLOYMENT

Firm: Spatial Informatics Group, LLC

Title: Director, Natural Hazards Division

Years with Firm: 9, 2010– present

Past Employment:

- Conservation Director, Feather River Land Trust: 2008-2012
- Fire Ecologist, Plumas National Forest, 2004-2008
- Fire Scientist, UC Berkeley Fire Science Lab, 2001-2005
- Wildland Fire Fighter, Plumas National Forest, 1996-1997

Phone: 530.927.8009

E-Mail Address: jmoghaddas@sig-gis.com

EDUCATION

- M.S., Environmental Science, Policy, and Management, UC Berkeley, 1999
- B.S., Natural Resource Management, 1995

PROFESSIONAL QUALIFICATIONS

- California Registered Professional Forester

An Assessment of Fire Risk for the WUI and Stream Environment Zones of the Lake Tahoe Basin, Lake Tahoe CA and NV

Jason lead a fire hazard and risk assessment for the entire Lake Tahoe Basin, with an analysis focused on potential fire behavior in Stream Environment Zones (SEZs) and the wildland urban interface (WUI). The project covered all lands within the Lake Tahoe Basin Management Unit, which included a 231,285 acre area. The general approach was to develop fire behavior and probability inputs within the Lake Tahoe Basin using LiDAR, WorldView-2 imagery and existing GIS layers. His worked included summarizing all data and authoring the final report.

An Assessment of Fire Risk for Nevada City and Grass Valley, Nevada City and Grass Valley, CA

Jason is the Project Manager for SIG and is working with CALFIRE on an assessment of wildfire risk to the communities of Nevada City and Grass Valley. The project includes developing potential fuel treatment locations for risk mitigation as well as an assessment of factors affecting structure loss during the 2018 Camp Fire.

UC California's 4th Climate Assessment: Fuel Treatments for Forest Resilience & Wildfire Mitigation, CA

Jason was the lead author for a report for California's 4th Climate Assessment, published in 2018. For this report, SIG reviewed what is known about the effects of fuel treatments on stored forest carbon, wildfire risk and wildfire and summarized geo-spatial data gaps that need to be filled in order to make good fuel treatment decisions that both increase forest resilience and carbon sequestration.

Alpine County Fire Hazards Mitigation Plan, Alpine County, CA

Jason is the lead for SIGs participation in this project. The plan includes an evaluation of fire hazard risks through modeling, identification and ranking of HVRAs through a collaborative process with a steering committee, identification of three priority projects including defining the specific fuel treatments, and defining the costs associated with those treatments. Jason is overseeing SIGs efforts in the development of the hazard risk map and in coordinating with the steering committee in Alpine County for this work.

Western Wildfire Assessment

Jason, as the Project Manager, led the SIG teams work. SIG worked with American Forest Foundation (AFF) to assess existing data and information resources on to high wildfire hazard risks on non-industrial private forest lands. They then modeled the potential impacts of those hazards on public goods, such as key water supplies, areas of high carbon sequestration value, and areas of high wildlife habitat importance. The assessment was performed across 11 western states: Washington, Oregon, California, Idaho, Nevada, Montana, Wyoming, Utah, Colorado, New Mexico, and Arizona.

Assessing Extreme Fire Risk in California for the California Public Utilities Commission

Jason was the Project Manager for SIG. SIG scientists worked with CALFIRE to assess the top 2 percent worst fire weather conditions for the entire State of California. These conditions were then used to perform 1000 unique, high-resolution wildfire simulations per cell; simulations were based on the USGS-supported LANDFIRE 1.3 dataset. In total, SIG scientists simulated over 100 million ignition events around the state of California under extreme historical weather conditions. This information was then used to create an updated public statewide fire threat map adopted by the Public Utilities Commission in December, 2017.

UC Berkeley Hill Campus Vegetation Management Plan and EIR, Berkeley, CA

Jason provided plan review for UC Berkeley's Hill Management Plan and EIR. This plan was focused on reducing fire risk on UC Berkeley lands. The plan covers fuel treatments to remove eucalyptus and to treat various other areas and types of habitats on the campus. The plan is very contentious and has been heavily litigated in the past. Jason is providing expert advice and technical support for the plan and how it benefits wildfire reduction and safety.

Scott Conway, Forest Ecologist

Scott Conway brings a unique combination of natural resource education, training, and management experience to successfully navigate forest and fuels management challenges. Scott began his career with the Forest Service after graduating from university. He assimilated a range of practical management experience in everything from implementing complex timber sales to biological surveys to prescribed and wildland fire.

In 2008, he transitioned into a head forester position where he co-led several large collaboration projects including the Sagehen Forest Project where he led implementation of a novel, multiple goal management approach to overcome previous project roadblocks. This accomplishment was recently highlighted in a New Yorker article. More recently, Scott worked at the Pacific Southwest Region's Remote Sensing Lab where he pioneered LiDAR and geospatial dataset application solutions for managers and decision makers in California, Nevada, and the Pacific Islands. He capped his Forest Service career off as the District Ranger for the Truckee Ranger District on the Tahoe National Forest. In his current capacity as a Forest Ecologist with Spatial Informatics Group, Scott continues to lean on his deep set of experiences, education, and training to perform careful forest project assessment, analysis, implementation, and monitoring so clients to create defensible communities and resilient forests. Scott is providing the high value resources and assets (HVRA) evaluation and fire risk and behavior modeling for the Alpine County Fire Hazard Mitigation Plan; a collaborative effort between SIG and Panorama.

Midpen Ecosystem Resiliency Vegetation Management Program and Program EIR, Santa Clara and San Mateo Counties, CA

Scott is leading an integrated analysis of UAV data for use in high resolution monitoring of vegetation management activities.

Fuel Treatment Prioritization For the Hat Creek Ranger District, Lassen County, CA

Scott is leading the fire risk assessment , fuel treatment location, and prioritization analysis for this project. This includes fire risk assessments using Scott is also conducting LiDAR based stand structure mapping and analysis on existing LiDAR data.

Fuel Treatment Prioritization For the Truckee Ranger District, Tahoe National Forest, CA

Scott lead multiple fuel treatment prioritization and fire risk assessment projects on the Truckee Ranger District of the Tahoe National Forest.

Alpine County Wildfire Hazards Mitigation Plan, Alpine County CA

Scott is leading the fire risk assessment , fuel treatment location, and prioritization analysis for this project. This includes fire risk assessments using The Interagency Fuel Treatment Decision Support System. This system integrates the FLAMMAP system and LANDFIRE Data to generate fire risk assessments. Scott is also conducting LiDAR based stand structure mapping and analysis on existing LiDAR data.

Best Management Practices Evaluation for WUI Treatments, Plumas County, CA

Scott will conduct a fire risk assessment and LiDAR and UAV based assessment of stand structure of existing WUI fuel treatments in Plumas County CA. The project will focus on long term effectiveness of WUI treatments and will provide information to the Plumas County Fire Safe Council on treatment maintenance needs

HIGHLIGHTS

- An experienced fire modeler and LiDAR analyst
- Over 20 years of fire management, vegetation management, and fuel treatment experience.

EMPLOYMENT

Firm: Spatial Informatics Group, LLC
Title: Forest Ecologist
Years with Firm: 2019– present
Past Employment:

- Adjunct Forest Ecology Professor, Sierra Nevada College, Incline Village, NV, 2019-present
- District Ranger, Tahoe National Forest, Truckee, CA, 2019
- Spatial Ecologist, USDA Pacific Southwest Region, 2016-2018
- Vegetation Management Officer, Tahoe National Forest, Truckee, CA 2008-2016
- Forester and Wildland Fire Fighter, Tahoe National Forest, 2004-2008

Phone: 530.287.3010
E-Mail Address: sconway@sig-gis.com

EDUCATION

- B.S., Natural Resource Management,/GIS, Colorado State U., 1998

Carl Rudeen, Geospatial Analyst

Carl worked as a civilian geospatial analyst for 13 years with the U.S. Air Force. He brings significant experience as a biologist, project manager, and program manager. He has worked extensively in the high-deserts of the Pacific Northwest and subtropical forests of Okinawa, Japan. Notable among his strengths and experiences are his analysis of spatial natural resources datasets to make management decisions and knowledge of post-fire rehabilitation of rangelands. Carl worked for the Upper Salmon Basin Watershed Project prior to working for the Air Force. He worked with local ranchers to implement salmon and steelhead conservation projects on private lands. Carl is providing all of the GIS support on the Midpen Wildland Fire Resiliency Program.

Midpen Ecosystem Resiliency Vegetation Management Program and Program EIR, Santa Clara and San Mateo Counties, CA

Carl lead all aspects of geospatial data aggregation, pre-fire planning summaries, map updates, and online map development for the project. This included using ESRI based software packages (Arc Pro and Portal) to summarize data and provide streamlined client online access to all project related geospatial information.

Fuel Treatment Prioritization For the Hat Creek Ranger District, Lassen County, CA

Carl worked as the geospatial data manager for the Hat Creek Ranger District Fuel Treatment Prioritization Project. This included locating and aggregating existing geospatial data, updating information generated via fire risk assessments, and providing the online access to data.

BMP Evaluation for WUI Treatments, Plumas County, CA

Carl will manage the geospatial data manager for a fire risk for an evaluation of existing WUI fuel treatments in Plumas County, CA. This included locating and aggregating existing geospatial data, and providing the project team online access to all project related geospatial information.

Alpine County Wildfire Hazards Mitigation Plan, Alpine County CA

Carl worked as the geospatial data manager for the Alpine County Wildfire Hazards Mitigation Plan. This included locating and aggregating existing geospatial data, updating information generated via fire risk assessments, and providing the client online access to all project related geospatial information.

UC Berkeley Hill Campus Vegetation Management Plan and EIR, Berkeley, CA

Carl worked as the geospatial data manager for the UC Berkeley Hill Management Plan and EIR. This plan was focused on reducing fire risk on UC. This included locating and aggregating existing geospatial data, and providing the project team online access to all project related geospatial information.

An Assessment of Fire Risk for Nevada City and Grass Valley, CA

Carl worked as the geospatial data manager for a fire risk assessment for Nevada City and Grass Valley, CA. This included locating and aggregating existing geospatial data, and providing the project team online access to all project related geospatial information.

HIGHLIGHTS

- An experienced fire Geospatial Analyst, with extensive ESIR GIS product line experience
- Wildlife biology experience with the United States Air Force in Idaho and Japan

EMPLOYMENT

Firm: Spatial Informatics Group, LLC
Title: Geospatial Analyst
Years with Firm: 2019– present

Past Employment:
Natura Resource Program Manager, US Air Force, Okinawa Japan and Mountain Home ID, 2010 -2019

Wildlife Biologist, US Air Force, Mountain Home, ID, 2007-2010

Wildlife Technician, US Air Force, Mountain Home, ID, 2005-2007

Phone: 208.249.6555
E-Mail Address: crudeen@sig-gis.com

EDUCATION

- M.S., Geographic Information Science, Idaho State University, 2012
- B.S., Wildlife Resources and Rangeland Ecology, U. of Idaho, 2001

PROFESSIONAL QUALIFICATIONS

- Post Baccalaureate Certificate in GIS

Phillip Dye, Fire Consultant

Mr. Dye is the found and owner of Prometheus Fire Consulting, LLC. He has over 20 years of experience working in fire management and prescribed burn planning. Phil has also served as Incident Commander for several NorCal Training Exchanges (TREX) as well as the inaugural Cascadia TREX. Phillip began his career in wildland fire in 1997 with a local government fire agency. Over the span of his 20 year career, he progressed through the ranks to become a Fire Captain. In 2017, he retired from the fire agency, but remained active as a volunteer. He is a member of a number of associations, including the Association of Fire Ecology, the International Association of Wildland Fire, and the National Wildfire Suppression Association. He is qualified as a National Wildfire Coordinating Group (NWCG) Prescribed Fire Burn Boss. He has led over 50 prescribed fires across the nation. Currently, Phil is helping on a range of projects in the San Francisco Bay Area, including pre-fire planning for Midpen.

Midpen Open Space District Wildland Fire Resiliency Program, CA

Phil is assisting in the development of wildfire response plans including an assessment of current conditions and infrastructure and have made recommendations for safe and effective response to wildfire. In addition, he is providing recommendations for fuel treatments.

2019 Klamath River Training Exchange (TREX), Klamath, CA

The TREX was operated using the Incident Command System and Phil provided technical expertise to support the project. Phil's support of the project helped to maintain community and landscape fire resiliency.

Spanish Language Training Exchange—The Forest Stewards Guild

Phil provided a qualified Burn Boss to lead a diverse group of Spanish language participants from around the world. The project helped build the participants' proficiency in fire management with the goal of returning to their home countries to augment or start their own programs. In addition Phil's work helped to enhance the safety and resiliency of the youth camp where the project was conducted.

North Orinda Shaded Fuel Break, Orinda County CA

The NOSFB is one of CAL FIRE's 35 top priority projects in the state. Phil is helping the District by designing prescribed fire projects that would complement and reinforce the shaded fuel break to augment its ability to slow fire spread and protect communities

S-212, Wildland Power Saws Class, Santa Clara County Parks, CA

In this 4-day hands-on class, Phil provided training to the department's ranger and maintenance staff to enhance their ability to complete fuel reduction work in order to reduce the impact of fire on agency lands.

Cocking Prescribed Fire—David and Penny Crocking

The Cockings have lived on their land for almost 40 years. During that time, they have been threatened by wildfire on several occasions. Phil designed and implemented a prescribed fire on their property to reduce the threat to their home as well as to enhance the biodiversity on their land.

HIGHLIGHTS

- An experienced prescribed burn planner and wildland fire manager, with over 20 years of work in the wildland fire industry
- Experience recommending pre-wildfire mitigation measures as well as the use of fire as a resource management tool, fire control line placement and design, infrastructure defense strategies, and proposed locations of fuels reduction work.

EMPLOYMENT

Firm: Prometheus Fire Consulting, LLC.
Title: Founder & CEO
Years with Firm: 5, 2014– present
Past Employment:
Fire Captain, Spring Valley Volunteer Fire Department: 2017-present
Fire Captain/Paramedic, City of Milpitas: 1997-2017
Instructor, Sacred Heart Preparatory: 1996-1997
Phone: 408 807 1963
E-Mail Address:
phil@prometheusfireconsulting.com

EDUCATION

- M.Sc., Biochemistry, University of Hawaii, 1988
- B.S., Psychology, University of Wyoming, 1985

PROFESSIONAL QUALIFICATIONS

- NWCG Prescribed Fire Burn Boss, Type 2
- Chief Fire Officer—California State Fire Marshal
- Wildland Fire Manager—Association for Fire Ecology
- Fire Prevention Officer I—California State Fire Marshal

Sasha Berleman, PhD., Fire Ecologist

Sasha is a dynamic conservation and fire management professional with outstanding analytical, planning, relationship management, and decision-making skills. She has extensive outreach and communications experience, team leadership experience, as well as interagency networking, partnership, and coordination. Sasha has experimental design and implementation, restoration, crew leadership and management skills. She also has experience planning and coordinating complex cooperative burns with diverse agencies and stakeholders.

North Orinda Shaded Fuel Break Project Prescribed Burn Plan Development for the Moraga-Orinda Fire District

Sasha is co-lead on the development and preparation of prescribed burn plans for this project. The fuel break is a 14-mile long vegetation management effort along major roads, population centers, neighborhoods and critical infrastructure in the east bay area. Sasha's role on this project is assessing fuels treatment units across the numerous project areas throughout the fuel break and developing burn plans for each individual burn unit.

Pre-Fire Planning and Field Mapping and Public Outreach/ Presentation Development for Mid-Peninsula Open Space District

Sasha's role in this project is as a local fire specialist. This role translate to contribution of expertise in a variety of ways to assist the project, but includes field assessment and mapping of fire risk, expected fire behavior, and pre-fire mapping of infrastructure and fire-fighting points of interest such as lookouts, gates, shaded fuel breaks, and safety zones. This includes developing and providing public outreach and presentation materials to assist in communications of fire ecology, fire history, and fire management to the public. Sasha will also be involved in fuels treatment and prescribed fire plan and prescription development, as well as some monitoring development and implementation.

Fire Forward Program Consulting Director for North Bay Nature Conservation Non-Profit Audubon Canyon Ranch

As Consulting Director of the Fire Forward Program for Audubon Canyon Ranch, Sasha is leading a regional cooperative fire program in the North Bay Area. This position entails leading and managing the Fire Forward Program team and coordinating with the network of teams across the non-profit organization as well as diverse cooperating organizations and agencies across the Bay Area, including through the development of partnership MOAs. A key component of this position is the complete planning and coordination of fuels treatments and prescribed burns

Programmatic Burn Plan Template and Site-Specific Burn Plan Development for the East Bay Regional Park District

On this project, Sasha's role was to develop comprehensive and diligent modern burns for the East Bay Regional Park District to support a revitalization of the agencies prescribed burn program and to aid them in maintaining their existing fuels treatment units. In this position, Sasha developed two programmatic burn plan templates for the district, one for their grassland fuel models and one for their woodland/ mixed fuel models. To accompany these, Sasha then also developed a site-specific prescribed burn plan to go with each of the two templates.

FIRE POPPY CONSULTING

HIGHLIGHTS

- An experienced fire management professional
- PhD in Wildland Fire Science from UC Berkeley
- Winner of numerous awards and scholarships throughout her educational and professional career
- Provides expertise on ecologically applied fire and fuels management, prescribed fire, monitoring and outreach

EMPLOYMENT

Firm: FirePoppy Consulting
Title: Owner
Years with Firm: 2, 2018– present
Past Employment:
Firefighter, Redding Interagency Hotshot Crew, 2017-2018

Fire Ecologist/Fire Program Director, Audubon Canyon Ranch, 2015- 2018

Graduate Student Instructor/ Researcher, Scott Stephens' Fire Science Lab, 2012- 2016

Phone: 707 732 1586
E-Mail Address:
firepoppyconsulting@gmail.com

EDUCATION

- PhD., Wildland Fire Science, Fire Ecology and History, UC Berkeley, 2016
- B.S., Conservation and Resource Studies, UC Berkeley, 2011
- Associates with Honors: Liberal Arts, Humanities, Mt. San Jacinto College, 2009

PROFESSIONAL QUALIFICATIONS

- Fire Effects Monitor (FEMO)
- Incident commander type 5 (ICT5(t))
- Field Observer, Fire Effects Monitor S-290/S-244
- Member of Redding Hotshot Crew

Heath Bartosh, Principal/Botanist

Heath Bartosh is a senior botanist and rare plant specialist with over 20 years of experience working in natural resource and environmental related fields. Mr. Bartosh is considered an expert in the flora of the Bay Area and has conducted extensive botanical fieldwork throughout California, focusing on distribution, soil and geologic relationships, endemism, regional and local rarity, and habitat conservation. Recent surveys directed by Mr. Bartosh have uncovered new populations of species previously thought to be nearly extinct (Mt. Diablo buckwheat) and additional populations of species new to science (Lime Ridge navarretia). As Nomad's senior botanist Mr. Bartosh ensures survey methodologies utilized during botanical resource assessments, vegetation community identification, floristic studies, and both small and large-scale botanical studies conform to current guidelines and protocols endorsed and/or developed by trustee agencies. With this background he has managed both stewardship-based and CEQA/NEPA driven projects with efficiency and proficiency.

In 2009, he became a member of the 10-person Rare Plant Program Committee at the state level of the California Native Plant Society. His role on this committee is to ensure the programs continue to develop current, accurate information on the distribution, ecology, and conservation status of California's rare and endangered plants. For the past five years he has been a co-instructor of rare plant survey protocol workshops with CNPS and CDFW personnel. In 2016 Mr. Bartosh became one of the first professional botanists to become a Certified Consulting Botanist in California through the Botanist Certification Program (Certification # CCB-002). He also holds a Scientific Collecting Permit for Rare, Threatened, and Endangered Plant Species from the California Department of Fish and Wildlife (Permit # 09045).

Endangered Habitats League. State of California (23 million acres of wildlands throughout the state)

Heath reviewed the Program Environmental Impact Report (PEIR) that was developed by the California Board of Forestry and Fire Protection's for their Vegetation Treatment Program (VTP) and provided the client with a legal quality comment letter describing the PEIR's deficiencies, related to natural resources, under CEQA. The VTP is part of a comprehensive fire prevention strategy that implements strategic vegetation management activities as part of their mission to safeguard people and protect property and resources of California from the hazards associated with wildfire.

San Francisco Public Utilities Commission. Hetch Hetchy Water & Power Electric Transmission Line, Tuolumne and Stanislaus

Heath established baseline biological conditions; protocol-level rare plant and wildlife surveys; including pre and post-fire evaluation of affects from the Rim fire on special-status plants; preparation of a biological resources report and biological resources section of an EIR; and development of program and site specific-level mitigation measures for this long-term (20-30 year) vegetation management and culvert maintenance project.

HIGHLIGHTS

- Expertise in the flora of the San Francisco Bay Area and Diablo Range
- Managed On-call contracts for Midpen, the East Contra Costa County Habitat Conservancy, and EBPRD since 2011
- Co-Instructor with CDFW for the Rare Plant Survey Protocol Workshop.

EMPLOYMENT

Firm: Nomad Ecology, LLC
Years with Firm: 15, 2004– present
Past Employment:
Sycamore Associates, LLC
2002-2004
Phone: 925.228.3027
E-Mail Address:
hbartosh@nomadecology.com

EDUCATION

- B.S., Natural Resources Planning, Humboldt State University, 2001
- M.A., Biology, University of Pennsylvania, 2001
- B.A., Mathematical Biology, University of Pennsylvania, 2000

Coursework: Land-use and park planning focused on natural resources, CEQA / NEPA, and GIS

PROFESSIONAL QUALIFICATIONS

- Certified Consulting Botanist, California Native Plant Society, CCB-002.
- Research Associate of the University and Jepson Herbaria at the University of California, Berkeley
- State CNPS Rare Plant Program Committee Chair
- Board Member of the CNPS Botanist Certification Program

MEMBERSHIPS AND AWARDS

- California Botanical Society Member
- California Plant Society Member
- Northern California Botanists Member
- Southern California Botanists Member

Midpeninsula Regional Open Space District Wildland Fire Resiliency Program, San Mateo and Santa Clara Counties, CA

Nomad is a subconsultant to Panorama on this project. Heath is leading his team's work and taking a programmatic approach to biological resource evaluation to prepare a Biological Resources Assessment Technical Report. He is conducting a literature review, including fire history and describing existing data on the habitats and types of plant and animal communities found in each of Midpen's 26 preserves (covering over 64,000 acres). Where possible, animal populations (i.e., where breeding occurs) versus animal presence (transient individuals) are being identified. Heath is generating the species lists will indicate both confirmed species presence and those with potential to occur (habitat present). He is preparing the impact assessment and defining mitigation for projects on a condition-based assessment model. Heath is relying on existing data from the District's previous work and documentation, including the Biological Opinion for Species Recovery. Heath is also providing input into the pre and post-fire monitoring requirements and program and input into prescribed burn units and where ecological benefits could occur from prescribed fire.

Tri-Valley Conservancy North Livermore Resource Conservation Strategy, Alameda County, CA

Heath led the preparation of the North Livermore Resource Conservation Study for the 13,861-acre North Livermore Area in Alameda County for the Tri-Valley Conservancy. The purpose of the study was to prioritize lands for potential conservation efforts based on an evaluation of natural resources that Tri-Valley Conservancy identified as "Critical Conservation Resources" (CCR) and the goals developed for those CCRs. These goals included protecting biological resources in the study area; identifying migration corridors and linking existing and future protected lands; protecting the regionally significant Springtown Alkali Sink; identifying trail corridors; preserve agricultural lands; and buffer the urban growth boundary with open space. This study was intended to provide a long-term road map for Tri-Valley Conservancy's mission and interests through conservation action or acquisition.

San Francisco Public Utilities Commission CSPL2 Pipeline Replacement Project, San Mateo County, CA

SFPUC upgraded the 19 mile Crystal Springs San Antonio Pipeline No. 2 at several locations. Heath led the biological assessment and rare plant and wildlife surveys for the entire length of this project and presented the results of the surveys in a Biological Resources Assessment. Information from the BRA was incorporated into the CEQA document for this project.

Solano Land Trust Rockville Trails Resource Management Plan , Solano County, CA

Heath led Nomad's work to prepare a Resource Management Plan (Plan) for the 1,500-acre Rockville Trails property located in Solano County, California. The Plan is a living and guiding document to assist Solano Land Trust in the long-term stewardship of natural resources of the Rockville Trails acquisition. Heath's role on this project was to determine baseline conditions for natural resources for the property; review existing information, ground-truth and map existing biological resources using GIS systems; determine gaps in information and gather this information if possible; and prepare a property-wide management plan that includes research recommendations as well. Heath is also currently conducting research suggested in the management plan related to management and monitoring of rare plant species and an oak regeneration pilot project

Post-Fire Floristic Research after the 2013 Morgan Fire, Contra Costa County, CA

Heath designed and implemented a post-fire vegetation study on Mount Diablo State Park to assess vegetation recovery and floristic diversity after the 2013 Morgan. The goal of the study was to capture ecological and successional dynamics of the herbaceous layer in the post-fire environment in a variety of vegetation communities. Plot locations were chosen randomly and stratified by six vegetation types, including; chamise chaparral, serpentine chaparral, deciduous oak, deciduous oak woodland, live oak woodland, grassland/forb, and serpentine grassland/forb. A total of 55 permeant transects were installed. At these plot locations species cover and fire severity data were collected along a 50 meter transect. Data for this project were collected for three years after the fire during peak phenology in the spring from 2014-2016.

Following the data collection, data analysis was conducted evaluating the frequency of fire-following species, rare plants, and invasive species within the plots. Species richness across all plots was also analyzed. This work resulted in many presentations of the results to various groups throughout the state of California.

Bureau of Land Management. Berryessa Snow Mountain National Monument, CA

Heath led Nomad's work collecting baseline ecological data in chaparral ecosystems burned in the 2015 Rock and Jerusalem Fires. This study examined the distribution, diversity, and ecological drivers of fleeting annual and short-lived perennial plant species in post-fire chaparral vegetation communities. He produced a report of the study's methods and findings.

Colin Busby, Principal, Cultural Resources Specialist

Dr. Busby has 40 years archaeological experience in six states and three foreign counties. His cultural resources management experience has involved all aspects of NEPA and CEQA assessment and regulatory compliance. Experience includes the design, direction and execution of the cultural resource components of EISs, EIRs, EAs and other investigations for federal, state, and municipal governments, land developers, the U.S. military, and the scientific community in the western United States. Specialties include program management, Native American consultation, public liaison and regulatory agency coordination, research design development, field research, NHPA Section 106 and Section 110 compliance, and editing and report production. His experience with California Native American consultation has included SB 18 and

HIGHLIGHTS

- 40+ years of relevant experience in both large and small corporate environments
- Fully knowledgeable of NEPA/ NHPA &CEQA requirements for cultural and historic properties and AB 52
- Extensive local knowledge of archaeological and physical anthropology of NorCal
- Working relationship with and knowledge of federal, state and local transportation agencies and public works departments requirements and state OHP staff reviewers **for**

EMPLOYMENT

Firm: Basin Research Associates
Years with Firm: 38, 1981– present
Phone: 510 430 8441
E-Mail Address:
colinbusby@basinresearch.com

EDUCATION

- PhD., Anthropology, University of California, Berkeley, 1978

PROFESSIONAL QUALIFICATIONS

- Register of Professional Archaeologist (RPA #10186)

SFPUC Water System Improvement Projects—Various Counties

Dr Busby served as a Principal Archaeologist for San Francisco Public Utilities Commission (SFPUC) Water Improvement System Project (WISP) projects including New Crystal Springs Bypass Tunnel Project; BDPL 5 (Alameda); BDPL 5 (San Mateo); BDPL 3&4 (Alameda, Santa Clara); and, San Joaquin Pipeline System Project. He was tasked with meeting federal (NEPA) and state (CEQA) EIR/EIS mitigation requirements both pre-construction and construction. Compliance projects included archaeological inventory, site testing and evaluation, data recovery, development of Archaeological Monitoring Plans and mitigation monitoring, review of unexpected discoveries, and other projects.

South Bay Water Recycling Program, Santa Clara County, CH2M Hill, San Jose, CA

Dr. Busby was responsible for Section 106 compliance for recycled water pipelines associated with South Bay Water Recycling Program. He led the cultural resources identification, evaluation, and reporting program to meet NEPA/NHPA requirements of United States Bureau of Reclamation. Tasks included Native American consultation and coordination between USBR NEPA staff and client environmental and engineering staff.

Marin Municipal Water District Biodiversity, Fire, and Fuels Integrated Plan, Marin County, CA

Dr. Busby, as a consultant to Panorama, completed an archaeological literature and records search and mapped the locations of known resources for GIS use. Previous archaeological sensitivity studies had been performed for MMWD lands allowing the development of a project area specific qualitative model regarding archaeological sensitivity based on distance to water and elevation. Dr. Busby used the maps in the AB 52 consultations with the Graton Tribe, and in defining mitigation. Literature searches and surveys would be required prior to conducting work in new areas; however, the existing model and comprehensive map allowed for the easy identification of areas that would need surveys. Dr. Busby also identified when mitigation would not be required based on impacts of the activity.

Transportation Studies, Caltrans Compliance, Northern California

Dr. Busby led the completion of over 120+ cultural resources studies (1980 to present) to meet Caltrans requirements for both archaeology and historic architecture in 15 northern and central California counties. Clients have included both public and private entities with a focus on transportation improvements, mass transit, pedestrian and bicycle trails and bridge rehabilitation. Tasks have included program management, archival research, field studies including archaeological testing, coring and data recovery programs, sensitivity models, built environment assessments, Native American consultation and completion of cultural resources compliance documents (ASR, HRER, HPSR).

Anthony Falzone, MLA, CFM, Project Manager

Mr. Falzone is a geomorphologist and Certified Floodplain Manager (# US-12-06605) with extensive fluvial geomorphology, river ecology/ restoration, flood control, and hydrologic experience in California and nationally. He has over 18 years of consulting experience focused on developing, conducting, and compiling monitoring data to adaptively manage land use disturbances and restoration projects in river corridors. Mr. Falzone is also a leader in the application of advanced technology to the collection of field data and analysis of spatial data in river corridor ecosystems. This interdisciplinary expertise enables Mr. Falzone to develop innovative solutions to the most complex ecosystem management challenges. He is experienced in river restoration, flood management, watershed assessment, technical writing, and project management.

Try Creek Rancheria Climate Adaptation Plan, CEQA, and Stream Flow Enhancement

Mr. Falzone is the project manager for a $5 million implementation project for stream flow enhancement and restoration on a tributary and a portion of the mainstem of the Russian River. Mr. Falzone helped the Tribe secure restoration funding by first leading the development of a Climate Adaptation Plan for the Dry Creek Rancheria ($174,616). Mr. Falzone leveraged this initial study and CEQA to obtain $3.4 million for implementation of stream flow enhancement and restoration actions on Rancheria Creek and the Russian River from the Wildlife Conservation Board Stream Flow Enhancement Program.

Wildcat Creek Watershed Erosion and Sediment Control Project, East Bay Regional Park District

Sediment periodically fills Jewel Lake in Tilden Regional Park, which requires costly dredging. FlowWest performed a constraint and opportunity analysis to produce a comprehensive set of recommendations, including a channel bypass for Jewel Lake. Mr. Falzone managed the collection of erosion and sediment source data through a systematic field effort and led the development of engineering design alternatives for erosion and sediment control implementation and long-term maintenance.

Upper Klamath Basin Watershed Action Plan and Restoration Opportunity Analysis;

FlowWest has conducted numerous projects for the Klamath Tribes that will be integrated into the Upper Klamath Basin Watershed Action Plan. The goal of the plan is to spatially prioritize restoration actions in the Upper Klamath Basin (UKB) to improve water quality and increase the population of endangered fish. Additionally, the Watershed Action Plan (WAP) will unify the community of aquatic restoration practitioners and managers in the UKB to improve restoration project planning and implementation that is expected to be funded as part of the effort to remove four dams on the Klamath River. Mr. Falzone is the project manager for development of the UKB WAP and other projects for the Klamath Tribes using GIS and R to ensure data driven decisions for restoration prioritization. Mr. Falzone directed Restoration Opportunities Analysis (ROA) I-III GIS projects to identify potential site-specific restoration actions. Mr. Falzone also managed the conversion of the Klamath Tribes 30-year water quality dataset to the EPA's Exchange Network framework.

HIGHLIGHTS

- Evaluates fluvial geomorphology, sediment transport, and hydrology of streams.
- Restoration and fish passage design experience.
- Field data collection using GPS and GIS analysis

EMPLOYMENT

- GM Kondolf, 1999-2001, Research Assistant
- Stillwater Sciences, Jr. Geomorphologist, 2001-2003
- CH2MHill, Sr. Geomorphologist, 2003-2009
- NewFields, River Basin, Co-Founder, and Geomorphologist 2009-2015
- FlowWest, Co-founder and Principal Geomorphologist, 2015-current

EDUCATION

- MLA, Environmental Planning, University of California, Berkeley, 2001
- BA, Economics, Minor in Forestry, University of California, Berkeley, 1996

TRAININGS

- Applied Fluvial Geomorphology
- Sediment Transport to Forecast Channel Change
- Stream Investigation, Stabilization, and Design Workshop: Innovative Approaches to Streambank Stabilization and Restoration,
- Trimble GPS Training

PROFESSIONAL QUALIFICATIONS

- Teaching experience:
  UC Berkeley, California Water Colloquia Seminar, Faculty Lecturer, Fall 2007
  UC Berkeley, Hydrology for Planners, Reader, Spring 2000
  UC Berkeley, Introduction to Environmental Sciences, Graduate Student Instructor,

Panorama Environmental, Inc.
with Spatial Informatics Group, LLC

Professional Services to the San Lorenzo Valley Water District for the Fire Management Plan FEE SCHEDULE

December 19, 2019

717 Market Street, Suite 650
San Francisco, CA 94103
650-373-1200
www.panoramaenv.com

PANORAMA ENVIRONMENTAL, INC.

FEE SCHEDULE

Panorama Environmental, Inc., (Panorama) proposes to provide services on a time and materials basis. The rate sheet for Panorama staff is provided below and is followed by our subconsultant rates, and direct costs/other charges. Rates are identified by staff position. Our rates increase by approximately 4 percent (4%) per year. Rates here are for 2020.

Panorama

Position	Rate per Hour
Principal	$200
Sr. Consultant/Director	$195
Sr. Manager	$190
Sr. Project Manager/Scientist (Planner) V/Project Manager	$185
Environmental Scientist (Planner) IV/Project Manager	$170
Environmental Scientist IV/Planner IV/Project Manager	$165
Air Quality/Noise Specialist	$165
Fire Ecologist	$165
Environmental Scientist III/Planner III	$155
Visual Resources Specialist	$150
Environmental Scientist II/Planner II	$145
Cartographer/GIS Specialist II	$135
Environmental Scientist I/Planner I	$125
Senior Biologist	$125
Environmental Analyst III	$120
Cartographer/GIS Specialist I	$115
Environmental Analyst II	$110
Document Production	$100
Environmental Analyst I	$100
Administration	$90
Public Facilitator	$215

Subconsultants

Spatial Informatics Group	Hourly Rate
Fire Ecologist	$165
Forester	$165
GHG Expert	$150
GIS, Data Modeler, Technician	$140

Prometheus Fire Consulting and Fire Poppy Consulting	Hourly Rate
Fire Ecologist	$140
Fire Consultant	$140

Nomad Ecology	Hourly Rate
Principal	$115
Project Manager/Permitting Specialist	$125
Senior Biologists	$115
Biologists	$110
GIS Specialist	$110

Basin Research Associates	Hourly Rate
President/Principal Archaeologist	$150
Research Scientist	$140
Historian	$135
Paleontologist	$125
Archaeologist	$87-$125
Archaeologist Technician	$79-$100
GIS/Graphics	$97
Administrative Assistant	$74

Flow West	Hourly Rate
Principal Engineering Geomorphologist	$225
Principal Engineer	$200

Flow West	Hourly Rate
Principal Geomorphologist	$200
Principal Planner	$200
Senior Environmental Engineer	$180
Staff Engineer /Modeler	$165
Staff Engineer /Modeler	$165
Staff Data Scientist	$165
Staff Data Scientist	$180
Staff Planner	$140
Staff Engineer	$140
Staff Engineer	$140
Administrative Support	$100
Staff Intern	$100

Other Charges

Mileage for standard vehicles (2WD) is charged at the IRS Standard Rates for the current year ($0.57/mile). Mileage for off-road (4WD) vehicles is charged at $0.75/mile. Travel expenses are billed at cost. UAV is charged only at the hourly technician's rate.

Outside services, equipment, and facilities not furnished directly by Panorama or our Subconsultants will be billed at cost plus 15% including, but not limited to:

- Shipments and express delivery
- Printing and photographic reproductions
- Rental of equipment
- Special fees, permits, insurance, etc.
- Subcontractor rates
- Supplies

Payment is net 30 days. Thereafter, one percent (1%) interest per month will be charged on the unpaid balance.

DUDEK

Fire Management Plan Consulting Services

PREPARED FOR

San Lorenzo Valley Water District

December 19, 2019

725 Front Street, Suite 400 . Santa Cruz, CA 95060 . 831.600.1400 . dudek.com

725 FRONT STREET, SUITE 400
SANTA CRUZ, CALIFORNIA 95060
T 831.600.1400 F 831.600.1401

1. Cover Letter

December 19, 2019

San Lorenzo Valley Water District
Attn: Holly Hossack, District Secretary
13060 Highway 9
Boulder Creek, California 95006

Subject: Statement of Qualifications for Fire Management Plan Consulting Services

Dear Ms. Hossack,

Dudek is pleased to submit this proposal to the San Lorenzo Valley Water District (SLVWD) to provide professional fire management planning consulting services. Based on the Request for Qualifications, we have prepared a focused response outlining Dudek's qualifications to assist SLVWD in preparing a District-wide Fire Management Plan.

Dudek combines a rare, in-house mix of forestry, fire protection planning, environmental planning, biological and cultural/archaeological resources analysis, geographic information systems (GIS) services, and fuel treatment/habitat restoration expertise under one roof. Depending on the needs of the project, we can draw from this expertise. We have Registered Professional Foresters (RPFs) on staff that have direct experience in fuel reduction planning, as well as coordinating with landowners, agencies such as the California Department of Forestry and Fire Protection (CAL FIRE), and contractors to successfully develop and implement fire management projects.

Scott Eckardt is an RPF and will serve as project manager and as the primary point of contact for SLVWD. Project work will largely be supported by our forestry and fire planning staff. We appreciate the opportunity to submit this proposal and look forward to assisting SLVWD with this important project. If you have any questions regarding our qualifications or need any additional information, please feel free to contact Scott at 530.863.4650 or at seckardt@dudek.com.

Sincerely,

Joseph Monaco
President
605 Third Street
Encinitas, California 92024
e: jmonaco@dudek.com
p: 760.942.5147

Scott Eckardt, RPF
Project Manager
853 Lincoln Way, Suite 208
Auburn, California 95814
e: seckardt@dudek.com
p: 530.863.4650

Joe Monaco is an officer authorized to execute legal documents on behalf of Dudek.

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2. Background

The Dudek Advantage

We are a California-based environmental firm with 14 offices and more than 600 planners, scientists, civil engineers, contractors, and support staff. We assist private and public clients on a broad range of projects that improve our clients' communities, infrastructure, and natural environment. From planning, design, and permitting through construction, we help move projects forward through the complexities of regulatory compliance, budgetary and schedule constraints, and conflicting stakeholder interests.

Our professionals find practical, cost-effective approaches to help you achieve your specific project goals. We work to build your trust, which allows us to offer constructive solutions with your project's long-term success in mind.

Our team focuses on:

- **Natural Resource Management** We provide science-based analysis for preserve design and species survey methodologies, coupled with habitat planning, permitting, design, and installation expertise.
- **Infrastructure Development** We have in-depth experience managing projects where science, regulatory requirements, and community and stakeholder interests converge. We guide clients through analysis, permitting, and implementing private development and public infrastructure projects.
- **Regulatory Compliance** Our scientists and planners have established strong working relationships with the local staffs of California and federal regulatory agencies. Our knowledge of agency expectations, inter-agency agreements, and local regulations involving your project are vital for keeping projects moving forward and obtaining final approvals.

Dudek at a Glance

- *Multidisciplinary environmental and engineering services*
- *600+ employees*
- *11 California offices*
- *Founded in 1980; employee-owned*
- *Top 130 U.S. Environmental Firms (Engineering News-Record)*
- *92% rating for reliability, timeliness, and responsiveness (Dun & Bradstreet, 2016)*
- *More than 160 on-call environmental contracts throughout California*

As a midsize firm, we provide the personal service of project managers who stay with your project from start to finish, combined with the breadth and depth of capabilities characteristic of larger firms, to meet your project's requirements. Our project managers are empowered to be problem solvers with the ability to make decisions in a timely fashion to keep project momentum moving forward. We are proud of our low employee turnover; our staff's long tenure means the project manager you see at the bidding stage will likely be with you at project completion.

Diverse Capabilities

Our depth and breadth of experience means we can quickly assemble and mobilize the appropriate level of service to match your project needs and budget. Our 600+ person in-house team includes:

- American Institute of Certified Planners–certified environmental planners
- California Department of Fish and Wildlife– and U.S. Fish and Wildlife Service–certified biologists
- Registered professional archaeologists
- Registered landscape architects
- Registered environmental assessors
- Certified arborists and foresters
- Professional foresters
- Noise and air quality specialists
- Accredited Leadership in Energy and Environmental Design professionals
- Certified GIS professionals
- Certified hydrogeologists
- Licensed geologists
- Licensed professional engineers
- Licensed contractors

Dudek Services

- *Agency Permitting*
- *Biological Surveys and Monitoring*
- *CEQA/NEPA Compliance*
- *Coastal Planning/Permitting*
- *Cultural Resources*
- *Civil Engineering*
- *Construction Management*
- *Environmental Planning*
- *Habitat Restoration and Management*
- *Hazardous Materials Testing*
- *Hydrology*
- *Urban Forestry*
- *Wildfire Protection Planning*
- *Water Conservation Planning*
- *Water Infrastructure Planning and Design*

Our History

The firm was co-founded in 1980 in Encinitas, California, by Frank Dudek as a small civil engineering consulting practice working for municipal wastewater agencies and private land developers in San Diego County. The firm steadily grew its civil engineering practice through the 1980s, expanding throughout Southern California.

In 1990, the firm started an environmental practice in response to expanding state and federal environmental regulations. Primarily through organic growth and limited acquisitions of small firms, Dudek has grown to a 600-person multidiscipline environmental and engineering firm with offices throughout California, Hawaii, and Oregon. Dudek is ranked as one of the Top 130 U.S. Environmental Firms (Engineering News-Record, 2019). Joe Monaco serves as president with Frank Dudek as CEO/chairman of the board.

Early on, the firm enabled direct purchase of shares by employees. In addition, the firm started an employee stock ownership plan in the early 2000s, and has regularly funded the plan from profits. As a result, the company is positioned to successfully fund ownership transfer and continue as an independent, employee-owned firm.

The firm maintains a flat organizational structure that empowers project managers to be decision makers and entrepreneurial. Internal administrative processes are kept to a minimum to limit internal bureaucracy and to enable project managers to be flexible and responsive to meet client needs.

Bankruptcy

Dudek has no history of bankruptcy filing.

Contract/Subcontract Litigation Summary

City of Carlsbad vs. Ledcor Construction Inc.

On June 13, 2016, the City of Carlsbad filed a civil complaint in California Superior Court, County of San Diego, against Ledcor Construction Inc. Dudek was named as a co-defendant. The project architect, RRM Design Group, was also later named as a defendant. The suit was related to construction of the City's First Responder Training Center. Dudek served as construction manager for the City on the project. Dudek denied any liability in the matter. The matter has been resolved between the City and Dudek and was dismissed in August 2019.

Terra Lago Community Association v. Indo Land Ventures, LLC, et al.

Terra Lago Community Association sued Indio Land Ventures for alleged construction defects arising out of the construction of a residential development complex located in Indio, California. Dudek was named as one of many cross-defendants for its role in preparing the lake-liner design; the other parties were involved in various construction aspects of the lake. Dudek did not participate in any supervision or other construction management activities. Plaintiff initially demanded $25,275 to settle the claims against Dudek, and their claims ultimately resolved in full for $10,000. The parties executed a settlement and release agreement which the Court approved and the case was dismissed.

Forestry and Fire Planning

Dudek's forestry and fire planning team understands the need to maximize the ecological and aesthetic benefits of trees and forests while balancing the need for forest management activities. Dudek foresters prepare management plans to promote individual tree or forest health, minimize fire risk, and protect assets and special-status resources. Our foresters understand the regulatory environment in California, have drafted numerous management plans, have processed plans and permits through the California Department of Forestry and Fire Protection (CAL FIRE), and can evaluate project proposals thoughtfully and critically.

Dudek provides practical solutions for forest and fuel management. We offer the following professional services:

- Wildfire hazard evaluations and management plan preparation
- Fuel/vegetation management plan preparation
- Fuel modification zone/defensible space assessments
- Development of fuel treatment prescriptions
- Evaluation of individual trees, stands, and forests
- GPS mapping
- GIS analysis and modeling of fire behavior
- Contractor bid package preparation
- Technical evaluation of individual trees and assessment of health and structural condition
- Assessments and recommendation regarding pests and disease
- Preparation of technical reports, management plans, and CEQA documents related to forest and fire management
- Timber harvest plan/exemption preparation
- Presentation of findings to decision-making bodies

3. Experience

Dudek has completed similar fire management planning assignments for various clients throughout California, including for municipalities, agencies, developers, and conservation partnerships. The following is a representative sample of successful projects completed by Dudek in the past 10 years, which demonstrate our ability to perform the work described in the RFP, including the participation of key proposed personnel.

Oakland Fire Department Vegetation Management Plan

Client: Oakland Fire Department
Reference: Angela Robinson-Pinon, Oakland Public Works, 510.238.3707, ARobinsonPinon@oaklandca.gov

Dudek recently prepared a Draft Vegetation Management Plan (VMP) for the City of Oakland Fire Department. The scope of the VMP covers nearly 2,000 acres of City-owned land, along with over 300 miles of roadside treatment areas in the City's designated Very High Fire Hazard Severity Zone. The Draft VMP outlines vegetation management techniques and standards to reduce the likelihood of extreme fire behavior and promote public and firefighter safety. The management recommendations included in the Draft VMP draw on field data, research, principles of vegetation/fuels management, and the results of GIS-based fire behavior modeling using FlamMap software. Prioritization of vegetation treatment areas in the Draft VMP considers these variables as well as the size, physical characteristics, and spatial distribution of City-owned parcels throughout the Plan area. The Draft VMP is currently out for public and stakeholder review, and Dudek will revise the plan to incorporate feedback. To date, Dudek has presented at six public/stakeholder meetings to gather input and receive feedback on the Draft VMP. In addition, we have conducted numerous phone interviews to gain feedback from stakeholders and City staff. Preparation of the Environmental Impact Report for the VMP is underway and Dudek is supporting the project team during its preparation.

San Mateo Hazardous Fuels Reduction Program

Client: Fire Safe San Mateo
Client Contact: Denise Enea, 650.851.6206, denea@woodsidefire.org

Dudek foresters prepared an Environmental Review Report Form (ERRF) per CAL FIRE standards to evaluate the environmental effects of fuel management activities being conducted by Fire Safe San Mateo within the City of San Carlos' Eaton and Big Canyon Parks. Completion of the project involved conducting field surveys to evaluate fuel conditions, refine fuel management standards, and coordinate with regulatory agencies. Dudek then prepared and submitted CAL FIRE's ERRF form for project-related CEQA compliance. Biological field surveys and development of special-status species avoidance and impact minimization measures were also completed as a component of the project. The ERRF was approved and fuel reduction projects are currently underway.

Mt. Madonna County Park Forest Health Plan

Client: Santa Clara County Parks Department
Reference: Jeremy Farr, Natural Resources Planner, 408.355.2360, Jeremy.Farr@PRK.SCCGOV.ORG

Dudek foresters prepared a Forest Health Plan for the 4,600-acre Mt. Madonna County Park. Santa Clara County Parks engaged Dudek to develop a plan to proactively address management of forest threats (pests/pathogens, wildfire, invasive species) to maintain high recreational value in the Park. The Park is located in the southern Santa Cruz Mountains and is characterized by varied terrain, dominated by redwood forests and oak woodlands, and includes numerous recreational amenities (campsites, trails, picnic areas). The Park is used by the public year-round. Preparation of the plan involved extensive field surveys to evaluate forest health conditions, identification of management actions and projects to address observed forest health issues, outlining management recommendations and a plan implementation framework, and developing special-status species avoidance and impact minimization measures. The draft plan was completed and finalization of the plan's environmental document is underway.

Professional Forestry Services

Client: County of Fresno
Client Contact: Adan Ortiz, 559.600.7630, aortiz@co.fresno.ca.us

Dudek is currently providing technical arboriculture and forestry services for the County of Fresno. The County of Fresno has embarked on a project to expedite the removal and disposal of dead and dying hazardous trees. The Southern Sierra Nevada range suffered significant tree mortality due to the drought and subsequent bark beetle attacks. The County of Fresno is addressing the problem in response to Governor Brown's 2015 State of Emergency proclamation, which included provisions for removing and disposing of dead and dying hazardous trees. Dudek is responsible for counting, identifying, marking, and mapping all dead and dying trees that threaten public rights-of-way and public infrastructure. Multiple grant funding sources are being used for this project (CAL FIRE State Responsibility Area Fire Prevention Grants, California Disaster Assistance Act Grants) and Dudek is providing technical forestry and arboricultural expertise to assist the County in project implementation.

Teague Hill Neighborhood Shaded Fuel Break

Client: Fire Safe San Mateo
Client Contact: Denise Enea, 650.851.6206, denea@woodsidefire.org

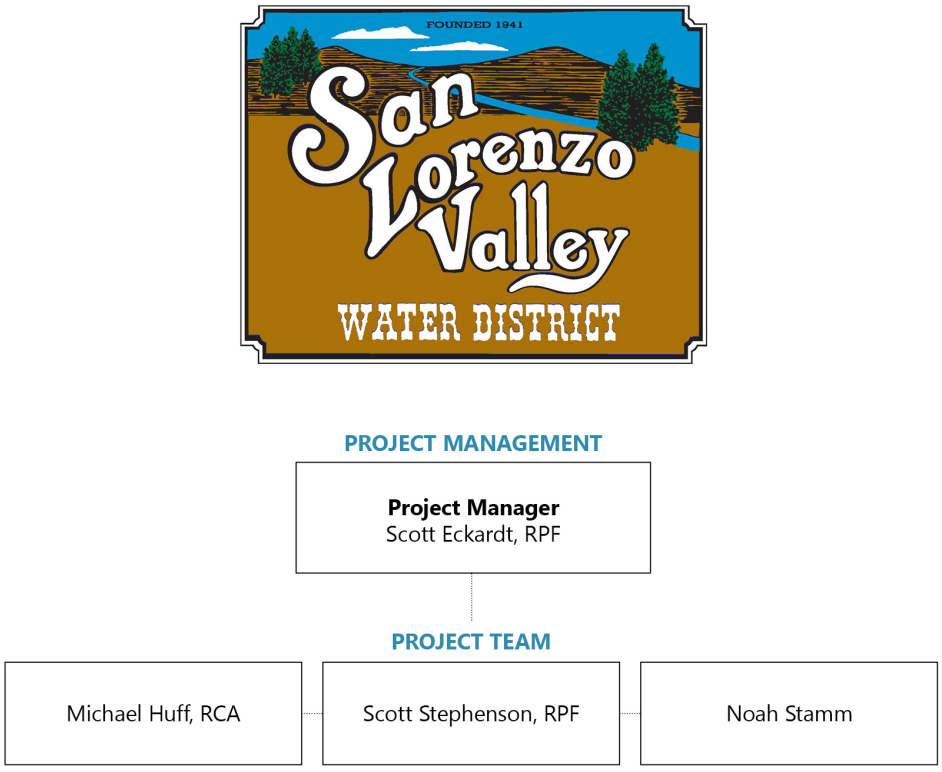
Dudek provided detailed planning and environmental review for a proposed fuel reduction project proposed by Fire Safe San Mateo within Midpeninsula Regional Open Space District's Teague Hill Preserve. This project was funded by a CAL FIRE Fire Prevention Program Grant. Dudek's work on the project involved conducting hazardous fuels assessments, developing a fuels treatment prescription, conducting biological and archaeological resources assessments to evaluate potential sensitive resource constraints, and an environmental review per CAL FIRE permitting requirements to evaluate the environmental effects of the proposed project. Working with the client, Dudek was able to bring the project to a "project ready" stage and move the project quickly through the planning and permitting process without compromising the client's goals of wildland fire risk reduction.

4. Staff Experience

The Dudek team is in an ideal position to assist SLVWD with an FMP because of our specialized forestry and fire planning staff, broad services that support successful management plans, and recent relevant experience in fire and forest management planning projects in Northern California.

Figure 1 presents our proposed team organization, and is followed by brief biographical summaries of each proposed staff member. Resumes are provided for all personnel shown in the organization chart in **Appendix A**.

Figure 1. Organizational Chart



Project Manager

Scott Eckardt, RPF

Scott Eckardt is a project manager, licensed forester, and certified wildland fire manager with 18 years' professional experience in the natural resource management field. He specializes in fire protection planning, fire hazard assessment, and forest/woodland management in open space and WUI areas throughout California. Project experience includes assessment of fire and fuel hazard conditions; WUI inspections for local fire departments; preparation of FPPs, Community Wildfire Protection Plans (CWPPs), and Vegetation Management Plans (VMPs); modeling fire hazard and fire behavior; GPS mapping; environmental monitoring; and preparation of assessment reports, forest and fuel management plans, and CEQA technical documents. In addition, he routinely uses GIS to analyze resource data, prepare project plans, develop project maps, conduct project impact analyses, evaluate mitigation opportunities, and model fire behavior and wildfire hazard conditions. Mr. Eckardt previously worked for CAL FIRE in South Lake Tahoe where he conducted fuel reduction, vegetation thinning, and forest rehabilitation projects.

Education

California State University, Long Beach
MA, Geography

California Polytechnic State University (Cal Poly), San Luis Obispo
BS, Forestry and Natural Resources Management

Certifications

Registered Professional Forester, No. 2835

Certified Arborist, No. WE-5914A

Certified Wildland Fire Manager

Wildland Fire Control Certification

Professional Affiliations

Association of Environmental Professionals

Association for Fire Ecology

International Society of Arboriculture

Project Team

Michael Huff, RCA

Michael Huff is an experienced fire protection planner and natural resources consultant with 24 years' experience in this field. He is a principal in the firm and manages Dudek's Urban Forestry and Fire Protection Planning group that includes several arborists, foresters, GIS specialists, fire protection specialists, fire inspectors, plan reviewers, water conservation specialists, and landscape architects. Mr. Huff specializes in management of:

- Community-wide and project-specific FPPs;
- Fire behavior and fuel assessment projects;
- WUI fire management plans;
- Wildfire hazard reduction projects;
- CEQA supporting technical documents;
- Urban and community forest management plans; and
- Forest and tree inventories.

Mr. Huff possesses considerable project issue resolution experience and focuses on working within the regulations to provide creative, cost-saving solutions to his clients.

Education

Northern Arizona University
BS Forest Management, Suma cum Laude

Certifications

Registered Consulting Arborist, No. 640

Certified Wildland Fire Ecologist

Certified Arborist, No. WE-4276A

Professional Affiliations

Member – National Fire Protection Association – International

Member – California Fire Chief's Association – Fire Prevention Officers

Member – CFCA WUI Committee, Chair Vegetation Committee

Instructor – Annual Fire Prevention Officer's Institute

San Diego County DPLU – Approved Fire Protection Planner

Scott Stephenson, RPF

Scott Stephenson is a registered professional forester and certified arborist with 11 years' experience in the public and private sectors. Mr. Stephenson possesses advanced knowledge of the California Forest Practice Rules and has experience in all aspects of forest management, including assessment and mapping of forested landscapes; timber stand evaluations; silvicultural prescriptions; reforestation; fire salvage; fuels reduction; hazard tree assessments; field data collection and evaluation using GPS and GIS technology; and preparing timber harvest plans, exemptions, and emergency notices. In addition, he has experience developing contract scopes of work, overseeing monitoring programs, supervising contractors and licensed timber operators, preparing biological and cultural assessments, and conducting biological and cultural surveys.

Education

Cal Poly, San Luis Obispo
BS, Forestry and Natural Resources Management (GIS minor)

Certifications

Registered Professional Forester (RPF), No. 2949

Certified Arborist, No. WE-11624A

Certified Archaeological Surveyor, No. 134

Professional Affiliations

California Licensed Foresters Association

International Society of Arboriculture

Noah Stamm

Noah Stamm is an urban forestry analyst with 10 years' experience in fire prevention, wildland fire and fuels management, WUI fire protection, urban forestry consulting, make-ready engineering, and GIS. Mr. Stamm has participated in numerous projects throughout California dealing primarily with fuel hazard reduction in the WUI communities. He also has experience with consulting utility forestry, impact analysis studies, tree hazard evaluations, and on-site tree monitoring and protection. These projects include assessment and inspections of hazardous fuel reduction modifications to communities within the WUI, inventory of oak woodlands, monitoring of native oaks and other trees on development sites, GPS mapping, data analysis, and preparation of assessment preservation plans. In addition, he routinely used GIS, including Microstation, Pole Foreman, ArcMap, and ArcGIS to perform make-ready engineering to utility poles.

Education

Cal Poly, San Luis Obispo
BS, Forestry and Natural Resources Management (Wildland Fire and Fuels Management concentration)

Certifications

Oxnard College Regional Firefighter Academy, Firefighter 1

Professional Affiliations

International Society of Arboriculture

5. Subconsultant's Experience

The Dudek team does not anticipate the use of subconsultants on this project. Dudek's midsize 600-plus-person team means we are small enough to provide customized services to meet the needs of our clients, while still offering the depth of experience needed to provide thorough, effective work products and strategic guidance. Our flat and integrated organizational structure empowers project managers to seek input from our diverse group of seasoned professionals, and act decisively on our client's behalf, saving SLVWD time and money.

6. Client References

Dudek has provided fire protection planning and management services to numerous clients, including municipalities, developers, and conservation partnerships in Santa Cruz County. **Table 1** presents client references that can attest to our quality of work products and services.

Table 1. Client References

Client	Project	Contact Information
Oakland Fire Department (OFD)	Vegetation Management Plan	Angela Robinson-Pinon Oakland Public Works (formerly with OFD) 510.238.3707 ARobinsonPinon@oaklandca.gov
Fire Safe San Mateo	San Mateo Hazardous Fuels Reduction Program and Teague Hill Neighborhood Shaded Fuel Break	Denise Enea Woodside Fire Protection District 650.851.6206 denea@woodsidefire.org
Mt. Madonna County Park Forest Health Plan	Santa Clara County Parks Department	Jeremy Farr Santa Clara County Parks Department 408.355.2360 Jeremy.Farr@PRK.SCCGOV.ORG
County of Fresno	Professional Forestry Services	Adan Ortiz Department of Public Health, Office of Emergency Services 559.600.7630 aortiz@co.fresno.ca.us

7. Fee Schedule

The fee schedule has been provided as a separate file per the RFQ requirements.

Appendix A

Resumes

Scott Eckardt, RPF

Project Manager, Licensed Forester

Scott Eckardt is a project manager, licensed forester, and certified wildland fire manager with over 20 years' professional experience in the natural resource management field. He specializes in fire protection planning, fire hazard assessment, and forest/woodland management in open space and wildland urban interface (WUI) areas throughout California. Project experience includes assessment of fire and fuel hazard conditions; WUI inspections for local fire departments; preparation of fire protection plans (FPPs), community wildfire protection plans (CWPPs), and vegetation management plans (VMPs); modeling fire hazard and fire behavior; global positioning system (GPS) mapping; environmental monitoring; and preparation of assessment reports, forest and fuel management plans, and California Environmental Quality Act (CEQA) technical documents. In addition, he routinely uses geographic information system (GIS) to analyze resource data, prepare project plans, develop project maps, conduct project impact analyses, evaluate mitigation opportunities, and model fire behavior and wildfire hazard conditions. Mr. Eckardt previously worked for the California Department of Forestry and Fire Protection (CAL FIRE) in South Lake Tahoe, where he conducted fuel reduction, vegetation thinning, and forest rehabilitation projects.

Education

California State University, Long Beach
MA, Geography, 2006

California Polytechnic State University, San Luis Obispo
BS, Forestry and Natural Resources Management, 1998

Certifications

Registered Professional Forester (RPF), No. 2835

Certified Arborist, No. WE-5914A

Association for Fire Ecology Certified Wildland Fire Professional

Professional Affiliations

Association of Environmental Professionals

Association for Fire Ecology

International Society of Arboriculture (ISA)

Project Experience

Wildfire Specialist, Hazard Mitigation Grant Program (HMGP) Feasibility and Effectiveness Reviews, FEMA Region IX. Mr. Eckardt supported the HMGP review process for FEMA Region IX by conducting initial reviews of subapplications for wildfire mitigation projects, focusing on evaluating whether proposed projects meet FEMA standards for inclusion in the HMGP, whether the projects were feasible, and whether the projects would effectively mitigate wildfire hazard. Mr. Eckardt also coordinated with other members of the review team and ran BCA reviews where necessary and where project documentation supported a re-analysis.

Teague Hill Shaded Fuel Break Project, Fire Safe San Mateo, San Mateo County, California, Mr. Eckardt managed preparation of an Environmental Review Report Form (ERRF) per CAL FIRE standards to evaluate the environmental effects of fuel management activities being conducted by Fire Safe San Mateo within the Teague Hill Preserve, owned by Midpeninsula Open Space District. This project was funded by a CAL FIRE Fire Prevention Program Grant and project tasks involve conducting forest resources and fuels surveys and biological and archaeological resources field surveys to evaluate potential constraints to proposed fuel reduction activities. Preparation of the ERRF form was conducted for project-related environmental compliance under the California Environmental Quality Act.

Vegetation Management Plan, City of Oakland, California. Currently preparing a Vegetation Management Plan (VMP) for the City of Oakland Fire Department. Scope of the VMP covers nearly 2,000 acres of City-owned land, along with over 300 miles of roadside treatment areas in the City's designated Very High Fire Hazard Severity Zone. The VMP will outline vegetation management techniques and standards to reduce the likelihood of extreme fire behavior and promote public and firefighter safety. The management recommendations included in the VMP draw on field data, research, principles of vegetation/fuels management, and the results of GIS-based fire behavior modeling using Flam Map software. Prioritization of vegetation treatment areas will consider these variables as well as the size, physical characteristics, and spatial distribution of City-owned parcels throughout the VMP area.

Forest Health Plan for Mt. Madonna County Park, Santa Clara County Parks, Santa Clara County, California. Served as the lead forester and project manager in developing a forest health plan for the 4,600-acre Mt. Madonna County Park. Santa Clara County Parks engaged Dudek to develop a plan to proactively address management of forest threats (pests, diseases, fire hazard) to maintain high recreational value in the Park. The Park is located in the southern Santa Cruz Mountains and is characterized by varied terrain redwood forests and oak woodlands, and includes numerous recreational amenities (campsites, trails, picnic areas). The Park is used by the public year-round. The plan identified forest health threats in the park and identified specific projects and general management recommendations to be implemented by County Parks over a 20-year period to enhance overall forest health and reduce fire hazard.

Professional Forestry Services for Tree Mortality Project, County of Fresno, California. Serving as the project manager and providing technical arboriculture and forestry services for the County of Fresno. The County of Fresno has embarked on a project to expedite the removal and disposal of dead and dying hazardous trees; Dudek is identifying and mapping these trees. The Southern Sierra Nevada range suffered significant tree mortality due to the drought and subsequent bark beetle attacks. Fresno County is addressing the problem in response to Governor Brown's 2015 State of Emergency proclamation, which included provisions for removing and disposing of dead and dying hazardous trees. Dudek is responsible for counting, identifying, marking, and mapping all dead and dying trees that threaten public rights-of-way and public infrastructure.

Professional Forestry Services for Fuel Management Grant, City of San Carlos, California. Mr. Eckardt managed planning and environmental review services in support of a FEMA grant-funded fuel management project being implemented by the City of San Carlos. The project involved field assessment, biological and cultural resource surveys, and environmental review under the California Environmental Quality Act (CEQA). Proposed fuel management activities are planned on approximately 100 acres of community open space in the City's wildland urban interface (WUI) and include grazing, brush and tree thinning/pruning, herbicide treatment of invasive species, and vegetation chipping and mastication.

Wildfire Specialist, FEMA FY18 National Technical Review (NTR). Mr. Eckardt supported the NTR process by conducting Quality Assurance (QA) reviews of preliminary subapplications reviews for wildfire mitigation projects. The QA reviews focus on determining whether the subapplication package accurately describes the proposed project and whether documentation is provided to support a determination of project feasibility. Mr. Eckardt also coordinated routinely with other members of the review team and re-analyzed subapplicant's BCA reviews where necessary and where project documentation supported a re-analysis.

Community Wildfire Protection Plan (CWPP) Preparation and Unit Fire Plan Update, San Luis Obispo County Fire Department/CAL FIRE, San Luis Obispo County, California. Served as the project manager and prepared the countywide unit fire plan and CWPP document for San Luis Obispo County. This project is the first effort in the state to integrate CAL FIRE unit planning and CWPP efforts with the intent of creating a community-focused fire planning document. The plan used CalMapper data sets to evaluate fire hazard and prioritize fuel reduction efforts to minimize wildfire risk. The plan is dynamic and will allow for integration of priorities from local, state, and federal agencies and serve as a mechanism for acquiring federal funding for hazardous fuel reduction projects. The project was completed in August 2012.

Michael Huff, RCA

Principal

Michael Huff is an experienced fire protection planner and natural resources consultant with 26 years' experience in this field. He is a principal in the firm and manages Dudek's Urban Forestry + Fire Protection Planning group which includes several arborists, foresters, GIS specialists, fire protection specialists, fire inspectors, plan reviewers, water conservation specialists, and landscape architects. Mr. Huff specializes in management of:

- Community-wide and project-specific fire protection plans;
- Fire behavior and fuel assessment projects;
- Wildland Urban Interface fire management plans;
- Wildfire hazard reduction projects;
- CEQA supporting technical documents;
- Urban and community forest management plans; and
- Forest and tree inventories.

Mr. Huff possesses considerable project issue resolution experience and focuses on working within the regulations to provide creative, cost-saving solutions to his clients.

Education

Northern Arizona University
BS Forest Management,
suma cum laude

Certifications

Certified Wildland Fire Ecologist, Association of Fire Ecology

Certified Arborist, International Society of Arboriculture, No. WE-4276A

Registered Consulting Arborist #640 American Society of Consulting Arborists

Professional Affiliations

Member - National Fire Protection Association - International

Member – California Fire Chief's Association – Fire Prevention Officers

Member - CFCA Wildland Urban Interface Committee, Chair Vegetation Committee

Instructor – Annual Fire Prevention Officer's Institute

San Diego County DPLU – Approved Fire Protection Planner

Project Experience

Wildland Fire Evacuation Plan, City of Santa Barbara Fire Department. Mr. Huff led a team of fire protection planners and traffic consultants in the analysis of wildfire triggered evacuation scenarios. The City commissioned this study to improve the way evacuations are triggered and executed during various wildfire scenarios. The project included analyzing the road network, modeling wildfire spread with the use of FARSITE, and development of recommendations for mitigating identified issues and improving the existing evacuation system.

Fire Protection Plan, Santa Barbara Botanic Garden, Santa Barbara, California. Mr. Huff managed the preparation of a fire protection plan for the proposed botanic garden expansion. The fire protection plan (FPP) included site specific fire behavior modeling, analysis of the option for on-site sheltering, and addressed all fire protection features that would be provided for the site's structures. Fuel modification was customized for this site based on the site's terrain and expected fire behavior. The project had been stalled due to fire hazard concerns before Dudek was engaged. The project's FPP was approved by the Santa Barbara County Fire Department and Board of Supervisors.

Wildland Fire Management Plan, Nature Reserve of Orange County. Mr. Huff managed and actively wrote much of a three volume wildland fire management plan for the 36,000-acre Nature Reserve of Orange County. The plan included extensive baseline establishment, identification of ignition sources, analysis of sensitive resources, assessment of repeatedly burned areas, and development of extensive recommendations for reducing the fire hazard to adjacent urban areas while maximizing habitat benefits. The plan provides 35 options for hazard reduction throughout the Reserve along with a cost benefit analysis for implementing the options.

Fire Protection and Evacuation Plan, South Orange County Wastewater Authority. Mr. Huff conducted assessments of the Coastal and Regional Treatment Plants and developed comprehensive fire protection plans to harden the facilities from potential effects from wildland fires. Numerous recommendations were generated and focus on preventing ember intrusion into structures, providing restrictions on activities on fire weather days (Red Flag Warnings), providing defensible space, and mapping out a clear procedure for early evacuation from the remote facilities as well as a back-up shelter in place alternative when evacuation would be unsafe.

Emergency Response and Evacuation Plan, Laguna College of Art + Design, Laguna Beach, California. Mr. Huff conducted an all-hazards assessment of the college's 4 campus locations and developed specific, customized responses for each of several potential hazard conditions, including wildfire. The college is located within a fire corridor and wildfire protection, evacuation planning, and provisions for on-site sheltering were analyzed. Recommendations were provided to improve the college's ability to remain safe during emergencies

Fire Protection Plan, Santa Monica Mountains Conservancy, Malibu, California. Mr. Huff led a team of fire protection specialists in the preparation of a comprehensive fire protection plan (FPP) for a park facility expansion in the Malibu foothills. The project included expansion of administrative facilities as well as camping facilities at four conservancy park sites. Among the challenges that were overcome with the FPP were primary access issues, evacuation planning, on-site sheltering, open flame prohibitions, remote camping and dispersed hiking in fire-prone areas, and unique planned uses for the administration facilities that would accommodate large groups and events. The plan received approval by the California Coastal Commission.

Fire District Capabilities Analysis, Lilac Hills Ranch, San Diego County. Dudek and Hunt Research conducted a comprehensive evaluation of the existing Deer Springs Fire Protection District. The study was triggered by a development project that was in need of fire service, but could not strictly meet the County General Plan response times. The study evaluated the fire department's staffing, fire station distribution, call volumes, capacity to serve additional calls, and recommended four options for efficiently serving the new community.

Fire Response Analysis for Large Solar Facility, San Diego County. Dudek and Hunt Research conducted an analysis of the potential fire hazards associated with large solar facilities and specifically with new technology panels that are concentrated photovoltaic cells on sun tracking mounts. The study also analyzed the fire response capabilities of nearby fire agencies and provided recommendations for improving the ability of existing firefighters to respond to these facilities. The project also evaluated some 20 potential mitigation measures that would be available to the fire agencies via project funding that would assist in reducing fire hazard, improving community evacuation, and facilitating faster emergency medical response in the area.

Newland Sierra Fire Protection Plan and Wildland Fire Evacuation Plan. Mr. Huff managed and the preparation of and performed analysis and coordination of a fire protection plan for a 1,500-acre, 2,200-unit planned community in San Diego County. The project includes wildland urban interface and based on the fire behavior assessments and analysis, specific fire protection measures were developed to the satisfaction of San Diego County Fire Authority and Deer Spring Fire Protection District. In addition, Mr. Huff prepared a wildfire evacuation plan for the Project that included analysis of the estimated time required to evacuate the project and contingency options available to the project if evacuating is unsafe.

West Coyote Hills Fire Protection Plan and Assessment, Chevron, Fullerton, California. Mr. Huff managed the preparation of a fire protection plan for a 500-acre, 1,600-unit planned community in Fullerton. The project includes wildland urban interface and based on the fire behavior assessments and analysis on the site, proposed reduced fuel modification and native habitat within fuel modification zones in areas that include reduced fire intensity. The net result of the proposed fuel modification zones is a reduction in native habitat impacts with fire behavior modeling backed justifications for the reduced impacts.

On-Call Fire Plan Review/3rd Party Consultant, Orange County Fire Authority, Orange County, California. Mr. Huff provides as-needed review of fuel modification plans and provides special studies regarding fire behavior and fire risk assessments, and alternative materials and methods for the Orange County Fire Authority. To date, Dudek has provided review and comment of fire behavior modeling and proposed fuel modification and structural hardening for a large, master planned community in southern Orange County. Mr. Huff was also involved with research and preparation of a report on the efficacy of utilizing water cannons as an alternative for full fuel modification width.

On-Call Fire Consulting, Laguna Beach Fire Department, Laguna Beach, California. Mr. Huff provides as-needed consulting to the Laguna Beach Fire Department. Among tasks requested are site fire risk assessments, vegetation hazard assessments, fire behavior modeling, fuel ranking, Alternative Materials and Methods letters, shelter in place assessments, Red Flag Warning Action Plans, and fuel reduction monitoring and inspections.

Community Wildfire Protection Plans, Santa Clara County FireSafe Council, Santa Clara County, California. Project manager for preparation of community wildfire protection plans for the Santa Clara County FireSafe Council. The plans focus on two areas, the east foothills area and the Croy fire area. Responsible for interfacing with approximately 20 different fire personnel, along with community groups throughout the County. Managed and participated in site fuel assessments, fire behavior modeling, risk assessments, and preparation of several chapters of the final plan.

Tejon Mountain Village Fire Protection Plan, Kern County, California. Mr. Huff assembled a fire protection planning team anchored by Dudek and Hunt Research on this 26,000-acre project site in southern California. Mr. Huff authored the report, integrated sub-consultant input, provided presentations to fire department personnel, managed fire behavior modeling using FlamMap, and worked closely with project biologists to minimize ecological impacts while providing fire protection.

Fuel Modification Zone Analysis and Fuel Management Program Development, Various Developers, Orange County, California. Assisted a wildland fire ecologist on several residential development projects in Orange County. Field assessments of existing vegetation types and fuel loads were followed by fuel model input and scenario outputs. Fuel management programs that justified deviations from the Orange County Fire Authority standards were provided, along with agency coordination and meeting attendance.

Hosp Grove Wildland Urban Interface Fire Behavior and Recommendation Study, Carlsbad Fire Department, Carlsbad, California. Conducted a wildfire hazard evaluation of the Hosp Grove, an approximately 80-acre eucalyptus forest in an urban area of Carlsbad. Dudek conducted wildfire behavior modeling to model the potential for a crown fire and based on that outcome, addressed the adjacent home fuel modification requirements and provided a summary with graphical output illustrating our findings and recommendations.

Stephen's Kangaroo Rat Habitat Management Plan, Riverside Habitat Conservation Authority, Riverside, California. Managed the Fire Management Plan for this project which provided overall fire management goals within each delineated SKR management unit. The units were delineated based on existing habitat and long-term objectives for maintaining or improving habitat for SKR. Dudek researched and developed fire history analysis, vegetation type ecology and responses to wildfire fire behavior, specific response procedures for each management unit, and created response maps for responding fire department personnel.

Fire Protection Plan Third Party Review, Rancho Cielo Shelter in Place Community, Rancho Santa Fe Fire Protection District. Provided third party review of an existing fire protection plan for the Cielo community. The existing plan was outdated and required updating according to new codes and new industry findings. Dudek confirmed fire behavior modeling results and provided updated language throughout the procedural manual which is distributed to Cielo homeowners.

Fire Protection Plan, Bella Vista Residential Development, Encinitas Fire Department, Encinitas, California. Mr. Huff prepared a fire protection plan providing "same practical effect" justification for reduced fuel modification width on this ridge top project in Encinitas. Sensitive biological habitat constrained the possible disturbance area. Mr. Huff interfaced regularly with the Fire Marshal, including on-site meetings to discuss the results of fire behavior modeling and the proposed measures to offset fuel modification. The fire protection plan was approved by the fire department and enabled construction of two additional luxury homes that would not have been possible otherwise.

PETCO Headquarters Wildfire Risk Assessment, City of San Diego, California. Performed a site assessment of the headquarters grounds to determine the potential wildfire vulnerability and provide recommendations to reduce the potential threat. Among the recommendations were active maintenance of unmaintained fuels on slopes, enforcement of smoking policies and use of butt receptacles, and regular maintenance of palm tree petticoats throughout the site.

Site fire hazard inspections, Red Flag Warning Action Plan, and Fuel Modification Monitoring, Anneliese's School's Willowbrook Campus, Laguna Beach, California. At the request of the Laguna Beach Fire Department, Mr. Huff was retained to provide site-wide assessment of wildfire vulnerability. The site assessment included evaluations of vegetative fuels, structural composition, fire protection systems, combustible storage on site, ignition sources, and school location. Among other facets of this project, a red flag warning action plan was devised to close school during extreme fire weather days, an emergency preparedness plan was prepared to guide evacuations during various scenarios, and a structural retrofit timeline was put in place to increase the ignition resistance of the main administration building.

Preplan Map Conversion for the Newport Beach Fire Department, Newport Beach, California. Managed a project which involved creation of a database for "pre-planning" fire management in high-priority structures for NBFD. This project involved the creation of digital access, layout and fire equipment maps, and associated property data for high-priority structures, which include hospitals, schools, apartments, and other high-occupancy buildings. Important components of the maps include site and building access and egress points, utilities, ventilation, elevators, and types of construction. These maps are also linked with associated property data that includes alarm and sprinkler conditions, property owner information, inspection schedules, and special hazard conditions. In addition, the maps are geo-referenced for future incorporation into the City's GIS.

Onyx Ridge Residential Development, Latitude 33, Rancho Santa Fe, California Fire Protection District. Mr. Huff prepared a shelter in place fire protection plan for this residential development project in Rancho Santa Fe. The project included development of 9 residential units on a ridgetop with one access. Mitigation measures were integrated into the fire protection plan to compensate for the access issue. Mr. Huff interfaced regularly with the Rancho Santa Fe Fire Protection District and the client through project approval.

Camp Expansion Fire Protection Plan, Salvation Army, Ramona, California. Mr. Huff managed and prepared a fire protection plan for this 600-acre project site. The Salvation Army proposes facility expansion to include several new structures including large multipurpose facilities. The fire protection plan outlines several customized mitigation measures for the site to compensate for the sole access identified as a key project issue. The project included FlamMap fire behavior modeling, site assessment, code review and application, customized fuel modification zone development, structural fire protection system recommendations, and planned infrastructure summaries.

Scott Stephenson, RPF

Forester

Mr. Stephenson is a Registered Professional Forester (RPF) and Certified Arborist with 10 years' experience in the public and private sectors. He possesses advanced knowledge of the California Forest Practice Rules and has experience in all aspects of forest management including assessment and mapping of forested landscapes, timber stand evaluations, silvicultural prescriptions, reforestation, fire salvage, fuels reduction, hazard tree assessments, field data collection and evaluation utilizing Global Positioning System (GPS) and geographic information system (GIS) technology. He has prepared and implemented multiple Timber Harvest Plans (THP), exemptions, and emergency notices. In addition, he has experience developing contract scopes of work, oversight of monitoring programs, supervision of contractors and Licensed Timber Operators (LTOs), preparation of biological and cultural assessments, and conducting biological and cultural surveys.

Education

California Polytechnic State University, San Luis Obispo
BS, Forestry and Natural Resources Management (GIS minor)

Certifications

Registered Professional Forester (RPF), No. 2949

Certified Arborist, No. WE-11624A

Certified Archaeological Surveyor, No. 134

S-290 Intermediate Wildland Fire Behavior

Professional Affiliations

California Licensed Foresters Association

International Society of Arboriculture

Project Experience

Professional Forestry Services for Tree Mortality Project, Fresno County, CA, 2017-Present. Mr. Stephenson is currently providing technical forestry services for Fresno County in support of a project to expedite the removal and disposal of dead and dying hazardous trees. The southern Sierra Nevada suffered significant tree mortality due to drought and bark beetle attacks, a situation which prompted a State of Emergency proclamation. The project entails identifying, marking, and mapping dead and dying trees and hazardous fuels conditions that threaten public rights-of-way and public infrastructure and assisting the County in obtaining necessary permits. The project is funded through multiple state-level grants.

Teague Hill Shaded Fuel Break Project, Fire Safe San Mateo, San Mateo County, CA, 2018-Present. Mr. Stephenson is providing planning and environmental review services in support of a grant-funded fuel management project proposed by Fire Safe San Mateo within the wildland-urban-interface of Teague Hill Preserve. He prepared the Environmental Review Report Form (ERRF) per CAL FIRE standards to evaluate the environmental effects of proposed fuel management activities. This project was funded by a CAL FIRE Fire Prevention Program Grant and project tasks involve conducting forest resources and fuels surveys and biological and archaeological resources field surveys to evaluate potential constraints to proposed fuel reduction activities. Preparation of the ERRF form was conducted for project-related environmental compliance under the California Environmental Quality Act.

Eaton-Big Canyon Shaded Fuel Break Project, Fire Safe San Mateo, San Mateo County, CA, 2017-2018. Mr. Stephenson provided planning and environmental review services in support of a grant-funded fuel management project proposed by Fire Safe San Mateo within the wildland-urban-interface of Eaton and Big Canyon Parks. He prepared the Environmental Review Report Form (ERRF) per CAL FIRE standards to evaluate the environmental effects of proposed fuel management activities. This project was funded by a CAL FIRE Fire Prevention Program Grant and project tasks involve conducting forest resources and fuels surveys and biological and archaeological resources field

surveys to evaluate potential constraints to proposed fuel reduction activities. Preparation of the ERRF form was conducted for project-related environmental compliance under the California Environmental Quality Act.

Professional Forestry Services for Fuel Management Grant, City of San Carlos, CA, 2018-Present. Mr. Stephenson is providing planning and environmental review services in support of a FEMA grant-funded fuel management project being implemented by the City of San Carlos. The project involves field assessment, biological and cultural resource surveys, and environmental review under the California Environmental Quality Act (CEQA). Proposed fuel management activities are planned on approximately 100 acres of community open space in the City's wildland urban interface (WUI) and include grazing, brush and tree thinning/pruning, herbicide treatment of invasive species, and vegetation chipping and mastication.

Wildfire Specialist, HMGP Feasibility and Effectiveness Reviews - FEMA Region IX, 2018-2019. Mr. Stephenson supported the HMGP review process for FEMA Region IX by conducting initial reviews of subapplications for wildfire mitigation projects, focusing on evaluating whether proposed projects meet FEMA standards for inclusion in the HMGP, whether the projects were feasible, and whether the projects would effectively mitigate wildfire hazard. Mr. Stephenson also coordinated with other members of the review team and re-ran the subapplicant's BCA reviews where necessary and where project documentation supported a re-analysis.

Wildfire Specialist, FEMA FY18 National Technical Review (NTR), 2019-Present. Mr. Stephenson is supporting the NTR process by conducting Quality Assurance (QA) reviews of preliminary subapplications reviews for wildfire mitigation projects. The QA reviews focus on determining whether the subapplication package accurately describes the proposed project and whether documentation is provided to support a determination of project feasibility. Mr. Stephenson also coordinates routinely with other members of the review team and re-analyzes subapplicant's BCA reviews where necessary and where project documentation supports a re-analysis.

Relevant Previous Experience

Lockheed Fire Salvage, Swanton Pacific Ranch, Davenport, California. Served as a forestry technician for Swanton Pacific Ranch for the preparation of a 556-acre fire salvage of 838 MMBF of second-growth coast redwood. Flagged harvest boundary perimeter and Watercourse and Lake Protection Zone buffers. Marked harvest trees in advance of tractor and helicopter logging operations. Recovered Continuous Forest Inventory (CFI) sample plots and collected damage and mortality data for stand and stock table depletion. Supervised reforestation crew, procured equipment, trained and scheduled crews, and tracked and reported progress to the Ranch Operations Manager. Supervised portable sawmill operations to supply lumber for new and refurbished ranch infrastructure. Tracked and reported log-deck inventory and lumber production. Trained employees in the safe operation and maintenance of equipment. Assisted with the reconstruction of a silt fence to permit passage of California red-legged frog (*Rana aurora*) in off-site mitigation.

Rim THP 1-09-107 SCR, Soquel Demonstration State Forest, Soquel, California. Served as a forestry aide for Soquel Demonstration State Forest for the preparation of a 158-acre THP including single-tree selection harvesting of 1.6 MMBF of second-growth coast redwood. Flagged harvest boundary perimeter and Watercourse and Lake Protection Zone buffers. Marked harvest trees in advance of tractor and horse logging operations. Surveyed harvest area for old-growth coast redwood and assessed trees with old-growth characteristics. Mapped old-growth locations with GPS and tagged trees with a unique identifier to facilitate future assessment and re-location. Assisted with emergency medical response to aid injured forest visitors. Provided emergency responders with location information, directions to the patient, and assistance with patient transport. Assisted with electroshock sampling in the East Branch of Soquel Creek. Collected steelhead (*Oncorhynchus mykiss*) fry via net and electroshock, and aided with processing of the captured steelhead. Collected stream temperature data via Hobo-Temp data loggers and prepared seasonal reports of findings.

Noah Stamm

Urban Forestry Analyst

Noah Stamm is an urban forestry analyst with 11 years' experience in fire prevention, wildland fire and fuels management, wildland-urban interface (WUI) fire protection, urban forestry consulting, make-ready engineering, and geographic information system (GIS). Mr. Stamm has participated in numerous projects throughout California dealing primarily with fuel hazard reduction in the WUI communities. He also has experience with consulting utility forestry, impact analysis studies, tree hazard evaluations, and on-site tree monitoring and protection .These projects include assessment and inspections of hazardous fuel reduction modifications to communities within the WUI, inventory of oak woodlands, monitoring of native oaks and other trees on development sites, GPS mapping, data analysis, and preparation of assessment preservation plans. In addition, he routinely used GIS, including Microstation, Pole Foreman, ArcMap, and ArcGIS to perform make-ready engineering to utility poles.

Education

California Polytechnic State University, San Luis Obispo
BS, Forestry and Natural Resources (Wildland Fire and Fuels Management concentration), 2009

Certifications

Oxnard College Regional Firefighter Academy, Firefighter 1

Professional Affiliations

International Society of Arboriculture

Project Experience

Resource Management

Rancho Santa Fe Covenant Forest Analysis, Rancho Santa Fe Association, San Diego County, California. Wrote Notices of Violation for non-compliant properties in accordance with Public Resources Code 4291 and Rancho Santa Fe Fire Protection District International Code Council-Wildland Urban Interface Code, 2008 Edition. Provided daily and weekly home/community inspections and re-inspections of hazardous fuel reduction modifications for those who do not comply with department codes and regulations. Created a Homeowners Firescape Landscape Guide. Reviewed, commented on, and inspected landscape plans and fuel modifications.

Hollywood Terrace Monitoring Project, Universal City Studios LLC, Los Angeles, California. Served as urban forester for Universal Studios monitoring project. Protected California live oaks (*Quercus agrifolia*) near various project sites on the studio's back lot. Tasks included inspecting overall health of trees, including looking for new growth from previous rains and inspecting the root or trunk damage.

Starway Expansion Project, Universal City Studios LLC, Los Angeles, California. Served as urban Forester and inspected the protected California live oaks near the construction job site. Tasks included inspecting overall health of trees, making sure fencing surrounded the tree protection zone, and providing clients with tree protection measures and recommendations.

Area 71 Oak Tree Support Project, Universal City Studios LLC, Los Angeles, California. Served as urban forester and monitored the protected California live oaks near the Area 71 job site, which is located on the back lot of Universal Studios. Inspected overall health of trees, including looking for new growth from previous rains and inspecting the root or trunk damage.

Universal Drive and Fung Lum Oak Monitoring Project, Universal City Studios LLC, Los Angeles, California. Served as urban forester. Monitored the protected California live oaks near the old Fung Lum job site along Universal Drive outside of Universal Studios. Tasks included inspecting overall health of trees, including looking for new growth from previous rains and inspecting the root or trunk damage.

Eucalyptus Internal Decay Evaluations, Irvine Community Development Company, California. Served as urban forester. Performed inventory and inspection for internal rot and decay of the eucalyptus trees throughout the Orchard Hill developments. Tasks included the use of Resistograph to determine the health of the eucalyptus trees by drilling into the trees' trunk 3, 6, and 9 inches from the ground, looking for cavities and rot.

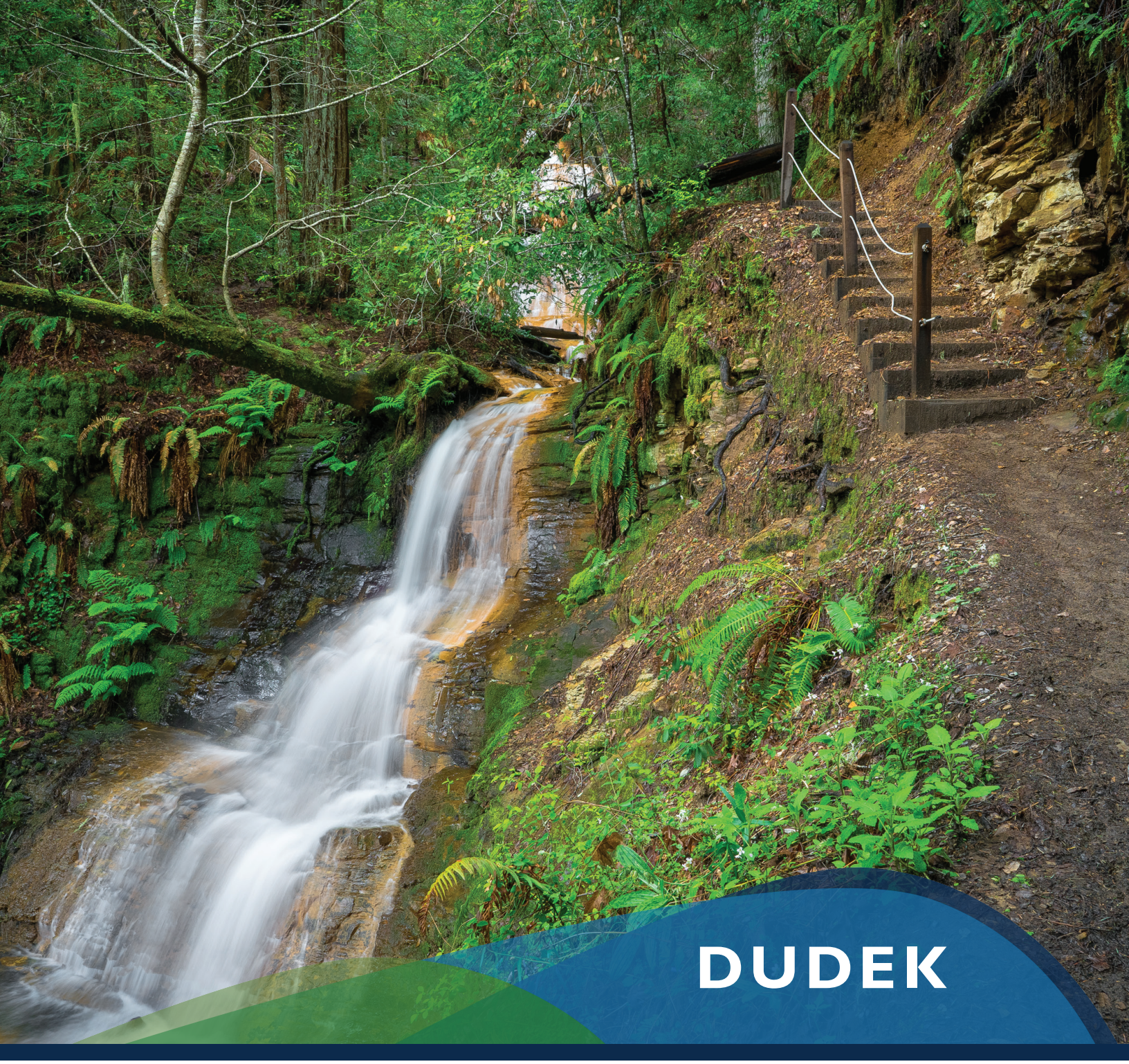
WUI Site Inspections, City of Newport Beach Fire Department, California. Served as urban forester and performed site visits and inspections of vegetation within 100 feet of homes located within the WUI. If vegetation that is found to be highly flammable or on the list of non-compliance, recommendations were made to remove such vegetation.

Relevant Previous Experience

Consumer's Energy Make-Ready Engineering, Michigan. Served as a make-ready engineer. Analyzed power/utility poles in their current state, making sure the poles were not overloaded with the current equipment. Performed make-ready engineering using Microstation and ArcMap to allow new applicant to attach their fiber optic cable to the pole without adding stress to the pole.

Specialized Training

- GIS (ArcMap, Microstation, and ArcGIS)
- Basic Wildland Firefighter Training (S130/S190)



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SOUTHERN CALIFORNIA
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Pasadena
Riverside
San Juan Capistrano

CENTRAL CALIFORNIA
Bakersfield
Santa Barbara
Santa Cruz

NORTHERN CALIFORNIA
Auburn
Oakland
Sacramento

HAWAI'I
Kailua, O'ahu

OREGON
Portland

FLORIDA
Lake Worth Beach

DUDEK
2020 STANDARD SCHEDULE OF CHARGES

Engineering Services

Project Director	$290.00/hr
Principal Engineer lll	$270.00/hr
Principal Engineer II	$260.00/hr
Principal Engineer I	$250.00/hr
Program Manager	$230.00/hr
Senior Project Manager	$230.00/hr
Project Manager	$225.00/hr
Senior Engineer III	$220.00/hr
Senior Engineer II	$210.00/hr
Senior Engineer I	$200.00/hr
Project Engineer IV/Technician IV	$190.00/hr
Project Engineer lll/Technician III	$180.00/hr
Project Engineer II/Technician II	$165.00/hr
Project Engineer I/Technician I	$150.00/hr
Senior Designer	$170.00/hr
Designer	$160.00/hr
Assistant Designer	$155.00/hr
CADD Operator III	$150.00/hr
CADD Operator II	$140.00/hr
CADD Operator I	$125.00/hr
CADD Drafter	$115.00/hr
CADD Technician	$110.00/hr
Project Coordinator	$120.00/hr
Engineering Assistant	$115.00/hr

Environmental Services

Project Director	$245.00/hr
Senior Specialist IV	$230.00/hr
Senior Specialist III	$220.00/hr
Senior Specialist II	$200.00/hr
Senior Specialist I	$190.00/hr
Specialist V	$180.00/hr
Specialist IV	$170.00/hr
Specialist III	$160.00/hr
Specialist II	$145.00/hr
Specialist I	$130.00/hr
Analyst V	$120.00/hr
Analyst IV	$110.00/hr
Analyst III	$100.00/hr
Analyst II	$90.00/hr
Analyst I	$80.00/hr
Technician IV	$90.00/hr
Technician III	$80.00/hr
Technician II	$70.00/hr
Technician I	$60.00/hr
Compliance Monitor	$95.00/hr

Data Management Services

GIS Programmer I	$185.00/hr
GIS Specialist IV	$160.00/hr
GIS Specialist III	$150.00/hr
GIS Specialist II	$140.00/hr
GIS Specialist I	$130.00/hr
Data Analyst III	$100.00/hr
Data Analyst II	$90.00/hr
Data Analyst I	$80.00/hr
UAS Pilot	$100.00/hr

Construction Management Services

Principal/Manager	$195.00/hr
Senior Construction Manager	$180.00/hr
Senior Project Manager	$165.00/hr
Construction Manager	$155.00/hr
Project Manager	$145.00/hr
Resident Engineer	$145.00/hr
Construction Engineer	$140.00/hr
On-site Owner's Representative	$140.00/hr
Construction Inspector III	$130.00/hr
Construction Inspector II	$120.00/hr
Construction Inspector I	$110.00/hr
Prevailing Wage Inspector	$135.00/hr

Hydrogeological Services

Project Director	$285.00/hr
Principal Hydrogeologist/Engineer II	$265.00/hr
Principal Hydrogeologist/Engineer I	$250.00/hr
Sr. Hydrogeologist IV/Engineer IV	$235.00/hr
Sr. Hydrogeologist III/Engineer III	$220.00/hr
Sr. Hydrogeologist II/Engineer II	$205.00/hr
Sr. Hydrogeologist I/Engineer I	$190.00/hr
Hydrogeologist VI/Engineer VI	$175.00/hr
Hydrogeologist V/Engineer V	$165.00/hr
Hydrogeologist IV/Engineer IV	$155.00/hr
Hydrogeologist III/Engineer III	$145.00/hr
Hydrogeologist II/Engineer II	$135.00/hr
Hydrogeologist I/Engineer I	$125.00/hr
Technician	$100.00/hr

District Management & Operations

District General Manager	$195.00/hr
District Engineer	$185.00/hr
Operations Manager	$160.00/hr
District Secretary/Accountant	$120.00/hr
Collections System Manager	$135.00/hr
Grade V Operator	$125.00/hr
Grade IV Operator	$110.00/hr
Grade III Operator	$100.00/hr
Grade II Operator	$75.00/hr
Grade I Operator	$70.00/hr
Operator in Training	$65.00/hr
Collection Maintenance Worker II	$75.00/hr
Collection Maintenance Worker I	$65.00/hr

Creative Services

3D Graphic Artist	$180.00/hr
Graphic Designer IV	$160.00/hr
Graphic Designer III	$145.00/hr
Graphic Designer II	$130.00/hr
Graphic Designer I	$115.00/hr

Publications Services

Technical Editor lll	$145.00/hr
Technical Editor ll	$130.00/hr
Technical Editor I	$115.00/hr
Publications Specialist lll	$105.00/hr
Publications Specialist ll	$95.00/hr
Publications Specialist I	$85.00/hr
Clerical Administration	$90.00/hr

Forensic Engineering – Court appearances, depositions, and interrogatories as expert witness will be billed at 2.00 times normal rates.

Emergency and Holidays – Minimum charge of two hours will be billed at 1.75 times the normal rate.

Material and Outside Services – Subcontractors, rental of special equipment, special reproductions and blueprinting, outside data processing and computer services, etc., are charged at 1.15 times the direct cost.

Travel Expenses – Mileage at current IRS allowable rates. Per diem where overnight stay is involved is charged at cost

Invoices, Late Charges – All fees will be billed to Client monthly and shall be due and payable upon receipt. Invoices are delinquent if not paid within 30 days from the date of the invoice. Client agrees to pay a monthly late charge equal to 1% per month of the outstanding balance until paid in full.

Annual Increases – Unless identified otherwise, these standard rates will increase 3% annually.

The rates listed above assume prevailing wage rates does not apply. If this assumption is incorrect Dudek reserves the right to adjust its rates accordingly.

14. COMMITTEES

The Board shall organize committees that are advisory to the Board with regard to matters within their respective areas of responsibility.

The five District standing committees are as follows: Administrative, Budget & Finance, Engineering, Environmental and Lompico Oversight. Each standing committee shall have no power or authority to commit the District or to take any action on behalf of the Board of Directors. Standing Committees shall hold meetings at such times, frequency and locations as deemed necessary by consensus of the committee members. Committees are encouraged to meet at least monthly.

Committee meetings shall be held in accordance with the provisions of the Ralph M. Brown Act. In order to promote attendance by Directors at Committee meetings without inadvertently creating a violation of the Ralph M. Brown Act, Directors that are not members of a committee are discouraged from attending but may attend as observers, and, if attending, shall not participate at the Committee's meeting.

Committee appointments will be reviewed by the full Board at a Board of Director's meeting in December of each Calendar Year, or as soon thereafter as practical. Applications to serve as a Public Member will be available at the District's Office or on-line at the District's website (www.slvwd.com). Public Member Applications will be reviewed by the full Board. Each committee member shall be appointed by a simple majority vote of the Board.

Regardless of the start date, the terms of public member(s) of the Administrative, Budget & Finance, Engineering and Environmental Committees shall end on December 31st of each year.

Members of the public shall serve on no more than one standing committee at a time.

Administrative, Budget & Finance, Engineering, Environmental Committees may have no more than two Board Members and at least one Public Member. If more than one public member applies to serve on an individual committee, the full Board shall vote to determine which public member shall be seated on that committee for the year or may choose to appoint more than one public member to a committee by adjusting the size of the committee appropriately. At any time, the Board may also choose to appoint additional public members to any standing committee.

The Lompico Oversight Committee may have no more than five Public Members. Public members serving on the Lompico Oversight Committee shall have a residential mailing address within Assessment District 2016-1.

Members of the committees serve at the pleasure of the Board. Each committee shall designate their own chairperson. For the Administrative, Budget & Finance, Engineering and Environmental Committees the chairperson shall be a member of the Board. Each committee may elect a vice- chairperson. Members of committees, including the chairperson and vice-chairperson shall serve until their successors are

appointed. The chairperson of a committee is its presiding officer and shall be responsible for communicating the recommendation of the committee to the Board. In the absence of the chairperson, the vice-chairperson shall perform the duties of the chairperson. The chairperson and vice-chairperson are not deprived of any of the rights and privileges of a committee member by reason of being the presiding officer.

A majority of the members of each committee shall constitute a quorum for the transaction of business. Only members of the committee are entitled to make, second or vote on any motion or other action of the committee. Each committee member shall be entitled to one vote on all matters considered by the committee. A simple majority vote of the members of the Committee shall designate approval of a motion.

During the first regular meeting after January 1st of each year, each Committee shall review the District's current Strategic Plan and identify Strategic Plan Elements pertaining to said Committee. The Committee's findings regarding such Strategic Plan review shall be reported back to the Board at the next available regular Board Meeting for discussion and to allow the Board to provide direction back to the committees regarding completion of identified Strategic Plan Elements.

During the first regular meeting after January 1st of each year, each Committee shall prepare a multi-month forward looking calendar of items to be discussed by said Committee. Said calendar shall be no less than a three month look-ahead. Each Committee chairperson shall maintain said look-ahead calendar and submit same to the Board on a monthly basis.

The committee Chairperson shall record summary minutes of each committee meeting. The minutes of each committee meeting and any recommendation of a committee shall include a summary of the information presented.

All committee member absences will be considered by the majority of the committee members to determine whether or not the absence is without cause. Sickness, jury duty, vacation and/or bereavement will be considered excused absences. When three meetings in a row or a total of six meetings in one calendar year are missed the remaining committee members will consider the removal of the individual from the committee. The removal must be voted upon and approved by the majority of the committee members with the exception of the committee member in question.

Vacancies shall be reported to the full Board as soon as practically possible. Vacancies shall be filled by simple majority vote of the Board.

Committee Members shall comply with the obligations and responsibilities of office including the obligation to comply with the disclosure requirements of the Political Reform Act (Form 700). The reporting categories made applicable to the Directors by San Lorenzo Valley Water District's local conflict of code shall apply to the members of the committee members.

All committee communications must go through the designated committee chairperson.

A committee has jurisdiction to consider and make a recommendation to staff, other committees and to the Board regarding any item of business within the responsibility of the committee. Committee recommendations shall be communicated to the Board. A committee may consider other matters referred to it by the Board.

The Board may refer a recommendation back to any committee for reevaluation whenever the Board deems additional evaluation is required.

Each Standing Committee shall, as a minimum, be responsible for the following:

Administrative Committee

The Committee shall be responsible for matters of internal and external administrative matters including: communications, staffing and staff support; District's data gap grant programs; interagency relations; codes and policies, pending State and Federal legislation; and other administrative programs.

Budget and Finance Committee

The Committee shall be responsible for the review of District finances including: rates, fees, charges and other sources of revenue; budget and reserves; audit; investments; insurance; and other financial matters.

Engineering Committee

The Committee shall be responsible for the review matters of design, construction, replace and repair of the District facilities and property including: The Capital Improvement Program; Master Plans and other engineering, operational and planning related matters.

Environmental Committee

The Committee shall be responsible for matters of stewardship of the District's property including: Urban Water Management Plans; Water Conservation Programs; Classis Watershed Education Grants; Watershed Management; Resource Management and other environmental related matter.

Lompico Assessment District Oversight Committee

The Committee shall be responsible to fulfill their charter as it relates to Assessment District 2016-1 projects.

2020
SAN LORENZO VALLEY WATER DISTRICT
SCHEDULE OF MEETINGS

January 2020

S	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

February 2020

S	Mo	Tu	We	Th	Fr	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

March 2020

S	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

April 2020

S	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

May 2020

S	Mo	Tu	We	Th	Fr	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

June 2020

S	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

July 2020

S	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

August 2020

S	Mo	Tu	We	Th	Fr	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

September 2020

S	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

October 2020

S	Mo	Tu	We	Th	Fr	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

November 2020

S	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

December 2020

S	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

BoD MEETINGS 1ST & 3RD THURSDAY OF EVERY MONTH 5:30PM (exceptions Jan., July, Nov. & Dec.)

ADMINISTRATION Fultz, Henry, Benkert, Bounds

BUDGET & FINANCE Fultz, Henry, Architzel

ENGINEERING Farris, Moran, Ladd, Lande, Mahood, Smolley

ENVIRONMENTAL Farris, Moran, Fresco, Herbst, O'Connor, Supp

LADOC Quarterly-4th Tuesday 5:30 p.m. Hagen, LoBalbo, Loewen, Norton

HOLIDAYS