Title: Non-Professional Services Agreement: Disaster Debris Monitoring Services

Location: Citywide

Recommendation: Pass a Motion: 1) awarding a five-year non-professional services agreement to Tetra Tech, Inc., for Disaster Debris Monitoring Services for a not-to-exceed amount of $250,000; and 2) authorizing the City Manager or the City Manager’s designee to execute an agreement with Tetra Tech, Inc., for Disaster Debris Monitoring Services as needed.

Contact: John Febbo, Integrated Waste Planning Superintendent, (916) 808-3797; Chris Thoma, Program Analyst, (916) 808-4833; Jerome Council, Integrated Waste General Manager, (916) 808-4949, Department of Public Works

Presenter: None

Attachments:
1- Description/Analysis
2- Agreement
Description/Analysis

**Issue Detail:** The Department of Public Works, Recycling and Solid Waste Division (RSW) participated in a regional Request for Proposals (RFP) seeking a consultant with experience in Disaster Debris Monitoring Services. A consultant with expertise in this field assists municipalities with recovering from a natural disaster, such as a flood, by establishing Temporary Debris Management Sites (TDMS’s), implementing the local jurisdiction’s Disaster Debris Management Plan, and performing record keeping consistent with State and Federal standards so that costs incurred by the municipalities are reimbursable in the event of a State or Federally declared disaster.

In order to participate in this regional RFP, jurisdictions needed to have a Disaster Debris Management Plan approved by its elected body and the State of California Office of Emergency Services (CalOES). The City of Sacramento’s plan was submitted and approved in 2010. RSW staff is in the process of updating this plan and expects to present a revised plan to Council before the end of 2019. More importantly, the attached agreement will allow RSW and the City to respond quickly in the event of a flood or natural disaster by having the consultant’s staff and resources on call to assist City staff.

The RFP was issued by Sacramento County and the Cities of Sacramento, Elk Grove, Citrus Heights, Rancho Cordova, and Galt. Tetra Tech was the only respondent to the regional RFP.

**Policy Considerations:** Pursuant to Sacramento City Code section 3.56.090 any agreement for non-professional services that is more than $100,000 requires City Council approval.

**Economic Impacts:** None

**Environmental Considerations:**

- **California Environmental Quality Act (CEQA):** This report concerns administrative activities and government fiscal activities that do not constitute a “project” and is not subject to the provisions of CEQA (CEQA Section 15378(b)(2)).

- **Sustainability:** Not applicable

**Commission/Committee Action:** None

**Rationale for Recommendation:** This agreement is a major step towards readiness in deploying resources and responding to the impacts of a flood or natural disaster. Tetra Tech would assist the City with establishing and coordinating temporary disposal sites for residents.
of the City of Sacramento to bring waste in the event of a flood or natural disaster. The establishment and location of these temporary sites are essential in order to clear the public right of ways, pedestrian and bike access, and general recovery for a municipality responding to a natural disaster. Clearing waste is one of the most important initial responses during a disaster so that other critical life and health services, such as utilities, power, etc., can get to residents.

Tetra Tech is a leader in this type of consulting services with tremendous experience around California and nationally in helping cities and counties recover from the devastating and increasing amount of work associated with a natural disaster.

**Financial Considerations:** The agreement is for non-professional services in an amount not to exceed $250,000. This amount was determined by estimating the cost of debris removal for approximately two months of service after a large flood or disaster.

The vendor will not perform services until there is a disaster/emergency and the City contacts the vendor asking it to step in and perform services. Purchase orders encumbering funds under this agreement will not be created until funding is secured. There are no General Funds allocated to this initial agreement, but General Funds will be needed in the event of a large natural disaster. In the event of such a disaster, an emergency item would come to City Council requesting additional funds commensurate with the size and scope of the specific disaster.

Tetra Tech’s consulting services include documenting waste collection at Temporary Debris Management Sites (TDMS’s) as well as maintaining detailed record keeping so that the City can seek reimbursement in the event of a State or Federally declared disaster.

**Local Business Enterprise (LBE):** Tetra Tech is an LBE.
City of SACRAMENTO
Office of the City Clerk

CONTRACT ROUTING SHEET

Contract Cover/Routing Form: Must Accompany ALL Contracts; however, it is NOT part of the contract.

General Information (Required)
Original Contract # (supplements only): __________
Assessor's Parcel Number(s): ________________
Contract Effective Date: __________
$ Amount (Not to Exceed): $250,000.00
Other Party: Tetra Tech, Inc.
Project Title: Disaster Debris Planning, Monitoring, Consulting, and Recovery Services
Project #: ____________________________
City Council Approval: YES
Bid/RFQ/RFP #: RFP 09282018, County of Sacramento
if YES, Council File ID#: 2019-00384

Contract Processing Contacts
Department: Public Works
Contract Coordinator: Chris Thoma
Project Manager: John Febbo
Phone Ext: 4833

Department Review and Routing
Accounting:
Supervisor:
Division Manager:
Other:

(Signature)   (Date)
(Signature)   (Date)
(Signature)   (Date)
(Signature)   (Date)

Special Instruction/Comments (i.e. recording requested, other agency signatures required, etc.)
☐ Recording Requested ☐ Other Party Signature Required

Please note that there are two copies to sign. Thanks!

------------FOR CLERK & IT DEPARTMENTS ONLY -- DO NOT WRITE BELOW THIS LINE-------------

CC Rev. 7.1.2018
THIS AGREEMENT is made at Sacramento, California, as of ______________, by and between the CITY OF SACRAMENTO, a municipal corporation (“CITY”), and

Tetra Tech, Inc.
2301 Lucien Way, Suite 120
Maitland, FL 32751
Phone: (321) 441-8500 / Fax (321) 441-8501

(“CONTRACTOR”), who agree as follows:

1. Contract. The Contract shall consist of this Agreement and each of the following documents (if applicable), which are incorporated herein by reference:

   Invitation to Bid
   Instructions to Bidders
   Contractor’s Bid Proposal Form
   Technical Specifications
   Local Business Enterprise (LBE) Requirements*
   Living Wage Requirements for Nonprofessional Service Agreements*
   Requirements of the Non-Discrimination in Employee Benefits Code*
   Ban-The-Box Requirements*

   The above documents followed by an asterisk (*) can be viewed at http://www.cityofsacramento.org/Finance/Procurement/Standard-Agreements

2. Services. Subject to the terms and conditions set forth in this Agreement, CONTRACTOR shall provide to CITY the services described in Exhibit A. CONTRACTOR shall provide the services at the time, place, and in the manner specified in Exhibit A. CONTRACTOR shall not be compensated for services outside the scope of Exhibit A unless prior to the commencement of the services: (a) CONTRACTOR notifies CITY and CITY agrees that the services are outside the scope of Exhibit A; (b) CONTRACTOR estimates the additional compensation required for these additional services; and (c) CITY, after notice, approves in writing a Supplemental Agreement specifying the additional services and amount of compensation therefor. CITY shall have no obligations whatsoever under this Agreement or any Supplemental Agreement, unless and until this Agreement or any Supplemental Agreement is approved by the Sacramento City Manager or the
City Manager’s authorized designee, or by the Sacramento City Council, as required by the
Sacramento City Code.

3. **Payment.** CITY shall pay CONTRACTOR for services rendered pursuant to this Agreement at the
times and in the manner set forth in Exhibit B. The payments specified in Exhibit B shall be the
only payments to be made to CONTRACTOR for the services rendered pursuant to this Agreement
unless pursuant to Section 1, above, CITY approves additional compensation for additional
services. CONTRACTOR shall submit all billings for services to CITY in the manner specified in
Exhibit B, or, if not specified in Exhibit B, according to the usual and customary procedures and
practices that CONTRACTOR uses for billing clients similar to CITY.

4. **Facilities and Equipment.** Except as set forth in Exhibit C, CONTRACTOR shall, at its sole cost and
expense, furnish all facilities and equipment that may be required for CONTRACTOR to perform
services pursuant to this Agreement. CITY shall furnish to CONTRACTOR only the facilities and
equipment listed in Exhibit C according to any terms and conditions set forth in Exhibit C.

5. **General Provisions.** The General Provisions set forth in Exhibit D, which include indemnity and
insurance requirements, are part of this Agreement. In the event of any conflict between the
General Provisions and any terms or conditions of any document prepared or provided by
CONTRACTOR and made a part of this Agreement, including without limitation any document
relating to the scope of services or payment therefor, the General Provisions shall control over
those terms or conditions.

6. **Wage Requirements.** This Agreement may be subject to the provisions of Sacramento City Code
Chapter 3.58, Living Wage. A summary of the requirements of Sacramento City Code Chapter
3.58, entitled “Living Wage Requirements for Nonprofessional Service Agreements,” can be
viewed at:

http://www.cityofsacramento.org/Finance/Procurement/Standard-Agreements. By signing
this Agreement, CONTRACTOR acknowledges and represents that CONTRACTOR has read and
understands these requirements and agrees to fully comply with all applicable requirements of
Sacramento City Code Chapter 3.58. If requested by CITY, CONTRACTOR agrees to promptly
provide such documents and information as may be required by CITY to verify CONTRACTOR’s
compliance. Any violation by CONTRACTOR of Sacramento City Code Chapter 3.58 constitutes a
material breach of this Agreement, for which the CITY may terminate the Agreement and pursue
all available legal and equitable remedies. CONTRACTOR agrees to require its subcontractors to
fully comply with all applicable requirements of Sacramento City Code Chapter 3.58, and include
these requirements in all subcontracts covered by Sacramento City Code Chapter 3.58. In
addition, for services that constitute “public works” under California Labor Code section 1720 et
seq., payment of the prevailing rate of wages is required as indicated in Exhibit A, Section 4 of
this Agreement. If both prevailing wage and living wage requirements apply, CONTRACTOR shall
pay the higher of the two rates.

7. **Non-Discrimination in Employee Benefits.** This Agreement may be subject to the requirements
of Sacramento City Code Chapter 3.54, Non-Discrimination in Employee Benefits by City
Contractors. A summary of the requirements of Sacramento City Code Chapter 3.54, entitled
“Requirements of the Non-Discrimination in Employee Benefits Code,” can be viewed at:

http://www.cityofsacramento.org/Finance/Procurement/Standard-Agreements. By signing
this Agreement, CONTRACTOR acknowledges and represents that CONTRACTOR has read and understands these requirements and agrees to fully comply with all applicable requirements of Sacramento City Code Chapter 3.54. If requested by CITY, CONTRACTOR agrees to promptly provide such documents and information as may be required by CITY to verify CONTRACTOR’s compliance. Any violation by CONTRACTOR of Sacramento City Code Chapter 3.54 constitutes a material breach of this Agreement, for which the CITY may terminate the Agreement and pursue all available legal and equitable remedies.

8. **Considering Criminal Conviction Information in the Employment Application Process.** This Agreement may be subject to the requirements of Sacramento City Code Chapter 3.62, Procedures for Considering Criminal Conviction Information in the Employment Application Process. A summary of the requirements of Sacramento City Code Chapter 3.62, entitled “Ban-The-Box Requirements,” can be viewed at: http://www.cityofsacramento.org/Finance/Procurement/Standard-Agreements. By signing this Agreement, CONTRACTOR acknowledges and represents that CONTRACTOR has read and understands these requirements and agrees to fully comply with all applicable requirements of Sacramento City Code Chapter 3.62. If requested by CITY, CONTRACTOR agrees to promptly provide such documents and information as may be required by CITY to verify CONTRACTOR’s compliance. Any violation by CONTRACTOR of Sacramento City Code Chapter 3.62 constitutes a material breach of this Agreement, for which the CITY may terminate the Agreement and pursue all available legal and equitable remedies. CONTRACTOR agrees to require its subcontractors to fully comply with all applicable requirements of Sacramento City Code Chapter 3.62, and include these requirements in all subcontracts covered by Sacramento City Code Chapter 3.62.

9. **Authority.** The person signing this Agreement for CONTRACTOR represents and warrants that he or she is fully authorized to sign this Agreement on behalf of CONTRACTOR and to bind CONTRACTOR to the performance of its obligations hereunder.

10. **Exhibits.** All exhibits referred to herein are attached hereto and are by this reference incorporated as if set forth fully herein.
Executed as of the day and year first above stated.

CITY OF SACRAMENTO
A Municipal Corporation

By: ________________________________

Print name: ________________________________

Title: ________________________________

For: Howard Chan, City Manager

ATTEST:

___________________________
City Clerk

APPROVED AS TO FORM:

___________________________
City Attorney

Attachments

Exhibit A   Scope of Services
Exhibit B   Fee Schedule/Manner of Payment
Exhibit C   Facilities/Equipment Provided
Exhibit D   General Provisions

Form Approved by City Attorney 2-14-2017
CONTRACTOR:

Tetra Tech, Inc.

NAME OF FIRM

95-4148514

Federal I.D. No.

C1609644

State I.D. No.

139638


TYPE OF BUSINESS ENTITY (check one):

_____ Individual/Sole Proprietor

_____ Partnership

X  Corporation (may require 2 signatures)

_____ Limited Liability Company

_____ Other (please specify: ________________________)

________________________

Signature of Authorized Person

Jonathan Burgiel, Business Unit President

Print Name and Title

________________________

Additional Signature (if required)

Betty Kamara, Contracts Administrator

Print Name and Title

Form Approved by City Attorney 2-14-2017
EXHIBIT A
NONPROFESSIONAL SERVICES AGREEMENT

SCOPE OF SERVICES

1. **Representatives.**

   The CITY Representative for this Agreement is:

   John Febbo / Integrated Waste Planning Superintendent  
   2812 Meadowview Road, Building 1, Sacramento, CA 95832  
   Phone: (916) 808-3797 / jfebbo@cityofsacramento.org

   All CONTRACTOR questions pertaining to this Agreement shall be referred to the CITY Representative or the Representative’s designee.

   The CONTRACTOR Representative for this Agreement is:

   Betty Kamara / Contracts Administrator  
   2301 Lucien Way, Suite 120, Maitland, FL 32751  
   Phone: (321) 441-8518 / Fax: (321) 441-8501 / Betty.Kamara@teterminate.com

   All CITY questions pertaining to this Agreement shall be referred to the CONTRACTOR Representative. All correspondence to CONTRACTOR shall be addressed to the address or e-mail address set forth on page one of this Agreement. Unless otherwise provided in this Agreement, all correspondence to the CITY shall be addressed to the CITY Representative.

2. **Scope of Services.**

   The services provided shall be as set forth in Attachment 1 to Exhibit A, attached hereto and incorporated herein.

3. **Time of Performance.** The services described herein shall be provided during the period beginning on the Effective Date for a duration of five years.

4. **Public Works Requirements.** To be completed by the City Representative:

   The services provided under this Agreement constitute “public works” under California Labor Code section 1720 et seq. and are either [check one if applicable]:

   ________ Construction work in an amount exceeding $25,000; or

   ________ Alteration, demolition, repair, or maintenance work in an amount exceeding $15,000.

   If either line is checked above, this Agreement is subject to the following requirements:
A. **Payment of Prevailing Wages:** The provisions of Sacramento City Code section 3.60.180 require, among other things, that CONTRACTOR and every lower-tier subcontractor pay not less than the prevailing rate of wages, as determined by the Director of the California Department of Industrial Relations pursuant to California Labor Code section 1773. CONTRACTOR and every lower-tier subcontractor shall submit certified payrolls and labor compliance documentation electronically when and as required by CITY. CONTRACTOR is responsible for compliance with Sacramento City Code section 3.60.180, and shall include these requirements in every subcontract. This Agreement is subject to compliance monitoring and enforcement by the California Department of Industrial Relations, as specified in California Labor Code section 1771.4.

B. **DIR Registration:** California Labor Code Section 1725.5 requires the CONTRACTOR and all lower-tier subcontractors performing public works services to be currently registered with the California Department of Industrial Relations (DIR), as specified in California Labor Code Section 1725.5. California Labor Code Section 1771.1 provides that a contractor or subcontractor shall not be qualified to bid on, be listed in a bid proposal (subject to the requirements of Section 4104 of the California Public Contract Code), or engage in the performance of any contract for public work, unless currently registered and qualified to perform public work pursuant to California Labor Code Section 1725.5. The CONTRACTOR shall list the CONTRACTOR’s current DIR registration number, and the current DIR registration number of all lower-tier subcontractors, below:

<table>
<thead>
<tr>
<th>CONTRACTOR's DIR No.</th>
<th>Subcontractor name</th>
<th>DIR No.</th>
</tr>
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<tbody>
<tr>
<td>____________________</td>
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</tbody>
</table>

Further information can be found on DIR’s website at http://www.dir.ca.gov/Public-Works/Contractors.html. The above summary is provided solely for informational purposes, and does not in any way affect the CONTRACTOR’s and subcontractors’ obligation to comply in all respects with all other applicable laws and regulations. The CONTRACTOR shall disseminate these provisions to every lower-tier subcontractor.
Attachment 1 to Exhibit A
Scope of Services

Introduction
This Attachment 1 to Exhibit A supplements and incorporates by this reference the Nonprofessional Services Agreement between Tetra Tech, Inc. (“CONTRACTOR”) and the City of Sacramento (“CITY”), (collectively referred to herein as the “parties”), for disaster debris planning, monitoring, consulting, and recovery services. This attachment provides the Scope of Services for the Agreement. In the event of a conflict between this attachment and the Agreement, the terms of the attachment shall prevail.
BACKGROUND

General

The City of Sacramento is at high risk of experiencing either natural or man-made disasters. The City not only faces the likely prospect of floods, wildfires, and possibly earthquakes, but also has major highways, air, and other transportation routes that may be at risk, a highly diverse population, government offices, and commercial industries. The City of Sacramento is the 6th largest city in California and the 35th largest City in the Country. The population of the City of Sacramento incorporated area in the 2010 census was 466,488. In 2014, the population was estimated to have grown to 485,000 according to the California Department of Finance Demographic Research Unit. The total population for Sacramento County including all incorporated cities was 1,418,788 in 2010.

County of Sacramento Office of Emergency Services (OES)

The City of Sacramento is an incorporated City within the County of Sacramento, which has an Emergency Operations Plan to ensure the most effective and efficient allocation of resources for the maximum benefit and protection of the civilian population during times of emergency. The OES coordinates the overall countywide response to large-scale incidents and disasters and is responsible for alerting and notifying affected agencies when disaster strikes.

City of Sacramento Recycling and Solid Waste Division (RSW)

The RSW provides the Sacramento region with integrated waste management services. These include curbside collection, recycling, transfer, and disposal services to ~485,000 residents across ~100 square miles of the incorporated area. RSW partners with private companies for transfer and disposal, as well as the recycling of residential recyclables that are collected and the green waste processing that are collected. Disposal facilities used by the City of Sacramento include the County’s North Area Recovery Station (NARS) and the Sacramento Recycling and Transfer Station (SRTS), operated by Waste Management Inc. City of Sacramento refuse from both these locations go the County’s Kiefer Landfill in Sloughhouse.

Consultant Responsibilities The purpose of the City’s Disaster Debris Monitoring Contract is to ensure timely and coordinated monitoring of operations that support incident objectives as defined through the City’s Disaster Debris Management Plan. Furthermore, all monitoring will follow guidance provided for in FEMA 327 Public Assistance Debris Monitoring Guide. Services may be delivered using a combination of the City’s, neighboring jurisdictions offering mutual aid, and Consultant’s workforces. Assistance provided by Consultant may support mutual aid agreement commitments between Sacramento County and any of its incorporated Cities that seek services via mutual aid.
The City’s objective is to retain a Consultant to assist the City in planning for debris-generating disaster events, monitor events when they occur, and to provide consulting and recovery services related to these events. The City also reserves the right to use the County’s and other participating municipalities’ forces and equipment. The Consultant must have the capacity to cover the expenses prior to initial payment and between subsequent payments, as well to provide all necessary bonds and insurance. The Consultant must have an established management team, and an established network of resources both within and outside of the impacted City area to provide the necessary supplies, equipment and personnel. The Consultant must adhere to all Federal, State and local laws, codes and ordinances.

This Contract will be utilized at the direction of the City. No compensation will accrue to the Consultant unless and until the Contract is utilized by the City either in preparation, anticipation of a natural disaster or emergency, or after such a local, state, or federally declared disaster or emergency.

Qualified firms shall train City of Sacramento staff, assist in securing contractors to clear, remove, reduce, recycle, and dispose of eligible disaster-generated debris, to provide consulting services, and to provide recovery services. The Consultant will ensure compliance with Federal requirements and the City’s Disaster Debris Management Plan as related to contractor oversight, truck measurement, load ticket preparation and issuing, report preparation, and project administration.

1. **Planning**
   As directed by City, the consultant shall provide planning services prior to a disaster event:
   a. Assistance in securing City contractors for clearance, removal, reduction, and disposal of disaster debris. This assistance may involve document development, review, and/or selection assistance.
   b. Disaster management planning to include written plan reviews, validation, updating, and recommendations for improvements.
   c. Disaster preparations training to City of Sacramento staff for whom the City determines will benefit from such training. This may include, but is not limited to, the Recycling and Solid Waste Division, the Department of Transportation, and/or the Department of Finance.
   d. Disaster preparedness training may include, but is not limited to, Emergency Response specific to City of Sacramento Disasters covering multi-agency coordination, public relations, debris eligibility, and FEMA Public Assistance reimbursement training.

2. **Disaster Debris Monitoring**
   As directed by the City, the consultant shall provide disaster debris monitoring services during disaster events:
   a. Health and Safety
i. Comply with all applicable debris monitoring health and safety standards specifically including guidance on hazard identification, hazard controls, personal protective equipment, and health and safety incident management procedures.

ii. Ensure the health and safety of personnel by monitoring and/or providing training to be able to effectively identify potential hazards in the field, knowledge of appropriate hazard controls that can be implemented to reduce hazards to the lowest practical level, and knowledge in FEMA procedures for managing health and safety incidents, so that immediate and appropriate action can be taken in the event of an incident.

iii. Ensure safety concerns are identified and resolved such as downed power lines, traffic control needs, safe operations of trucks and equipment, and workers are properly trained for the work they are conducting.

iv. Report if contractor personnel safety standards or general public safety standards are not followed.

v. Maintain logs of health and safety incidents, environmental monitoring activities, and incidents at DMS or disposal sites.

b. Truck and Trailers
   i. Establish volume capacity of truck and trailers used to haul debris.
   ii. Accurately complete and document certifications of truck and trailer measurement for capacities at the beginning of debris removal activities, and should be periodically re-verified, especially if tampering intended to manipulate capacity is suspected.
   iii. Ensure the inside (not outside) dimensions of truck hauling beds are measured.
   iv. Truck and trailer certifications must contain license plate number, truck identification number assigned by truck owner, short physical description of the truck, and photographs.
   v. Truck numbers and measured capacities are to be clearly identified with large letters on the sides of trucks and trailers, for ease of reference, to prevent confusion, and to ensure trucks are accurately credited for their load.
   vi. Copies of the certifications should be made available to DMS or disposal site monitors for easy reference when evaluating and inspecting incoming trucks and trailers.

c. Load Tickets
   i. Load tickets will be used to document weights and volumes of contractor vehicles. These load tickets must be treated as accounting
forms and represent critical documentation when applying for FEMA funds. Debris monitoring training materials must clearly describe how load tickets will be used and the information they will contain and must be available for City review.

ii. Quantities and types of debris must be tracked from the point at which it is collected to the point at which it is deposited at a DMS or disposal site.

iii. Load tickets must specify debris quantities, material types, specific origin and final destination (reduction, recycling, disposal) into a database application.

iv. Documentation that debris was properly disposed at a permitted facility must be maintained.

v. Complete and physically control load tickets for each load. Copies of load tickets are to be retained by the debris monitor and hauler at each step in the process.

vi. Maintain a log of the load tickets issued or processed to document debris load quantities, types, and locations.

vii. Digitization of source documentation (such as load tickets).

d. Collection, DMS, and Disposal Sites

i. Provide all management, supervision, labor, transportation, monitoring documents, and equipment necessary to initiate load tickets at debris loading sites, estimate the volume of debris being delivered by trucks to each disposal site, and support the operations of the field supervisor(s), debris loading, elevated platform monitors, and clerical staff.

ii. Designate a “Project Manager” for disaster debris operations. This position will monitor recovery contractor operations and make/implement recommendations to improve efficiency and speed up recovery work.

iii. Assign a field supervisor to provide oversight of loading site and elevated platform monitors to ensure properly and accurately completed and physically controlled load tickets.

iv. Hire, schedule, and manage field staff including schedule work for all team members and contractors on a daily basis.

v. Identify debris generated from the public rights-of-way, private property, drainage areas/canals, waterways, and other public, eligible, or designated areas.

vi. Monitoring and supervision of Temporary Debris Management Site locations development and restoration (the exact number and location of sites will be determined by the City Debris Manager) and any other permitting/regulatory issues as necessary.
vii. Provide debris monitoring personnel who are trained in eligibility, have the ability to estimate debris quantities, differentiate between debris types, properly fill out load tickets, and follow all site safety procedures. They must be assigned at monitor debris loading and management sites/disposal sites located in the City of Sacramento and Sacramento County. Debris monitors must submit daily reports on load quantities, debris management site operations, and operational and safety issues in the field.

viii. Monitor debris operations at the Collection Locations to ensure trucks do not arrive at collection sites already partially or fully loaded and to ensure it is noted on the load ticket if a truck or trailer is loaded by hand, so an appropriate deduction is made in accordance with Debris Operations – Hand-Loaded Trucks and Trailers. Validate and document hazardous trees, including hangers, leaners, and stumps.

ix. Monitor site development and restoration of DMSs. Monitor the debris operations at the DMS to ensure proper layout for safe and efficient operations with regards to traffic, fire control, debris pile size and stability, processing, reduction, recycling, and material segregation. DMS operations must include environmental monitoring activities necessary to comply with applicable Federal, State and local environmental laws and regulations, such as periodic air and soil sampling.

x. Monitor the debris operations with sturdy monitoring towers allowing adequate inspection of trucks and trailers at DMS sites and Disposal sites. Ensure that trucks are not artificially loaded and all debris is removed from trucks at DMS sites.

xi. Hazardous wastes must not be mixed in loads. Hazardous waste handling must be done in compliance with Federal, State and local laws and regulations.

xii. Provide method for digital photos or recordings of loads, either attached to the elevated platforms, or some automated, semi-automated or manual method, for the purposes of proof of ingress/egress, debris content, etc.

e. MONITORING

i. Provide oversight and quality assurance of debris removal contract. Conduct comprehensive observation and documentation of debris operations from the point of debris collection to final disposal.

ii. Monitor all debris removal work and operations which involves constant observation of crews to ensure that workers are performing eligible work in accordance with Public Assistance Guidelines, and helps to
verify compliance with all applicable Federal, State, and Local regulations.

iii. Monitor debris operations to ensure that they are efficient, effective, and eligible for FEMA Public Assistance funding as well as California Disaster Assistance Act (CDAA) reimbursement. Promptly take actions necessary to ensure compliance with Public Assistance Program eligibility criteria.

iv. Monitor Debris Removal Contractor to ensure they are conducting the debris removal day-to-day operations per the terms of the contract to ensure contractual requirements are being met and to ensure compliance with applicable Federal, State, and Local requirements.

v. Understand eligibility requirements and ensure work performed under the contract meets these requirements. Ensure that only debris specified in the contract is collected and is clearly identified as eligible or ineligible. Ensure performance measures are met and eligible work is documented. Ensure only eligible debris quantities are being claimed for Public Assistance and conduct the request for Public Assistance funds for this eligible work. Monitor and document eligible and ineligible work and costs so they are clearly distinguished.

vi. Complete all documentation required to support request for Public Assistance Program funding and the award of grants using monitoring forms and reports provided by or required by FEMA. Use the Hazardous Stump Worksheet Form from the Public Assistance Program and Policy Guide, Hazardous Stump Extraction and Removal Eligibility. Use the FEMA provided standardized forms for documenting force account resources.

vii. Ensure debris-related activities completed with force account, contracted resources, or both, are within the assigned scope of work, are funded under the Public Assistance Program, and are compliant with all FEMA funding requirements.

viii. Monitor and document debris-related activities specifically including eligible quantities, types, and reasonable expenses. Documentation must be done to show amount of debris removed, work performed, costs incurred, debris collection, processing, reduction, recycling, and disposal activities.

ix. Promptly report issues that require action, such as safety concerns, contractor non-compliance with debris removal contractual requirements, improper equipment use, ineligible debris, or non-compliance with all local ordinances as well as State and Federal regulations.

x. Provide written weekly project worksheet with labor, equipment and material records of all actual costs of the project.
xi. Provide logs used to validate applicant monitoring activities at debris loading sites, DMS, and disposal sites.

xii. Provide logs used to quantify or validate specific items of works such as removal of hazardous trees, limbs, and stumps, the eligible scope of PPDR or demolition on a specific property.

xiii. For Time and Materials Contracts, record the types of equipment used, hours used, include downtime by day for each piece of equipment. Records are required for labor, equipment, and material substantiating the actual costs in the project worksheet. Report if improper equipment is mobilized and used.

xiv. Development of maps, GIS applications, etc. as necessary.

xv. Comprehensive review, reconciliation, and validation of debris removal contractor(s) invoices prior to submission to City for processing.

xvi. Submission of periodic status reports with payment estimates of contractor’s progress, percentage completion tracking, adherence to contract time schedules, adherence to contract cost schedules, provide updated debris estimates based on field observations, track performance measures and payment estimates to aid in evaluating the contractor’s progress. Report if completion schedules are not on target.

xvii. Assist City with responding to public concerns and comments. Develop daily operational reports to keep City informed of work progress. Coordinate daily briefings, work progress, staffing, debris estimates and other key items with City.

3. **Consulting and Recovery**

   As directed by City, the consultant shall provide consulting and recovery services during disaster events:

   a. Identification of eligible emergency and permanent work (Category A-G);
   
   b. Ensure only eligible debris quantities are claimed for Public Assistance
   
   c. Damage Assessment
   
   d. Assistance in attaining Immediate Needs Funding
   
   e. Prioritization of recovery workload
   
   f. Loss measurement and categorization
   
   g. Insurance evaluation, documentation adjusting and settlement services
   
   h. Staff augmentation with experienced Public Assurance Coordinators and Project Officers
   
   i. Project Worksheet development, generation, and review. Any other pertinent report preparation required for reimbursement by FEMA, FHWA, HMGP, CDBG, CDAA, NRCS and any other applicable agency for disaster recovery efforts reimbursement support.
   
   j. Grant closeout, audit, and appeals preparation, assistance, and negotiations
   
   k. Reconstruction and long-term infrastructure planning
I. Interim inspections, final inspections, supplemental Project Worksheet generation and final review of emergency and permanent work performed;
m. Provide final reports used to provide a summary of observations and any outstanding issues.

**FEMA Reimbursement Deadlines**

Completion of FEMA defined Emergency Work to occur within 6 months (180 days) from the declaration date to ensure FEMA reimbursement of 75% of Federal Cost Share. Emergency Work to be completed within 1-30 days to receive 85% Federal Cost Share and/or 31-90 days to receive 80% Federal Cost Share.

**Damages**

The Consultant will oversee the work of the Contractor who shall repair all roadways, road surfaces, sidewalks, utilities, fences, driveways, roofs, drainage structures, and other features which are damaged by Contractor debris removal operations, including same damages to adjacent public and private properties including vehicles. This will include the re-sloping of damaged surfaces to original grade and filling of all ruts caused by equipment and trucks. Consultant shall provide staff serving the function of debris management coordination a weekly spreadsheet listing the name, address and telephone number of all residents claiming damage, a summary of the claims, and a status report of the resolutions. The Consultant shall respond to damage claims within seven (7) calendar days upon receipt of the same by the homeowner or City staff serving the function of debris management coordination, and shall settle valid claims within ninety (90) days. The City and Contractor will attempt to resolve any damage disputes without legal action. In the event City and Contractor are at an impasse, Contractor will continue to provide the scope of services noted in this Agreement, while disputes are being resolved. Regardless of any unresolved circumstance or dispute, the Consultant shall not abandon or frustrate the objective of providing services noted in this Agreement, as these services, in a disaster and/or emergency, are vital to health, safety, and well-being of the City of Sacramento and its residents.

**Disputes**

In the event of any dispute arising out of or relating to this Agreement, including but not limited to, the City, Contractors, State, FEMA, the parties shall attempt, in good faith, to promptly resolve the dispute in the field so that reimbursement funding for debris removal operations is not jeopardized. Issues may include contractual issues or discrepancies, eligible work, eligible costs, health and safety, environmental requirements, historic preservation requirements, etc. There must be clear and timely communication with key personnel to identify issues, to develop and implement resolutions, and to document critical information for future reference. Pending resolution of any such dispute, Consultant shall continue without delay to carry out all its responsibilities under this Agreement. The City shall not be required to make payments for any
services that are the subject of this dispute resolution process until such dispute has been mutually resolved by the parties. If the dispute cannot be resolved within 15 calendar days of initiating such negotiations or such other time period as may be mutually agreed to by the parties in writing, either party may pursue its available legal and equitable remedies, pursuant to the laws of the State of California.
Attachment 2 to Exhibit A
Proposal from Tetra Tech

Introduction
This Attachment 2 to Exhibit A supplements and incorporates by this reference the Nonprofessional Services Agreement between Tetra Tech, Inc. (“CONTRACTOR”) and the City of Sacramento (“CITY”), (collectively referred to herein as the “parties”), for disaster debris planning, monitoring, consulting, and recovery services. This attachment provides the proposal submitted by CONTRACTOR in response to Sacramento County Request For Proposals (RFP) 09282018. In the event of a conflict between this attachment and the Agreement, the terms of the attachment shall prevail.
PROPOSAL FOR
Disaster Debris Planning, Monitoring, Consulting, and Recovery Services

Sacramento County and the Cities of Sacramento, Elk Grove, Citrus Heights, Rancho Cordova, and Galt
November 27, 2018

Ms. Wendy Nelson
Solid Waste Planner
Sacramento Department of Waste Management and Recycling
9850 Goethe Road
Sacramento, CA 95827

Subject: Disaster Debris Planning, Monitoring, Consulting and Recovery Services (09282018)

Dear Ms. Nelson and Members of the Evaluation Committee,

In recent years, many communities across the nation have been affected by large debris-generating disasters such as wild fires, earthquakes, floods, tornadoes, and severe storms. As a result, the County of Sacramento (County) is seeking the services of a qualified firm to assist disaster debris planning, monitoring, consulting and recovery services. Tetra Tech, Inc. (Tetra Tech) is honored to submit the enclosed proposal and is well suited to assist the County for the following reasons:

• Nationally Recognized Leader in Disaster Debris Monitoring. Our team has overseen and managed the recovery of over 103 million CYs of debris on behalf of over 300 public sector clients, resulting in excess of $6 billion in reimbursable costs to our clients from the Federal Emergency Management Agency (FEMA), state regulatory agencies, the Federal Highway Administration, and the Natural Resources Conservation Service. Tetra Tech not only assists local governments in developing disaster debris management plans (DDMPs), but we also assist them in executing the plans following a debris-generating event. Because of this real-world experience, we are better able to inform our clients of what they should expect during a disaster and can share lessons learned and best practices.

• Recent County and State of California Experience. Tetra Tech is currently assisting Sacramento County to update its Operational Area Response Plan. Our team also recently conducted a flood recovery tabletop exercise for some of the County’s department heads. Tetra Tech has also recently been contracted through CalRecycle and other California agencies to provide project management and oversight for several wildfire recovery efforts. This includes the Clayton, Detwiler, Erskine, Helena, Lake, Soberanes NorCal, Thomas, Carr, and Mendocino wildfires. As a result of our recent California experience, our staff thoroughly understands debris removal operations in the State and how to conduct projects in compliance with the California Governor’s Office of Emergency Services (CalOES) requirements. With 28 offices located throughout California, 3 offices in Sacramento County, and our solid waste group based in Diamond Bar, California, Tetra Tech will provide the County with a solution that bridges local knowledge with national expertise.

• One Firm, Countless Services. Tetra Tech provides comprehensive services from emergency planning to expert grant management. Our team of consultants has helped local governments across the country develop DDMPs, debris management site assessment reports, and many other emergency management plans and training exercises. Our extensive hands-on response and recovery experience allows us to develop more effective, operationally sound preparedness initiatives. Tetra Tech has an in depth understanding and knowledge of all aspects of disaster debris management planning and has provided these services to over 50 communities throughout the nation, including most recently a multi-jurisdiction DDMP for the Central Contra Costa Solid Waste Authority, and a DDMP for the unincorporated areas of Los Angeles County and for Orange County,
California. By providing comprehensive services, Tetra Tech can assist clients in developing plans and help execute those plans when necessary.

In closing, Tetra Tech would like to thank the County for the opportunity to submit our qualifications. For questions regarding this response, please feel free to contact me or one of the representatives listed below.

**Technical representative:**
**Ms. Anne Cabrera**  
(954) 559-4951 | anne.cabrera@tetratech.com

**Contractual representative:**
**Ms. Betty Kamara**  
(407) 803-2551 | betty.kamara@tetratech.com

Sincerely,

Tetra Tech, Inc.

[Signature]

Jonathan Burgiel  
Business Unit President, Tetra Tech Disaster Recovery
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Personnel/Management Skills

Tetra Tech has assembled a team of experienced emergency management, infrastructure, and grant management specialists with hands-on experience in recent disasters and emergencies as well as prevention, mitigation, preparedness, response, and recovery programs. Our disaster recovery professionals are uniquely familiar with the policies, procedures, and requirements associated with providing disaster recovery services subject to Federal Emergency Management Agency (FEMA), Federal Highway Administration (FHWA), U.S. Department of Housing and Urban Development (HUD), Natural Resources Conservation Service (NRCS), and other federal agency reimbursement programs.

Our staff members have successfully managed the removal of and reimbursement for over 103 million cubic yards (CYs) of debris as well as the demolition of over 12,500 uninhabitable residential and commercial structures. Our team has monitored and obtained FEMA, FHWA, and NRCS reimbursement on 23 debris removal projects in excess of 1 million CYs of debris and understands the significant resource commitment and effort that is necessary to manage and monitor large-scale debris removal operations for local governments.

Tetra Tech is committed to providing the County of Sacramento (County) with a dedicated and consistent project management team that will expedite recovery efforts in the County by establishing a coordinated and organized approach to debris removal. Our dedicated team is available to the County 365 days per year.

Based on this understanding, Tetra Tech has assembled a project team with the qualifications and expertise necessary to support the County following a disaster.

Professional Certifications, Training, and Licensing

Tetra Tech is committed to providing our customers with quality technical products and services while meeting the highest level of ethical and regulatory standards and performance in our jobs. In addition, our environmental health and safety program helps our business operate in a manner that protects the health and safety of our employees, customers, business partners, community neighbors, and the environment.

Tetra Tech remains abreast of the latest guidance, issues being debated, and current best practices through participation in expert groups, attendance in training and conference sessions, and working with national experts in disaster recovery operations, emergency management, national security, information technology, public health, transportation, and critical infrastructure protection.

Our proposed team possesses many of the key certifications necessary to provide quality technical services and have attended numerous training courses related to debris operations and emergency management. Some of these include, but are not limited to:

- Occupational Safety and Health Administration (OSHA) Disaster Site Worker Course
- OSHA 10-Hour Construction Safety Certification
- OSHA 40-Hour HAZWOPER Certification
- G-202 Debris Management
- IS 100: Introduction to Incident Command System
- IS-120: Introduction to Exercises
- IS-200: Basic Incident Command
- IS-547: Introduction to Continuity of Operations (COOP)
- IS-631: Public Assistance Operations I
- IS-632: Introduction to Debris Operations
- IS-634: Introduction to FEMA’s Public Assistance Program
- IS-700: National Incident Management System
- IS-800: National Response Program

Additionally, all collection and disposal monitors and field supervisors must attend a debris monitoring training session prior to working. These training sessions are delivered by experienced trainers and provide the
information required to facilitate accurate field monitoring. Tetra Tech also conducts daily “tailgate” safety sessions with field employees to alert them of potential work hazards and review safe work practices.

**Proposed Staff**

**Senior Management Team**

Our senior management team will provide expert oversight and assistance at critical junctures and is prepared to assist the project management team for the duration of any disaster recovery operation. These individuals bring decades of disaster debris monitoring and reimbursement expertise.

- **Mr. Jonathan Burgiel** has 31 years of experience in solid waste and disaster recovery. His disaster-related work has included serving as principal in charge of over 30 projects, helping clients throughout the country prepare for, respond to, and recover from natural and human-caused disasters. Mr. Burgiel has provided senior management leadership to communities in Puerto Rico (Hurricane Maria); Miami Dade County and the City of Winter Park (Hurricane Irma); Richland County, South Carolina (Historic 1,000 Flooding Event); the New Jersey Department of Environmental Protection (NJDEP) (Hurricane Sandy); State of Connecticut (Hurricane Sandy); State of Louisiana (Hurricane Isaac); City of New Orleans, LA (Hurricane Katrina Residential Demolition Program); and Harris County, Texas (Hurricane Ike), to name a few.

- **Ms. Anne Cabrera** has worked nationwide on numerous major post-disaster activations since Hurricane Wilma in 2005. She has served in a variety of roles focusing on reimbursement for more than $2 billion from the FEMA. Ms. Cabrera has worked on behalf of cities and counties throughout the United States and is a highly regarded expert in the debris management industry. In addition to her work with post-disaster recovery operations, Ms. Cabrera has worked with a number of clients on their longer-term financial recovery, including serving as a technical resource to clients during implementation of the FEMA PA program and other federal grant programs and assisting in the preparation, development, and review of FEMA PA project worksheets (PWs) for disaster-related activities, state appeals, and close out processes.

- **Mr. Ralph Natale** is an expert in FEMA Public Assistance (PA) Grant Program reimbursement policies and has administered nearly 200 projects in his 13-year career. Mr. Natale has served as a principal in charge or project manager in response to some of the country’s largest debris-generating disasters, including NORCAL and SOCAL Wildfires, Hurricanes Harvey, Irma, Matthew, Katrina, Ike and Sandy. This includes managing and documenting the removal of over 46 million cubic yards (CYs) of debris and over 1.3 million hazardous trees. This and the program management of over 9,600 demolitions total over 2.5 billion dollars of reimbursed invoices. He currently serves as principal in charge for several of the firm’s response efforts in California following the devastating fires and for 38 communities following Hurricane Harvey in Texas.

- **Mr. Jeff Dickerson** has more than 20 years of experience in program management and information technology and is the principal system architect of our automated debris management system (ADMS), RecoveryTrac™. Mr. Dickerson has managed numerous large disaster response operations with over 1,000 field monitors, coordinated the operation of 24-hour data processing centers (some with nearly 100 personnel), and provided technical support for a debris management database to track over 1,000 trucks and the documentation for over 5 million CYs of debris brought to clients’ debris management sites. Mr. Dickerson has led deployment and logistics efforts for some of the firm’s largest debris monitoring efforts. Most recently, he oversaw the deployment of over 6,000 field units to over 100 clients following Hurricanes Harvey, Irma, and Maria.

- **Mr. John Buri** is a versatile emergency management, disaster mitigation, response and recovery, and grant management professional with 16 years of experience. Mr. Buri has provided senior management oversight on 22 major disasters declarations for over 100 clients since 2007, representing over $6 billion in disaster-related grants. He has responded to numerous large-scale activations and engages with FEMA and state
regulatory agencies and debris contractors in addition to providing FEMA PA consulting for tasks and activities associated with each disaster recovery operation. Mr. Buri also is familiar with FEMA Hazard Mitigation Assistance, HUD CDBG-DR, and disaster funding strategies for local and state governments.

- **Mr. Oliver Yao** has over 12 years of disaster recovery experience and has supported response efforts to some of the largest disasters to affect the United States, including Hurricanes Katrina, Ike, Sandy, Matthew, and Harvey. Mr. Yao has developed standard operating procedures (SOP) for documentation and data management that assist our clients during closeout and audit. He has also provided local governments across the country with debris management consulting services. Mr. Yao is a leading subject matter expert in reimbursement documentation and closeout audit support. In addition, Mr. Yao has assisted numerous local governments with FEMA appeals following Hurricanes Charley, Frances, Jeanne, Wilma, and Matthew.

- **Mr. Dick Hainje** serves as a senior advisor and the former administrator of FEMA Region VII, where he led the region through 60 presidentially declared disasters. Mr. Hainje was the director of operations for Hurricane Charley and was responsible for the entire Florida operations division, which at the time was the largest deployment in FEMA’s history. His extensive experience working with senior first responders as well as local, state, and federal elected officials during times of crisis has included providing full briefings to the president of the United States five times at the scene of major disaster operations. He was responsible for creating a long-term community recovery process for FEMA Region VII, which provides heavily impacted communities the opportunity to go through a FEMA-sponsored planning process after a catastrophic incident. Following Hurricane Katrina in 2005, Mr. Hainje was asked by Secretary Chertoff to serve as the deputy Principal Federal Official for the Mid-Atlantic States, where he was involved with every aspect of preparation for all of the states from Georgia to Delaware, including leading major hurricane preparation exercises in FEMA Region IV and FEMA Region III.

### Project Management Team

In addition to our senior management team, our dedicated project management team consists of disaster recovery professionals who are uniquely familiar with the policies, procedures, and requirements associated with providing disaster recovery services. Tetra Tech’s staff members constitute an integrated team with unparalleled skills and experience that is uniquely qualified to manage the debris monitoring operations.

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<tr>
<th>Name</th>
<th>Summary of Qualifications</th>
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| **Tim Quade**             | - **Over 2 years of experience** with knowledge in truck certification, disposal operations, scheduling and dispatching of monitors, quality assurance/quality control (QA/QC) of monitors, and general field management.  
                           | - Understanding of FEMA eligibility and documentation requirements and oversees field operations to make sure that all documentation captured is FEMA-compliant.  
                           | - Currently serves as Operations Chief in Ventura, California, overseeing the debris removal operations of nearly 700 structures following the December 2017 Thomas Fire in Ventura County, CA. Mr. Quade also has prior experience in California following the Mendocino and Helena fires. |
| **Charles Cabrera**       | - **Over 4 years of experience** in debris management, ROW debris removal, disposal operations, quality assurance initiatives, FEMA compliance monitoring, supervision of field operations, operational scheduling and dispatch.  
                           | - 40-hour HAZWOPER-trained operations manager.  
<pre><code>                       | - Will verify eligibility and compliance; oversee collection and disposal operations; and coordinate directly with debris contractors, data managers, |
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<tr>
<th>Name</th>
<th>Summary of Qualifications</th>
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| Chris Burns          | **Over 15 years of experience** in the environmental field.  
• Responded to over 400 oil spills, numerous wildfires, and other disaster incidents.  
• Experienced in the collection of asbestos samples and is versed in the 2009 asbestos framework for collection asbestos samples, and currently manages five asbestos sites.  
• Has participated in hazard assessments for radiation, VOCs, lead, asbestos, and debris estimates; background soil sampling and confirmation soil sampling, air sampling and monitoring, and OSHA personal air sampling.  
• Recently has served as environmental lead for several wildfire projects in California, including the Thomas, Detwiler, Clayton Valley, Lake Isabela, and Harbin fires |
| Marcos DoCanto       | **Over 3 years of experience** in disaster recovery and land development.  
• Proficient in the use of AutoCAD Civil 3D, Geographic Information System (GIS), Auto Turn, Hydrocad, Roadview Workstation, and InfraWorks software, and familiar with the use of field instruments for land surveying.  
• Served as lead data manager for the Sonoma, Mendocino, and Napa Counties wildfire projects where he validated documentation and metrics being reported as accurate and on-schedule for the debris removal of over 500 fire damaged homes. |
| Paris Atkinson       | **Over 12 years of data management experience** in the disaster recovery field.  
• Extensive experience on all aspects of program data management up to and including project closeout and post-closeout audit support.  
• High-level knowledge and understanding of federal grant programs, including the FHWA Emergency Relief (ER) program and FEMA PA program.  
• Her responsibilities include data management, management of monitoring documentation for the FEMA, invoice reconciliation, and the use of our ADMS. |
| Asad Khan            | **Over eight years** of reimbursement and grant management experience  
• Technical resource to clients during implementation of the Federal Emergency Management Agency (FEMA) Public Assistance (PA) Grant Program and other federal grant programs following presidential disaster declarations and emergencies.  
• Oversees the preparation, development, and review of FEMA PA project worksheets for Category A–H disaster-related activities, state appeals, and close out processes. |
| Don Olson            | **Over 10 years of FEMA PA experience**  
• Extensive knowledge in Project Worksheet (PW) formulation in areas such as debris removal, emergency protective measures, force account labor and equipment, and permanent work.  
• Specializes in document analysis, eligibility requirements, audit preparation, and closeout assistance, which allows the client to maximize reimbursement. |
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<th>Name</th>
<th>Summary of Qualifications</th>
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<tr>
<td>Kalindi Finch</td>
<td><strong>More than 7 years of</strong> extensive experience in federal grant programs, such as the Federal Emergency Management Agency (FEMA) Public Assistance (PA) Grant Program, Hazard Mitigation Grant Program (HMGP), and the CDBG-DR Programs.</td>
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<td>Understanding of the grant administration process, eligibility requirements, regulations, and policies across federal programs.</td>
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<td>Provides oversight throughout the grant administration period and has lead damage assessment, application development, environmental review, project and process monitoring, and closeout and audit activities.</td>
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<td>Ability to provide post-disaster Public Assistance and long-term recovery services including damage assessments, site inspections, grant management and monitoring, and program management.</td>
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<td>Christopher Godley, CEM</td>
<td>California-based, Certified Emergency Manager (CEM) with more than 25 years of experience in public safety and emergency management for public and private sector clients.</td>
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<td>Served as the Manager of Emergency Services for Marin County, California, and as the Deputy Emergency Services Coordinator for Sonoma County, California.</td>
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<td>Currently acting as the County Emergency Services Manager in Sonoma County, California, working with partner agencies and the public to develop a comprehensive Community Warning Program and oversaw the development of the County’s Wildfire After-Action Report.</td>
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<tr>
<td>Rob Flaner, CFM</td>
<td><strong>Over 30 years of experience</strong> in disaster assistance and floodplain management, including administering the Community Rating System (CRS) under contract with FEMA.</td>
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<td>Experience in planning and preparing for the impacts of all natural hazards through coordinated planning efforts pursuant to the Disaster Mitigation Act of 2000.</td>
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<td>Supported local governments across the country in all phases of emergency management.</td>
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<td>Currently serves as Tetra Tech’s Hazard Mitigation program manager for the western U.S. A position that involves managing multi-disciplined projects as well as providing subject matter expertise in all phases of emergency management.</td>
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<tr>
<td>Bart Spencer</td>
<td><strong>Over 30 years of experience in public safety and emergency management</strong> for both public and private sector clients.</td>
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<td>Extensive experience in California, including serving as project lead for the San Mateo County Hazard Mitigation Plan, coordinating 30 agencies through Federal Emergency Management Agency (FEMA) approval.</td>
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<td>Mr. Spencer has been involved with disasters that include small plane crashes, floods, fires, earthquakes, and tornados.</td>
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<td>Experience with updating and facilitating emergency management programs, including mitigation and planning efforts, trainings, and exercises, developing emergency and crisis communication plans.</td>
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Served as the Western Region Director for Roam Secure/Cooper Notification, an early developer in mass notification and emergency communication. In that role, he oversaw operations and services in the West including more than 40 system deployments.

Exhibit 1-1 shows our proposed project team organizational structure. Résumés have been included at the end of this section.

Exhibit 1-1: Project Team Organizational Chart

Subcontractors

Although Tetra Tech does not anticipate using any subcontractors for the County’s proposed project, should the need for a particular specialty arise during a project, Tetra Tech diligently promotes an equitable opportunity to subcontractors whose capabilities complement our own.

As firm policy, Tetra Tech conscientiously looks for opportunities to work with small, women-, minority-owned and disadvantaged business enterprises where specific and individual capabilities complement our own for the benefit of the successful completion of a project. We have established working relationships with a number of small, women-, and minority-owned firms, and have worked with many agencies having equal employment opportunity requirements. In addition, we maintain a comprehensive file of the qualifications and experience of these firms to aide us in selecting appropriate subcontractors for specific project tasks.
Section 1: Personnel/Management Skills

Résumés
EXPERIENCE SUMMARY

As President of Tetra Tech’s Disaster Recovery Business Unit, Mr. Burgiel manages the business operations of all disaster recovery efforts, including preparedness planning, project staffing, logistics, grant administration and agency reimbursement support, program accounting/auditing oversight, and contract negotiations. Mr. Burgiel is dedicated to helping communities plan for and recover from disasters and provide the necessary documentation to receive the maximum allowable reimbursement from federal and state emergency management agencies.

Mr. Burgiel has 30+ years of solid waste and disaster recovery experience. His disaster-related work has included serving as principal in charge of over 30 projects, helping clients throughout the country prepare for, respond to, and recover from natural and human-caused disasters.

Mr. Burgiel is intimately familiar with local, state, and federal solid waste and hazardous waste regulations, as well as U.S. Department of Housing and Urban Development (HUD), Federal Emergency Management Agency (FEMA), and Federal Highway Administration (FHWA) policies and reimbursement procedures as they relate to disaster management and recovery.

RELEVANT EXPERIENCE

Mr. Burgiel has provided senior management oversight to the following projects:

- 67 communities and over 2,400 staff in Florida – Hurricane Irma
- 38 communities and over 1,400 staff in Texas – Hurricane Harvey
- Multiple communities in South and North Carolina – Hurricane Matthew
- Richland County & Lexington County, South Carolina - South Carolina 1,000-year Flooding Event - Comprehensive Disaster Recovery Services
- Hays County/City of Wimberley, Texas – Severe Flooding Disaster Recovery Assistance
- New Jersey Department of Environmental Protection (NJDEP) – Hurricane Sandy Disaster Vessel Recovery Program
- State of Connecticut – Hurricane Sandy Disaster Debris Program
- State of Louisiana – Hurricane Isaac Disaster Debris Program Management
- City of New Orleans, Louisiana – Hurricane Katrina Residential Demolitions
- Bastrop County, Texas – Wildfires
- City of Cedar Rapids, Iowa – Severe Flooding
Senior Project Manager (June 2017 – Present)
Restore Louisiana | HUD CDBG-DR Housing Rehabilitation
Served as Project Manager over the preparation of over 10,000 Tier 2 environmental reviews and over 5,000 lead risk assessment and clearance inspections. This $20 million project performed by Tetra Tech utilized state of the art technology and cloud based technology to decrease the cost of performing a Tier 2 review by over 50% from prior state led residential rehab projects.

Principal-in-Charge (October 2015–November 2015)
Richland County South Carolina | Comprehensive Post-Disaster Flood Support Services
Following the State of South Carolina’s 1,000-year flooding event that took place from October 1–5, 2015, Mr. Burgiel led a team of Tetra Tech staff to provide comprehensive disaster recovery services to Richland County immediately following the historic flooding event. Services included but were not limited to FEMA PA reimbursement support, procurement package development for over 270 road and bridge repairs, well testing and disinfection program management, a post-disaster outstanding needs assessment, flood mitigation planning support, grant funding strategic plan development, and coordination and technical support activities among the County, State and FEMA agencies.

Principal-in-Charge (May 2015–October 2015)
Hays County/City of Wimberley Texas | Post-Disaster Flood Support Services
Following the historic flooding event along the Blanco River where over 20 people perished, Mr. Burgiel provided technical support in the Hays County, Texas Emergency Operations Center (EOC) during and immediately following the flooding disaster. As part of these services, Mr. Burgiel supported the County and City of Wimberley in providing expert technical advice associated with providing the County/City appropriate measure for responding to the event and methods for best tracking the County’s disaster-related costs to maximize the County’s/City’s FEMA reimbursement post-disaster. Mr. Burgiel was instrumental in standing up the County right-of-way debris removal program and subsequently obtaining approval for a private property debris removal (PPDR) program from FEMA to cover the extensive debris that remained along and in the Blanco River, which created a future health and safety hazard to the County and City.

Senior Management (September 2008-January 2009)
Harris County, Texas | Hurricane Ike Disaster Debris Program Management
In 2008, Hurricane Ike made landfall in Texas, causing extensive damage to Harris County, the fourth largest county in the United States. Mr. Burgiel rode out the storm in Harris County’s EOC and assisted with the deployment of our response team following the storm. Our team assisted with monitoring and cost reimbursement for over 2.5 million cubic yards of debris from the public right-of-way (ROW) in response to Hurricane Ike.

Senior Management (September 2004-September 2009)
City of Orlando, Florida | Disaster Debris Program Management
Mr. Burgiel served in a senior leadership role and assisted the City of Orlando with a range of storm recovery monitoring and management activities. Mr. Burgiel was responsible for managing a full support team involved with staging operations, load inspections for storm debris cleanup performed by contract haulers, scheduling, dispatching, and logistics operations for the field inspectors assigned to storm debris cleanup. Our team’s assistance enabled the City of Orlando to promptly apply for and receive reimbursement for the total cleanup cost from state and federal emergency management agencies.

Senior Management (February-April 2007)
Volusia County, Florida | Groundhog Day Tornado Disaster Recovery and Storm Debris Removal
Our team was retained by Volusia to assist with monitoring of cleanup efforts following the Groundhog Day tornadoes that swept through Central Florida during the early morning hours, leaving 20 people dead and many others injured and without homes. Under Mr. Burgiel’s direction, our team mobilized a response team to the area to help identify critical debris removal areas and initiate its ROW debris removal operation. Mr. Burgiel oversaw
the management of a full support team involved with staging operations, load inspections for storm debris cleanup, and logistics operations for the field inspectors.

**Senior Management (August 2004-2005)**

City of Boca Raton, Florida | Hurricane Frances Disaster Recovery and Debris Cleanup Management

Following Hurricane Frances, Mr. Burgiel supervised the responsive deployment of support teams, assisted with staging operations, and managed scheduling, dispatching, and logistics operations for the field inspectors assigned to storm debris cleanup.

**Senior Management (August 2005-October 2006)**

Miami-Dade County, Florida | Hurricanes Katrina and Wilma Disaster Recovery and Debris Management

After Hurricanes Katrina and Wilma struck Miami-Dade County, our team provided immediate on-site assistance and a wide range of disaster recovery management and storm debris cleanup monitoring services to help Miami-Dade County make a quick recovery. Under Mr. Burgiel’s direction, our team assembled and deployed a full disaster recovery team to assist Miami-Dade County with removal of approximately 5.5 million cubic yards of debris. Mr. Burgiel oversaw the data management process and assisted Miami-Dade County with FEMA project worksheets and appeals.

**Senior Management (August 2004)**

Polk County, Florida | Hurricane Charley Program Management and Disposal Site Monitoring Assistance

In the weeks following Hurricane Charley, Mr. Burgiel assisted Polk County with planning and managing disposal site monitoring activities. He was responsible for overseeing disposal site monitors, as well as spotters at Polk County’s northeast, north central, and southeast landfills. Mr. Burgiel managed documentation efforts to help Polk County promptly apply for and receive reimbursement for the total cleanup cost from state and federal emergency management agencies.

**Senior Management (August 2004-2005)**

Lake County, Florida | Hurricanes Charley and Frances Disaster Recovery and Debris Management

Following Hurricanes Charley and Frances, Mr. Burgiel helped Lake County perform a range of storm debris cleanup monitoring and management activities. He supervised staging operations, load inspections for storm debris cleanup performed by contract haulers, scheduling, dispatching, and logistics operations for the field inspectors assigned to storm debris cleanup.

**Senior Management (September 2005-September 2008)**

City of Pensacola, Florida | Hurricane Ivan Disaster Debris Program Management

Mr. Burgiel provided assistance to the City of Pensacola in performing a range of storm debris removal monitoring and management activities for this $30 million debris removal process. Mr. Burgiel supervised debris removal efforts, including permitting of debris processing sites, collection and disposal site monitoring as required by FEMA, review and approval of contractor invoices, and the preparation of project worksheets required by FEMA for federal funding.

**Project Management (September – October 2001)**

Sarasota County, Florida | Tropical Storm Gabrielle Disaster Debris Program Management

As a result of Tropical Storm Gabrielle in 2001, Sarasota County required assistance with logistics, staging operations, and load inspections for storm debris cleanup performed by contract haulers. As project manager for the project, Mr. Burgiel assisted Sarasota County with scheduling, dispatching, and logistics operations for the field inspectors assigned for storm debris cleanup.
EXPERIENCE SUMMARY

Ms. Cabrera has worked nationwide on major post-disaster activations since Hurricane Wilma in 2005, where she has served in a variety of roles focusing on reimbursement for more than $2 billion from the Federal Emergency Management Agency (FEMA). Ms. Cabrera has worked on behalf of cities and counties throughout the United States and is a highly regarded expert in the debris management industry.

In addition to her work with post-disaster recovery operations, Ms. Cabrera has worked with a number of clients on longer-term financial recovery, including serving as a technical resource to clients during implementation of the FEMA Public Assistance (PA) Program and other federal grant programs and assisting in the preparation, development, and review of FEMA PA Project Worksheets (PWs) for disaster related activities, state appeals, and closeout processes. Within the Tetra Tech post-disaster practice Ms. Cabrera is the lead technical expert on the FEMA PA Program. She serves as a resource to our post-disaster projects across the board to ensure consistency in understanding and implementation of requirements. Ms. Cabrera is often called on by our regional project managers to provide technical expertise on various projects.

Ms. Cabrera has developed valuable partnerships with various clients, helping them to plan for and prepare for potential disasters. This work has included providing training sessions and participating in exercises with communities across the Country, including helping many cities and counties create or update disaster debris management plans and develop ongoing staff training programs.

FEATURED RELEVANT EXPERIENCE

Regional Program Manager (September 2017–Present)

Hurricane Irma
Hurricane Irma affected the entire state of Florida and Ms. Cabrera has served as the regional program manager for one of the hardest hit areas including Collier County where the storm made landfall. In addition, Ms. Cabrera was also the Regional Program Manager providing technical expertise to the Cities of Naples, Marco Island, Cape Coral, and Charlotte County.

Regional Program Manager (August 2017–Present)

Hurricane Harvey
Hurricane Harvey made landfill in Texas as a Category 4 hurricane and caused over $125 billion in damage to the State. Tetra Tech provided program management and debris monitoring services to over 35 clients in the State. Mrs. Cabrera served as a Regional Program Manager and provided

EDUCATION

Florida Atlantic University
Master of Business Administration, International Business, 2011
Bachelor of Arts, Liberal Arts, 1999
senior leadership and guidance to projects such as The Town of Katy and Montgomery County.

**Debris Senior Subject Matter Expert (July 2015–March 2016)**

**Los Angeles County, California | Operational Area MDMP**

Ms. Cabrera has been serving as a senior debris subject matter expert in support of Los Angeles County’s establishment of an Operational Area (OA) Mass Debris Management Plan. This is one of the largest and most complex plans of this kind in the United States. The Los Angeles County OA involves a diverse stakeholder group of multiple County agencies and 88 municipalities within the County, along with other public entities and private-sector partners. The project has included multiple planning meetings, stakeholder outreach, outreach to private-sector partners, and a tabletop exercise. The resulting plan will provide a framework, including roles and responsibilities for coordination within the OA in a mass debris-generating event as well as a template for municipalities to develop their own individual debris management plans.

**Regional Program Manager (October 2016-March 2017)**

**Hurricane Matthew**

After Hurricane Matthew impacted the east coast of the United States in October 2016, Ms. Cabrera served as the regional program manager for many of Tetra Tech’s Florida clients overseeing all aspects of operations for Brevard and St. Johns Counties and the Cities of Cocoa Beach, Port Orange, Holly Hill, South Daytona, New Smyrna Beach, Oak Hill and Lake Helen.

**QA/QC Manager (January 2016–August 2016)**

**CalRecycle Butte Fire Response**

The Butte Wildfire impacting Calaveras County, California was one of the most destructive in State history. The Department of Resources Recycling and Recovery (CalRecycle) was tasked to design and implement the structural debris removal plan for the Butte Fire incident. One of the prime contractors facilitating the removal of ash and debris from the fire and assisting in the environmental restoration of the area is Sukut Construction, who has sub-contracted to Tetra Tech for the data management of all the costs associated with the debris removal to be separated by each individual private parcel. Ms. Cabrera is overseeing the reconciliation of tens of millions of dollars of invoices and the preparation of documentation to be submitted to the State of California.

**Debris Program Manager (January 2016–February 2016)**

**Collier County, Florida | 2016 Straight-Line Winds**

In January 2016, Collier County was forced to manage debris after a straight-line windstorm left a swath of damaged and downed trees across the County. After a long history of helping Collier County to plan for such disasters, including annual trainings and a 2015 update of their Disaster Debris Management Plan, Ms. Cabrera assisted with the rapid ramp-up to monitor disposal of debris from the impacted areas. Tetra Tech worked for the County for a three-week period and monitored and documented the contractor’s removal of over 44,000 cubic yards of vegetative debris during this brief time-frame.

**Public Information Technical Assistance (September 2015–December 2015)**

**Lake County, California | Valley Wildfire**

The Valley Fire began September 12, 2015, in Lake County and burned 76,067 acres in Lake, Napa, and Sonoma Counties prior to being fully contained. 1,958 structures were ultimately destroyed, and the intensity of the Valley Fire destroyed many trees. There were multiple cooperating agencies participating in various aspects of the fire response and recovery efforts, including the California Office of Emergency Services (CalOES), California Department of Transportation (Caltrans), California Department of Resources Recycling and Recovery (CalRecycle), and Pacific Gas and Electric Company (PG&E). Specifically, Lake County’s responsibility has been to provide for safe use of County-maintained roads and trails within County parks resulting in a County run program to address dead and dying trees threatening County roadways. Given the weariness of residents with the ongoing fire recovery, the multiple private contractors hired by various agencies involved with recovery efforts, the general concern over responsible tree removal operations, the community benefit to retaining trees when possible, and the need for entry on to private property for portions of the work, it was important for the County to
devise a clear and responsive communications plan to keep residents informed of all aspects of the project. Ms. Cabrera helped write a public information plan to provide timely and accurate information to County residents. This was a multi-faceted approach to communicate information and included a County web page, mailers to County residents, identification badges for contractors, informational flyers, Town Hall style meetings, and a citizen information center.

**Debris Subject Matter Expert (July 2015–Ongoing)**

**Los Angeles County, California | Operational Area MDMP**

Ms. Cabrera has been serving as a debris subject matter expert in support of Los Angeles County’s establishment of an Operational Area (OA) Mass Debris Management Plan. The Los Angeles County OA involves a diverse stakeholder group of multiple County agencies and 88 municipalities within the County, along with other public entities and private-sector partners. The project has included multiple planning meetings, stakeholder outreach, outreach to private-sector partners, and a tabletop exercise. The resulting plan will provide a framework, including roles and responsibilities for coordination within the OA in a mass debris-generating event as well as a template for municipalities to develop their own individual debris management plans.

**Debris Subject Matter Expert (November 2015–December 2016)**

**Central Contra Costa Solid Waste Authority | Multi-Jurisdictional Disaster Debris Management Plan (DDMP)**

The Central Contra Costa Solid Waste Authority (SWA) is a Joint Powers Authority with six member agencies, including portions of unincorporated central Contra Costa County, the Towns of Danville and Moraga, and the Cities of Lafayette, Orinda, and Walnut Creek. The SWA service area has a population of approximately 215,000 people and is responsible for managing franchised refuse and recycling collection, processing, and disposal services for its member agencies. After the nearby Napa Earthquake in 2014, the agency became concerned about the ability to handle and coordinate disaster debris in addition to regular municipal solid waste collection in the region. Desiring a regional planning approach, the SWA wanted to proceed with a planning process that results in individual disaster debris management plans for the six member jurisdictions that roll up into an overarching regional framework. Ms. Cabrera has been instrumental in developing and managing this unique planning process, including both regional planning meetings and jurisdictional meetings. Ms. Cabrera has also provided operational expertise to jurisdictions that largely have not had to address debris management in the past.

**PA Consulting/Debris Subject Matter Expert (August 2014–October 2014)**

**City of Napa, California | California Earthquake–PA Consulting Services**

Ms. Cabrera provided technical assistance and subject matter expertise to the City of Napa, California, following the August 2014 earthquake. Ms. Cabrera assisted the City by identifying FEMA PA eligible work and the required supporting documentation. She then assisted with the development of Category A PWs for federal reimbursement.

**Debris Subject Matter Expert (March 2014–September 2014)**

**Montgomery County, Pennsylvania | Multi-Jurisdictional DDMP**

Ms. Cabrera served as a debris subject matter expert and supported Montgomery County in establishing and implementing a multi-jurisdictional debris management planning program. Ms. Cabrera assisted with the planning meetings and in developing a customized DDMP. This program enhanced Montgomery County’s ability to facilitate the performance of government services during and after a debris-generating disaster.

**Debris Subject Matter Expert (June 2008–Present)**

**Broward County, Florida | County-Wide Debris Site Assessments Study**

Since 2008, Ms. Cabrera has provided consultation and debris subject matter expertise to Broward County in preparation for a potential FEMA declared disaster. Ms. Cabrera has worked closely with many members of various County departments to ensure information has been gathered based on past experiences and
improvements made to proactively prepare for managing the execution of a Stafford Act PA Grant Program. In addition to providing management on several County planning projects, Ms. Cabrera has worked with the County’s Solid Waste and Recycling accounting department to update their internal database systems to support account reconciliations necessary to control and report on County PW accounts as well as the disposal accounts for the 31 separate applicant municipalities that may use the County solid waste disposal sites in a declared disaster event.

**QA/QC Manager (November 2007–November 2013)**
City of New Orleans, Louisiana | Hurricanes Katrina, Gustav, and Isaac Disaster Recovery Services
Ms. Cabrera has supported the City of New Orleans following Hurricanes Katrina (2005), Gustav (2008) and Isaac (2012) as part of the data management and invoice reconciliation team for the City’s numerous debris removal programs. She has worked closely with parish, debris contractor, and FEMA staff to provide regular updates on the quantities and types of debris collected to the City of New Orleans.

**Data Manager (August 2012–March 2013)**
St. John the Baptist Parish, Louisiana | Hurricane Isaac Disaster Recovery Services
Following Hurricane Isaac, Ms. Cabrera was part of the data management team for the Parish’s debris removal project. She worked closely with parish, debris contractor, and FEMA staff to provide regular updates on the quantities and types of debris collected.

**Public Assistance Grant Administrator (January 2010–September 2012)**
Port of Galveston, Texas | Hurricane Ike Financial Recovery Services
Ms. Cabrera assisted with the PA Grant Administration for the Port of Galveston, Texas following Hurricane Ike. Ms. Cabrera’s tasks included reviewing and reconciling PWs for State and FEMA closeout for Hurricane Ike. In the course of the initial review, damages not captured in the initial PWs were identified including storm induced erosion damages that did not become evident until many months after the initial disaster. Ms. Cabrera was involved in the process of writing new PWs for the previously undocumented damage which included the formulation, review and management of damage descriptions, bid specifications, scope of work, contractors specifications, force account labor and equipment, logistics of project commencement and completion, invoicing, tracking of funds, site visits and photos, State and FEMA communication, and monitoring the obligation and closeout process.

**Invoice Reconciliation Analyst (October 2005–August 2012)**
City of Hollywood, Florida | Hurricanes Katrina and Wilma Financial Recovery Services
Ms. Cabrera worked with the City of Hollywood as an invoice reconciliation analyst immediately following Hurricanes Katrina and Wilma when they impacted the area in 2005. She oversaw the data management process at an established local data center and worked with the City, their multiple debris contractors and FEMA staff to reconcile the invoices for debris removal work which provided the back-up for the FEMA PWs. Ms. Cabrera has remained a consultant to City of Hollywood staff working with their accounting and finance department to respond to FEMA requests for additional information and as audit support for both FEMA and Office of Inspector General (OIG) audits.
EXPERIENCE SUMMARY

Mr. Ralph Natale is the director of post-disaster programs for Tetra Tech, Inc. He leads the practice by developing programs, providing daily project support, and providing oversight and guidance to his team of project managers and projects. Mr. Natale is an expert in Federal Emergency Management Agency-Public Assistance (FEMA-PA) Grant Program reimbursement policies and has administered nearly 230 projects in his 13-year career.

Mr. Natale has served as a principal in charge or project manager in response to some of the country’s largest debris-generating disasters, including NORCAL and SOCAL Wildfires, Hurricanes Harvey, Irma, Matthew, Katrina, Ike and Sandy. This includes managing and documenting the removal of over 46 million cubic yards (CYs) of debris and over 1.3 million hazardous trees. This and the program management of over 9,600 demolitions total over 2.5 billion dollars of reimbursed invoices.

FEATURED RELEVANT EXPERIENCE

Subject Matter Expert (Debris Consultant, Program Management, Grant Management)

Mr. Natale has served as a debris documentation specialist and grant consultant for state and local governments during his extensive career in disaster debris industry. This includes serving as a current member of the State of Connecticut Emergency Operations Debris Task Force, where he was activated during the recovery operations following Hurricane Irene and Winter Storm Alfred.

Mr. Natale has also served as a senior consultant and subject matter expert on the following projects:

- USACE | NorCal Wildfires, 2017 – present
- State of California | SoCal Wildfires, 2018 – present
- City of Houston, Texas | Hurricane Ike, severe droughts, May 2015 floods (June 2009 –Present)
- Lake County, California | Valley and Butte Fire (September 2015–2016)
- City of New Orleans, Louisiana | Hurricane Isaac (September–December 2012)
- Texas Department of Transportation | Federal Highway Administration-Emergency Relief Statewide Training (January–July 2010)
- Connecticut Department of Transportation | Winter Storm Alfred (October 2011–July 2012)
- Boulder County, Colorado | 2013 Floods (October 2013 –2015)
Principal in Charge/Senior Program Manager
As director of post-disaster programs for Tetra Tech, Mr. Natale has focused on developing and improving program management processes. These processes ensure the most efficient methods of managing debris removal programs to maximize federal reimbursement via the PAPPG, FEMA 325, and 327 guidelines. As a senior program manager, Mr. Natale ensures quality control and quality assurance of project managers’ deliverables on all Tetra Tech projects. A representative list of projects he has worked on is included below:

Ventura California Wildfire Response (February 2018 – Present)
Mr. Natale serves as principal in charge for USACE ADMS services for all the work completed after the Northern California wildfires in 2015. This included debris and environmental services of over 8,000 homes and over 1 billion dollars in costs. Mr. Natale oversees the overall project management team and assists with staffing and logistics for this four county response.

Florida Department of Environmental Protection (2016-2018)
Mr. Natale serves as principal in charge for FDEP waterways debris removal programs (wet debris). Unlike conventional debris removal programs that are well established every waterways program needs a level of customization. Mr. Natale has provided this oversight working with the State of Florida, FEMA and the local counties that recovery was being conducted. Counties worked post Matthews and Irma include; Nassau, St. Johns, Ventura, Brevard, Monroe, Collier, Lee.

Detwiler Fire (August 2017-Present) and Helena Fire (September 2017 - Present) California Fire Response
Following the catastrophic fires that impacted California in the fall of 2017, Mr. Natale has been overseeing disposal operations for both the Detwiler and Helena Fires. Under Mr. Natale’s direction, the Tetra Tech team was responsible for the hazard assessment of over 200 parcels of burned area in Northern California. Tetra Tech also conducted OSHA personal sampling and air monitoring and sampling during all operations to ensure protectiveness to public health during cleanup operations. Tetra Tech assessed each parcel for radiation, VOCs, lead, asbestos, and debris estimates.

Clayton Valley Fire California Fire Response (October 2016-January 2017)
As senior program manager, Mr. Natale was responsible for coordinating project management staff, overseeing health and safety operations, and responsible for overall completion of the project. He also oversaw the Tetra Tech team that conducted OSHA personal sampling, air monitoring, and sampling during the duration of the project to ensure protectiveness to public health during cleanup operations.

City of New Orleans; Jefferson Parish; and St. John the Baptist Parish, LA | Hurricane Isaac Debris Monitoring Operations (September–December 2012)
Mr. Natale oversaw the debris monitoring efforts following Hurricane Isaac. During this effort, our team monitored the collection and disposal of over 670,000 CYs of debris. Mr. Natale coordinated with several local governments, including the City of New Orleans, Jefferson Parish, and St. John the Baptist Parish.

Mr. Natale has provides senior management on the following projects:

- City of New Orleans, Louisiana | Hurricane Katrina Residential Demolitions (April 2010–Present)
- Bastrop County, Texas | Wildfires (September 2011–August 2013)
- City of Cedar Rapids, Iowa | Severe Flooding (May 2010–June 2011)
- University of Iowa | 2008 Severe Flooding (March 2012–Present)
- City of Houston, Texas | Standing Dead Trees (May 2010–June 2011)
- Terrebonne Parish, Louisiana | Hurricane Ike (July 2010–February 2011)
- State of Connecticut Hurricane Irene (September 2011–November 2011)
Résumé

Ralph Natale, Director, Post Disaster Programs

Project Management
On large debris projects, Mr. Natale will be temporally relieved of his director duties by senior management support and focus on the management of a single project. As a result, Mr. Natale has managed some of the largest debris-generating projects in the country with great success.

City of Houston, Texas | Hurricane Harvey (August 2017 – Present)
Hurricane Harvey caused an unprecedented Citywide flooding event with a total of 13 primary debris haulers responding. Mr. Natale helped create new systems and reports were developed to manage the debris haulers and support a live web feed on the Houston recovery webpage. To date the City and its debris haulers collected over 2.5 million cubic yards of flood debris. The project is expected to continue through the end of this year as residents continue to recover from this catastrophic event.

Town of Hilton Head Island, South Carolina | Hurricane Matthew (October 2016 – June 2017)
Mr. Natale provided project management and oversight for the popular tourist destination, Hilton Head Island, following extensive damage caused by Hurricane Matthew. Within hours of the disaster, Mr. Natale was on-site to assess the damage and meet with Town officials. Mr. Natale managed the mobilization of a local team of debris monitors and established our automated debris management system (ADMS) for the City to provide real-time updates on the debris removal operations. In total, our team monitored the removal of 2,187,080 cubic yards of debris.

City of Houston, Texas | Memorial Day Floods (May – August 2015)
Mr. Natale designed and incorporated an operational plan to manage debris removal efforts on over 6,000 road miles and 1,000,000 parcels in 60 days. 650,000 yards were collected in the 256 debris zones using City of Houston force account labor and equipment and contractor resources.

City of Houston, Texas | Hurricane Ike Disaster Debris Program Management (October 2008 – July 2010)
Our response to the City of Houston following Hurricane Ike included the collection of over 5.5 million CYs of debris in 256 zones throughout the City. This also included 300 parks and open spaces. Mr. Natale also was tasked with managing the firm’s largest hazardous tree removal program for the City of Houston. The program involved removing over 214,000 hazardous trees accompanied by 630,000 photographs to document eligibility. Mr. Natale worked closely with the City of Houston Solid Waste and Finance Department to reconcile and provide detailed information of over $110 million in invoices and over $3 million in FHWA funds. Mr. Natale also helped reconcile and submit over $9 million in force account labor.

Mr. Natale has also served as a project manager or operations manager on the following projects:

- Winter Storm Pax | Augusta-Richmond County 2014
- Hurricane Gustav | Iberville Parish, Louisiana, 2008
- Hurricane Gustav | City of Central, Louisiana, 2008
- Hurricane Dolly | Hidalgo County, Texas, 2008
- Winter Storms | Town of North Tonawanda, New York, 2007
- Hurricane Wilma | Collier County, Florida, 2006
- Hurricane Wilma | City of Naples, Florida, 2005
EXPERIENCE SUMMARY

Mr. Jeffrey Dickerson has more than 30 years of experience in program management, with extensive experience in technical organizational management, training, and readiness exercises. He is a military veteran with skills in leadership, training, and personnel development. As the Technical Applications Manager, Mr. Dickerson is responsible for the planning, development, deployment of technical applications supporting emergency response operations for the firm.

Mr. Dickerson has extensive experience in process improvement and application of advanced technology to boost efficiency post-disaster field and data operations. He recently presented at the National Hurricane Conference on the use and application of technology to improve disaster response cost efficiency.

Mr. Dickerson has led the development and support of Tetra Tech’s automated debris management system (ADMS), RecoveryTrac™. As one of only three systems validated by the USACE, it is the preferred provider by the USACE debris contractors, providing ADMS services to 6 of 8 USACE districts globally. RecoveryTrac’s flexibility and GIS capabilities provide best-in-class reporting and analysis tools. Additionally, RecoveryTrac’s web-based data feeds enable direct integration into client GIS and emergency management systems.

Mr. Dickerson has managed numerous large disaster activities with over 1,000 field monitors, coordinated the operation of a round-the-clock data processing centers—some with over 90 personnel, and provided technical support for a debris management database to track the over 1,000 trucks and documentation for over 5 million cubic yards of debris brought to the client’s debris management sites (DMS).

RELEVANT EXPERIENCE

GIS/ADMS Applications Manager (October 2017–July 2018)
Sonoma, Napa, Lake and Mendocino Counties, CA | Wildfire Disaster Debris Private Property Debris Removal (PPDR) Program Management

As part of a FEMA-Army Corps of Engineers (ACE) contractor team, Mr. Dickerson supported the deployment and data management of the ACE compliant ADMS and GIS technologies to automate documentation of the private property hazard removal and fire debris removal mission. Mission assignment also included site assessment and environmental remediation sampling. To date, over 3,450 properties have been assessed, sampled and fire debris removed generating nearly 761,000 tons of debris. Advanced GIS mapping, document, and data analysis portals were used extensively to document FEMA, ACE, and California environmental requirements.
Résumé

Jeffrey Dickerson, GIS Operator/Specialist

Deputy Project Manager (May 2017–October 2017)
State of Louisiana, Restore Louisiana (ReLa) Program
Mr. Dickerson managed the HUD-mandated environmental reviews (Tier II Site Specific Reviews) in accordance with 24 CFR Part 58 and the current Restore Louisiana Program Environmental Review (Tier II) Procedures for over 10,000 flood damaged properties.

GIS/ADMS Applications Manager (October 2016–May 2017)
States of Florida, Georgia, South Carolina and North Carolina | Hurricane Matthew Disaster Debris Public and Private Property Debris Removal (PPDR) Program Management
Mr. Dickerson managed the deployment of customized GIS-enabled ADMS technology. The system documented removal of over 8.5 million CYs of debris and 198,000 tree hazards while supporting 720 ADMS field employee and 47 debris management sites at a removal rate of nearly 165,000 CYs/day.

ADMS and Logistics Manager (May 2015–August 2015)
State of Texas | Severe Flooding Debris and Hazard Removal Program Management
Mr. Dickerson managed the logistics and deployment of staff equipment and supplies as well as ADMS technology to 10 county and local clients in a multi-jurisdiction activation, including over 135 handheld devices removing 325,000 cubic yards of flood and household debris. Advanced GIS web services and data information portals were used extensively in managing the hazardous material pickups, road pass clearance, and public information applications.

GIS Field Application Manager (November 2014–May 2015)
City of New Orleans, LA | Hurricanes Katrina Demolition Phase II Program Management
Mr. Dickerson developed and deployed mobile field GIS technology to automate the private property demolition survey and documentation. Custom GIS base workflow automation provided custom form generation from collected field data. Phase II included the survey and demolition of over 375 structures.

GIS/ADMS Application Manager (February 2014–June 2014)
States of Georgia and South Carolina | Winter Storm Pax Disaster Debris Program Management
Mr. Dickerson managed the logistics and deployment of ADMS technology to seven county and local clients in a multi-state activation, including over 265 handheld devices for over 110,000 hazardous limb and tree removals and over 1,000,000 cubic yards of debris. Advanced GIS web services and data analysis portals were used extensively in managing the projects and public information applications.

ADMS Application Manager (October 2013–December 2013)
State of New Jersey Department Environmental Protection | Hurricane Sandy Disaster Debris Program Management
Mr. Dickerson managed the logistics and deployment of ADMS technology, including over 45 handheld devices for waterway debris and sediment removal for two-thirds of New Jersey’s coastline. The RecoverTrac™ work documentation module was heavily used to document the step-by-step progress. Over 58,000 photos documenting the collection and disposal of the debris and sediment were recorded.

ADMS Application Manager (August 2012–July 2013)
St. John the Baptist Parish, Louisiana | Hurricane Isaac Disaster Debris Program Management
Mr. Dickerson managed the logistics and deployment of ADMS technology, including over 120 handhelds units used by the Parish to expedite the recovery process collecting over 225,000 cubic yards of debris. Detailed pickup locations and damage reports were used extensively to keep community leaders informed of progress.

ADMS Application Manager (September 2011–June 2013)
City of Houston, Texas | Drought & Wildfires Debris Removal Monitoring
Mr. Dickerson managed the multi-year logistics and deployment of ADMS technology, including over 25 handheld devices in a multi-phased removal of thousands of trees following a severe drought documenting over 260,000
cubic yards of debris. His responsibilities include the deployment, support, and staff training of the ADMS mobile system and development of custom mapping and reports.

**Logistics and Network Operations Manager (August 2011–June 2012)**  
*States of Virginia and North Carolina | Hurricane Irene Debris Removal Monitoring*  
Following Hurricane Irene, Mr. Dickerson managed the logistics and network infrastructure to support the project work for over 15 state, county, and local clients. His responsibilities included ensuring the availability of application and communication systems to support disaster operations. Logistical responsibilities included arranging travel, accommodations, equipment, and supplies needed to support field operations.

**Data Operations Manager (September 2008–September 2011)**  
*City of Houston and Harris County, Texas | Hurricane Ike Debris Removal Monitoring*  
Following Hurricane Ike, Mr. Dickerson provided IT and logistics support to the City of Houston and Harris County. His responsibilities included IT site support, system setup, end-user training, equipment rentals, and supply distribution.
EXPERIENCE SUMMARY

Mr. John Buri is a director of post-disaster programs for Tetra Tech, Inc., and a member of our senior management team. Mr. Buri has a thorough understanding and practical application of industry best practices and federal guidance governing such efforts including the Federal Emergency Management Agency (FEMA), Hazard Mitigation Assistance (HMA), FEMA Public Assistance (PA) Program, 2 CFR 200, HUD CDBG-DR and disaster funding strategies for local and state governments. Key highlights of Mr. Buri’s career include:

- **16 years of experience**: Working with mitigation, emergency management planning, response, and recovery operations
- **$3 billion**: His work has represented over $3B in disaster related grants.
- **22 Disaster Declarations**: Performed in roles of project manager or principal-in-charge
- **$142 million**: Served as program manager for $142M in buyout /elevations
- **41 Total Disaster Declarations**: Worked on projects in either a project manager, principal in charge or support role.
- **17 States**: Worked in 17 states across 8 FEMA Regions
- **100 clients**: Mr. Buri has worked for over 100 state and local governments clients since 2004

FEATURED RELEVANT EXPERIENCE

**Multi-year Emergency Management & Disaster Recovery Services**

**City of Houston, Texas; Program Manager**

- Managed emergency responses to major disasters including Hurricane Ike in 2008 (DR-1791), Memorial Day flood in 2015 (DR-4223), and Tax Day flood in 2016 (DR-4269)
- Following each disaster, coordinated with FEMA, Texas Division of Emergency Management (TDEM), USACE, Texas Commission on Environmental Quality (TCEQ), city departments, elected officials,
congressional offices and volunteer groups to coordinate field activities, damage site inspections, eligibility reviews, and audits

- Managed planning team for 5 task orders under the DHS’ Regional Catastrophic Planning Initiative Grant and Urban Area Security Initiative grant allocated to the City of Houston Office of Homeland Security
- Program manager for the City’s flood resilience initiative in supporting the City’s Flood Czar conducting damage analysis, mitigation project identification and identification of grant opportunities.

**Hazard Mitigation Grant Program Support**

**Various Clients – US**

- Overall responsibility for the management and performance of task orders supporting $90+ in HMGP Grant applications across Texas, Georgia, Florida, South Carolina and North Carolina.
- Developed processes and implementation strategies for outreach, intake and verification for 100 elevations and 200 acquisition/demolitions

**Multi-year Emergency Management & Disaster Recovery Services**

**Montgomery County, Texas**

- Managed emergency responses to multiple major disasters including Hurricane Ike in 2008 (DR-1791) and two floods in 2016 (DR-4269 and DR-4272)
- Directed various task orders following disasters including project formulation, technical assistance on the PA grant program, conducting substantial damage estimation of 250 flooded properties, data collection for PA grant program and grant application for FEMA FMA grant program.
- Served as the client point of contact, prepared cost and technical task order proposals, assigned resources, reviewed deliverables, and tracked costs and schedules to ensure compliance with statements of work and approved budgets

**Program Manager (May 2015 – 2016)**

**Hays County, Texas | Full Services Disaster Grant Management Consulting and Debris Management | May 2015 (DR 4223) and October 2015 Floods (DR-4245)**

Mr. Buri lead the Tetra Tech team that supported Hays County following two (2) major disaster declarations in 2015 including the May Memorial Day Flood and October All-Saints Day Flood. This includes providing technical assistance to County leadership regarding FEMA PA, HMGP and CDBG-DR grant programs.

**Program Manager (July 2010-September 2012)**

**Port of Galveston, Texas | Hurricane Ike Federal Grant Administration**

Mr. Buri provided senior management oversight in assisting the Port of Galveston on a number of reimbursement-related issues. With Mr. Buri’s management and guidance, the Port of Galveston received more than $40 million in additional federal funding associated with permanent repairs to several of the port’s piers following damage from Hurricane Ike in 2008.

**Subject Matter Expert/Senior Management Oversight (May 2015-Ongoing)**

**City of Houston, Texas | Disaster Debris Monitoring and Public Assistance Consulting**

Following the May 2015 Memorial Day Flood in Houston, Mr. Buri worked closely with the City of Houston’s Disaster Recovery team on debris and FEMA reimbursement related issues. Mr. Buri developed operational plans, press releases, USACE/FEMA coordination, and daily progress reports along with contractor and force account labor documentation for submission to FEMA.

**Senior Management Oversight (March 2013-January 2014)**

**New Jersey Department of Environmental Protection – Liberty State Park | Hurricane Sandy FEMA PA Program Management**

Hurricane Sandy’s effect on the NJDEP’s Liberty State Park was epic, covering the entire park in several feet of seawater and affected nearly all of the park’s facilities and infrastructure, which included the Central Railroad of New Jersey Terminal Building. Mr. Buri managed a team of senior consultants that were immediately deployed to
assist with the park’s federal grant management. Mr. Buri oversaw all catalogued eligible damage, established relationships with FEMA and state officials, and oversaw the submission of project worksheets (PWs). Mr. Buri also was instrumental in working with NJDEP’s engineers to develop comprehensive hazard mitigation proposals to protect the facilities against future similar storms, including a $2 million hazard mitigation plan for the Terminal Building.

**Senior Management Oversight (September 2012-December 2012)**
*City of New Orleans, Jefferson Parish, St. John the Baptist Parish, Louisiana | Hurricane Isaac Disaster Debris Program Management*
Mr. Buri provided senior management oversight and operational and client support for the debris monitoring efforts following Hurricane Isaac to numerous communities in the State of Louisiana following Hurricane Isaac. During this effort, our team monitored the collection and disposal of over 670,000 cubic yards of debris.

**Senior Management Oversight/Client Liaison (September 2011–August 2013)**
*Bastrop County, Texas | Wildfire Disaster Program Management*
Mr. Buri provided senior management oversight to Bastrop County’s disaster recovery operations following the most devastating wildfires in Texas history. With 1,700 structures destroyed, Mr. Buri was vital in obtaining expedited PWs, coordinating directly with FEMA to develop disaster-specific documentation protocols, and orchestrating interlocal coordination with county municipalities, electrical co-ops, and regulatory agencies.

**Statewide Trainer (January–September 2011)**
*Texas Department of Transportation | FHWA-ER Training Manual and Workshop*
Mr. Buri is the statewide trainer for the FHWA-ER workshops being held throughout the state of Texas. Mr. Buri developed the guidebook and coordinated with state officials and the FHWA-ER coordinator for the state to deliver over 20 workshops and provide training to over 500 individuals.

**Regional Program Manager (September 2008–September 2010)**
*State of Texas – 78 Total Clients | Hurricane Ike Comprehensive Debris Management Operations and FEMA PA Administration and Management*
Following Hurricane Ike, Mr. Buri served as regional program manager and provided senior management for approximately 78 clients in the state of Texas. Mr. Buri was instrumental in the immediate mobilization of our team and provided a full range of services and client support to each client. Mr. Buri also provided management and guidance to each client to ensure they received FEMA reimbursement.

**Project Manager (September 2008-September 2011)**
*City of Houston, Texas | Hurricane Ike Disaster Debris Program Management*
Mr. Buri served as a project manager to the City of Houston following Hurricane Ike, where Mr. Buri worked closely with the City of Houston Solid Waste and Finance Department to reconcile and provide detailed information of over $110 million in invoices and over $3 million in FHWA funds. In total, our team’s response to the City of Houston included the collection of over 5.5 million cubic yards of debris in 256 zones throughout the City. This included 300 parks and open spaces and the removal of over 214,000 hazardous trees accompanied by 630,000 photographs to document eligibility.

**Project Manager (September 2005–August 2006)**
*Jefferson County, Texas | Hurricane Rita Disaster Management*
Served as project manager to mobilize and deploy a full emergency response team in Jefferson County, Texas to assist with staging operations, project staffing and scheduling, and contracting and negotiations with the County’s two debris removal contractors: Crowder Gulf and DRC. Services included temporary debris storage and recovery sites (TDSRS) selection and management, monitoring services, data management and call center operations.
EXPERIENCE SUMMARY

Mr. Oliver Yao serves as a financial analyst for post disaster programs at Tetra Tech, Inc. Mr. Yao has over twelve years of industry experience in the four phases of emergency management: preparedness, response, recovery, and mitigation. In addition, Mr. Yao has supported response efforts to some of the largest disasters to affect the United States, including Hurricanes Katrina and Ike. Due to his experience, Mr. Yao also has unique knowledge and understanding of federal grant programs and the documentation requirements. This knowledge and experience has aided Mr. Yao in developing and implementing standard operating procedures (SOP) for documentation and data management that assist our clients during closeout and audit.

Mr. Yao also understands all aspects of our automated debris management system (ADMS), RecoveryTrac™. Due to his understanding, Mr. Yao is able to support all aspects of the ADMS handhelds, including field deployment, geospatial reporting, and future enhancements.

This knowledge and experience has aided Mr. Yao in providing local governments across the country with debris management consulting services such as the development of disaster debris management plans (DDMPs), the procurement of debris removal contractors, and the evaluation of debris management sites (DMS). Mr. Yao also has extensive experience assisting Florida communities with debris management services. He was part of the project team that helped develop the first Florida FEMA-approved DDMP for Escambia County.

RELEVANT EXPERIENCE

Senior Management and Data Oversight (August 2017–April 2018)
City of Houston, Texas | Hurricane Harvey Program Management
The southwest region of Texas was substantially impacted by Hurricane Harvey and the torrential rainfall amounts the system brought to the region. The City of Houston activated the monitoring and program management services of Tetra Tech. Mr. Yao provided senior management and data oversight to the project. To date, over 1.2 million cubic yards of debris have been collected in the City as a result of Hurricane Harvey.

Senior Management and Data Oversight (September 2016–July 2017)
Volusia County; St. Johns County; Flagler County; Brevard County, Florida | Hurricane Matthew Program Management
The jurisdictions of Volusia County, St. Johns County, Flagler County, and Brevard County were among the many Florida communities impacted by Hurricane Matthew in September of 2016. Tetra Tech was activated by the aforementioned communities to provide program management and disaster recovery services.

EDUCATION
Rollins College, Crummer School of Business
Master of Business Administration, 2006
Rollins College
Bachelor of Arts, Economics, 2003
Oliver Yao, Senior Management Team

Résumé

debris monitoring services. Mr. Yao served as a senior management and data oversight manager for the Florida projects. He supported the projects by developing health and safety plans and verifying the projects met the project operations, timeline, deliverable, and budget standards for Tetra Tech.

Hays County; Caldwell County; City of Houston, Texas | Severe Storms, Tornadoes, Straight-Line Winds, and Flooding Program Management
The jurisdictions of Hays County, Caldwell County, and the City of Houston were among the many Texas communities impacted by the torrential rainfall in May of 2015. Tetra Tech was activated by the aforementioned communities to provide program management and disaster debris monitoring services. Mr. Yao served as a senior management and data oversight manager for the Texas projects. He supported the projects by developing health and safety plans and verifying the projects met the project operations, timeline, deliverable, and budget standards for Tetra Tech.

Debris Management Consultant (April 2015–September 2015)
City of Winter Springs, Florida | FEMA-Compliant Disaster Debris Management Plan
Mr. Yao assisted the City in developing their first DDMP in 2007. As such, the City requested Mr. Yao’s assistance in updating the City plan to meet current FEMA guidelines as well as compliance under the FEMA Public Assistance Alternative Procedures (PAAP) Pilot Program. Mr. Yao collaborated with the City to update their DDMP. Mr. Yao also facilitated a force account workshop to train the City’s key staff on updated documentation policies and procedures as they relate to force account labor and equipment.

Senior Management and Data Oversight (May 2014–August 2014)
Blount County; Limestone County, Alabama | Severe Storms and Tornadoes Disaster Debris Program Management
Mr. Yao provided senior management and data oversight to two counties in the State of Alabama following severe storms and tornadoes that affected the area in May 2014. Mr. Yao was responsible for overseeing data management and project deliverables. Mr. Yao also provided the project manager operational and safety guidance.

Data Manager (April 2011–Ongoing)
City of New Orleans, Louisiana | Hurricane Katrina Residential Demolition Program
Mr. Yao served as a data manager and invoice reconciliation analyst for the City of New Orleans. In total, our team has supported the City of New Orleans in monitoring and documenting the demolition of over 1,700 damaged structures following Hurricane Katrina.

Regional Operations Manager (August 2012–December 2012)
City of New Orleans, Jefferson Parish, and St. John the Baptist Parish, Louisiana | Hurricane Isaac Debris Program Management
Following Hurricane Isaac, Mr. Yao served as the regional operations manager, where he oversaw data management and field operations for the 3 projects and 10 sub-programs.

Senior Management and Data Oversight (February 2014–June 2014)
South Carolina | Winter Storm Pax Disaster Debris Program Management
The jurisdictions of Colleton County, SC; City of Sumter, SC; Sumter County, SC; Dorchester County, SC; and Barnwell County, SC were significantly impacted by Winter Storm Pax. Mr. Yao provided senior management and data oversight to the project managers assigned to the South Carolina projects. With Mr. Yao’s support the projects met Tetra Tech standards for project operations, timelines, deliverables, and budgets.
Senior Oversight (September 2011–August 2013)
Bastrop County, Texas | Wildfire Disaster Program Management
Following the wildfires in Bastrop County, Mr. Yao was responsible for supporting all data management activities associated with the debris collection effort. The project resulted in 750 private property debris removals, the removal of 49,000 burnt trees, and the removal of 15,000 burnt trees from the right-of-way.

Regional Operations Manager (August 2012–December 2012)
City of New Orleans, Jefferson Parish, and St. John the Baptist Parish, Louisiana | Hurricane Isaac Debris Program Management
Following Hurricane Isaac, Mr. Yao served as the regional operations manager, where he oversaw data management and field operations for the 3 projects and 10 sub-programs.

Data Manager (September 2008–September 2011)
City of Houston, Texas | Hurricane Ike Disaster Debris Program Management
Mr. Yao was responsible for supporting all data management activities associated with the debris collection effort following Hurricane Ike. He helped install a debris management database to track the huge numbers of trucks and debris loads brought to the City of Houston’s temporary debris storage and recovery sites.

Data Manager (September 2008–September 2010)
City of Galveston, Texas | Hurricane Ike Disaster Debris Program Management
On September 13, 2008, Hurricane Ike made a direct hit on the City of Galveston as a top-end Category 2 hurricane with 110 mile-per-hour winds. As a result of Ike’s 12–14 foot storm surge and damaging winds, thousands of homes and businesses were destroyed, producing more than 1.2 million cubic yards of debris. Mr. Yao served as regional data manager and oversaw all supporting documentation management and invoice reconciliation.

Data Manager (September 2008–October 2009)
Harris County, Texas | Hurricane Ike Disaster Debris Program Management
To assist Harris County with response and recovery efforts following Hurricane Ike, Mr. Yao managed contractor invoice reconciliation and data management activities related to PA-eligible work. He also provided Harris County with audit support during the Texas Division of Emergency Management audit.
EXPERIENCE SUMMARY

Mr. Hainje has spent his entire career in emergency management and has been involved in the deployment of almost every disaster over the last 30 years, including hurricanes, tornados, snow storms, and floods. He maintains strong relationships with state and federal partners, serves in a very critical role where he is involved in every stage of the disaster recovery process with every client, and has a deep passion for working with and assisting government entities with Federal Emergency Management Agency (FEMA) guidelines and federal funding. As a member of Tetra Tech’s Incident Management Team (IMT), Mr. Hainje is dedicated to responding to our standby clients as part of the team deployed to the impacted region and focuses on providing senior management oversight to clients prior to or immediately after a disaster. His extensive experience working with senior first responders as well as local, state, and federal elected officials during times of crisis has included providing full briefings to the president of the United States five times at the scene of major disaster operations.

As former regional administrator of FEMA Region VII for eight years, Mr. Hainje was responsible for the preparedness, response, recovery, and mitigation of all disasters in Kansas, Iowa, Nebraska, and Missouri, and led the region through 60 presidentially declared disasters. Over the last 10 years, Mr. Hainje has supervised major emergency operations in Connecticut, Florida, Mississippi, Missouri, Iowa, Nebraska, and Kansas.

While serving as regional administrator, Mr. Hainje was responsible for creating a long-term community recovery (LTCR) process for FEMA Region VII. This special program provides heavily impacted communities the opportunity to go through a FEMA-sponsored planning process after a catastrophic incident. The LTCR process was used in Greensburg, Kansas, to help the community plan for a new "green" future. The Greensburg, Kansas, recovery is a model for disaster recovery and the subject of televised documentaries/specials on major networks.

Mr. Hainje was the director of operations for Hurricane Charley, which struck Florida in 2004. He was responsible for the entire Florida operations division, which at the time was the largest deployment in FEMA’s history. Following the four hurricanes that struck Florida, Mr. Hainje served as director of emergency housing, which was the largest emergency housing operation in more than a decade.

Due to the devastating effects of Hurricane Katrina in 2005, Secretary Chertoff chose principal federal official (PFO) teams for the 2006 hurricane season. Mr. Hainje was asked by Secretary Chertoff to serve as the deputy Principal Federal Official for the Mid-Atlantic States. Mr. Hainje was involved with every aspect of preparation for all of the states from Georgia to...
Delaware. In preparation for the 2006 hurricane season, Mr. Hainje led major hurricane exercises in FEMA Region IV and FEMA Region III.

Mr. Hainje also led the response, recovery, and mitigation for the historic 2008 Midwest flooding event. At the peak, Mr. Hainje was in charge of over 1,000 FEMA employees deployed to this event, briefed the Midwest governors and the president of the United States, as well as many U.S. senators and congresspersons.

Mr. Hainje is an essential member of Tetra Tech’s senior management team and is actively involved in the interaction with every client following every activation, including being present in Joint Field Office (JFO) and engaging with officers to understand the nature of every disaster.

**RELEVANT EXPERIENCE**

**Subject Matter Expert (October 2017 – Present)**
City of Houston, Texas | Hurricane Harvey FEMA PA Consulting Services
Hurricane Harvey struck Texas in late August 2017 causing widespread flooding that damaged homes, businesses, and municipal infrastructure. Mr. Hainje is serving as subject matter expert and is working directly with the City of Houston’s Recovery Leadership Group in developing a strategy for accessing federal and state grant programs for infrastructure and housing programs. Mr. Hainje has performed site damage assessments and formulation of project worksheets for damaged infrastructure. He is also assisting with identifying 404/406 mitigation projects.

**Senior Technical Advisor (October 2013-December 2014)**
Boulder County, Colorado | Full Services Disaster Grant Management Consulting
Mr. Hainje is currently serving as senior technical advisor to Boulder County, Colorado, following the devastating floods that occurred in September 2013.

**Senior Management Oversight (January 2012-October 2013)**
State of Vermont | Hurricane Irene FEMA HMGP Application, Administration, and Implementation
In the wake of Hurricane Irene, the State of Vermont Emergency Management Department engaged our team to assist with its mitigation process. This included consulting services to evaluate the feasibility of submitting an application for the buyout of substantially damaged or destroyed structures and the elevation of less damaged structures under the FEMA Hazard Mitigation Grant Program (HMGP). Within 48 hours, our team deployed a team of experts to the State of Vermont Emergency Operations Center (EOC) to manage all aspects of these processes. Beginning with applicant outreach and program setup, the project team collected, reviewed, and offered technical assistance to applicants on their HMGP applications to ensure that applications are completed per program timelines and stand a good chance of being awarded through the $23 million HMGP grant. As a result of the quality and timeliness of our team’s work on the HMGP applications, the State is obtaining our team’s assistance with a number of FEMA-PA related issues, including grant management of the State’s Waterbury Office Complex, which was severely flooded.

**Principal in Charge (August 2010 – March 2013)**
State of South Dakota | FEMA PA Closeout Services
As principal in charge, Mr. Hainje oversaw the PA closeout contract, which involved closing out over 200 project worksheets related to public utilities.

**Principal in Charge (July 2010 – September 2013)**
Port of Galveston, Texas | Federal Grant Administration
Mr. Hainje is assisting the Port of Galveston on a number of reimbursement-related issues. With Mr. Hainje’s assistance, the Port of Galveston has received more than $40 million in additional federal funding associated with permanent repairs to several of the port’s piers following damage from Hurricane Ike in 2008.
Résumé

Senior Advisor (January – September 2011)
Texas Department of Transportation | Comprehensive FEMA PA and Federal Highway Administration
Mr. Hainje worked with the Texas Department of Transportation (TxDOT) and FEMA to resolve a number of outstanding projects, allowing TxDOT to receive millions in eligible funding.

Senior Technical Advisor (November 2017 – December 2017)
Various Communities along Florida's Gulf Coast | Hurricane Irma Disaster Debris Monitoring Operations
Following Hurricane Irma, Mr. Hainje served as senior technical advisor to various communities along Florida’s Gulf Coast, including the Cities of Tampa and Clearwater, and Collier County. Mr. Hainje routinely met with City/County officials and provided subject matter expertise related to debris removal operations, and reimbursement guidelines.

Senior Management Oversight (February 2013-January 2014)
New Jersey Department of Environmental Protection | Hurricane Sandy Waterway Debris Removal Project
Mr. Hainje was a member of our staff’s IMT for the New Jersey Department of Environmental Protection following Hurricane Sandy, where he met with FEMA officials and state coordinating officers.

Senior Debris Consultant and Advisor (October 2012-December 2012)
State of Connecticut | Hurricanes Irene and Sandy, Winter Storm Alfred Disaster Debris Program Management
Mr. Hainje has assisted the State of Connecticut with debris management as a member of the Interagency Debris Management Task Force (IDMTF) at the state emergency operations center (EOC) for Hurricane Irene, Winter Storm Alfred, and Hurricane Sandy. He worked closely every day with members from Connecticut Division of Emergency Management and Homeland Security, the Connecticut National Guard, Department of Energy and Environmental Protection, and Connecticut Department of Transportation. This involved advising the State of Connecticut on all debris-related issues during response and recovery from the storms. Mr. Hainje was in the EOC working with the IDMTF prior to landfall for Hurricane Irene and Hurricane Sandy.

Senior Advisor (September 2011–August 2013)
Bastrop County, Texas | Wildfire Disaster Program Management
Mr. Hainje served as a senior advisor to Bastrop County following the most devastating wildfires in Texas history. The fires destroyed 1,700 structures. Mr. Hainje assisted Bastrop County with requests to Texas Division of Emergency Management and FEMA.
EXPERIENCE SUMMARY

Mr. Quade serves as a field operations manager and is experienced with truck certification, disposal operations, FEMA reimbursement requirements, scheduling and dispatching of monitors, quality assurance/quality control (QA/QC) of monitors, and general field management. Mr. Quade is also one of our designated staff trainers and has provided training to several hundred monitors during recent debris monitoring activations.

Mr. Quade also has an in-depth understanding of the implementation and operation of our automated debris management system (ADMS) technology, and the execution of health and safety protocols. He is experienced with FEMA eligibility and documentation requirements and oversees field operations to make sure that all documentation captured is FEMA-compliant.

RELEVANT EXPERIENCE

Operations Chief (January 2018-Present)
Ventura, CA – CalRecycle
Mr. Quade serves as Operations Chief overseeing the debris removal operations of nearly 700 structures following the December 2017 Thomas Fire in Ventura County, CA.

Project Manager (November 2017-January 2018)
Mendocino Fire - California Fire Response
Mr. Quade served as Project Manager overseeing the debris removal operations following the Redwood Valley Complex Fire in Mendocino County.

Operations Manager (September 2017-Present)
Helena Fire - California Fire Response
Mr. Quade serves as operations manager responsible for overseeing the monitoring of over 200 parcels of burned area in Northern California. Tetra Tech also conducted OSHA personal sampling and air monitoring and sampling during all operations to ensure protectiveness to public health during cleanup operations. Tetra Tech assessed each parcel for radiation, VOCs, lead, asbestos, and debris estimates.

Operations Manager (October 2016 – 2017)
Beaufort County, South Carolina | Hurricane Matthew
Following Hurricane Matthew’s devastation along the South Carolina Coast, Mr. Quade served as operations manager for Beaufort County. Mr. Quade was responsible for truck certification and oversaw disposal site operations for multiple debris management site (DMS) locations within the County. In total, our team monitored the removal of over 2 million cubic yards of debris.
**Résumé**

Tim Quade, Project Manager

**Operations Manager (January 2017)**
**Dougherty County, Georgia | Severe Storms and Tornadoes**

Mr. Quade served as operations manager on Dougherty County’s debris monitoring project following the severe storms and tornadoes that affected the area on January 2017. Within hours, our team was onsite to begin training staff for immediate deployment. Mr. Quade provided training to monitoring staff and was responsible for overseeing truck certifications, field, and disposal operations, establishing staffing schedules, and executing Tetra Tech’s Health and Safety plans.

**Deputy Project Manager (September 2015 - Ongoing)**
**Lake County, California | Wildfires**

The Valley Fire began on September 2015, resulting in dead and dying trees that have the potential to fall. Initially, Tetra Tech surveyed and documented trees that needed to be removed. Currently, Mr. Quade is working closely with Lake County officials to monitor and document the removal of the hazardous trees. This includes managing a private property debris removal (PPDR) program to monitor the removal of hazardous trees on private property that threaten County roads.
EXPERIENCE SUMMARY

Mr. Charles Cabrera is a 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER)-trained operations manager for Tetra Tech who serves on various projects throughout the country. Mr. Cabrera is responsible for the implementation of Tetra Tech’s work plans, dispatching field personnel, staffing, safety, field logistics, and training. Mr. Cabrera will verify eligibility and compliance; oversee collection and disposal operations; and coordinate directly with debris contractors, data managers, and project managers to facilitate the success of fast-moving debris operations projects.

Mr. Cabrera has developed an extensive understanding of federal, state, and local regulations, protocols, processes, and guidance with respect to homeland security, disaster preparedness, response, recovery, and mitigation.

FEATURED RELEVANT EXPERIENCE

Project Manager (August 2018–Present)
Port of Corpus Christi Authority | Hurricane Harvey
In June of 2018, the Port of Corpus Christi Authority (Port Authority) issued a Request for Proposal (RFP) for debris management and monitoring services. Tetra Tech was awarded the contract and provided program management and monitoring services beginning in August. Mr. Cabrera serves as the Project Manager and is providing oversight and documentation of waterways debris removal for the Port Authority.

Operations Manager (May 2018–June 2018)
City of Miami, FL | Hurricane Irma
As part of the recovery effort following Hurricane Irma, the City of Miami completed a hazardous stump removal program. Mr. Cabrera served as the operations manager and was responsible for assigning monitors to crews, health and safety, supervisor training, and overall field oversight.

Lead Field Manager (November 2017 – February 2018)
Sonoma County, CA | NORCAL Fires
In October of 2017, more than 250 wildfires erupted and burned throughout Northern California (NORCAL). Due to the scale and severity of the fires, the United States Army Core of Engineers (USACE) was tasked with the assignment of the debris removal mission. USACE selected three prime contractors to work in the three fire damaged regions and Tetra Tech provided the documentations services for all three contractors. Mr. Cabrera served as a Lead Field Manager and was responsible for the management and implementation of RecoveryTrac™ Automated Debris Management System (ADMS) to document debris removal efforts.

EDUCATION
University of South Florida, Associate Degree, In Progress
Résumé

Charles Cabrera, Operations Manager

Deputy Project Manager (August 2017- October 2017)
City of Houston, Texas | Hurricane Harvey
While Hurricane Harvey made landfill near Rockport, TX, the slow moving tropical system brought bands of heavy rain. An average of 40 inches of total rainfall, the equivalent of 1.2 trillion gallons of water, dropped onto Harris County and the City of Houston. As a result, the City experienced widespread flooding and activated program management and monitoring services from Tetra Tech. Mr. Cabrera was mobilized as a Deputy Project Manager to initiate operations, manage staffing levels, and implement quality assurance and control measures.

Division Supervisor (August 2017)
Detwiler Fire Response
Mr. Cabrera served as a division supervisor responsible for coordinating staff, directing health and safety operations, and overseeing and documenting debris removal contractor's field activities. Tetra Tech is responsible for assessing (hazard assessment) over 200 parcels of burned area in Northern California. Tetra Tech also conducted OSHA personal sampling and air monitoring and sampling during all operations to ensure protectiveness to public health during cleanup operations.

Project Manager (February 2017–June 2017)
Florida Department of Environmental Protection | Hurricane Matthew
In February of 2017, the Florida Department of Environmental Protection (FDEP) awarded Tetra Tech a contract to monitor the removal of waterways debris from Brevard, Nassau, St. Johns, and Volusia County waterways. Mr. Cabrera was deployed as the project manager for the FDEP Brevard County waterways program. Mr. Cabrera oversaw the monitoring and documentation of 31,711 CY of waterways debris removed from Brevard County.

Deputy Project Manager (October 2016–January 2017)
Brevard County, Florida | Hurricane Matthew
Hurricane Matthew pummeled Brevard County in 2016, leaving over 800,000 cubic yards of debris in its wake. As deputy project manager, Mr. Cabrera was responsible for implementing all task orders from the City, and provided project oversight, project scheduling, training of personnel, and dispatching of staff.

Division Supervisor (July 2016–October 2016)
CalRecycle | Erskine Fire
As division supervisor for the Erskine wildfire recovery project, Mr. Cabrera was responsible for dispatching field personnel, staffing, safety, field logistics, task force dispatching, training, and other daily activities. Mr. Cabrera was responsible for verifying eligibility, compliance, and collection and disposal operations oversight and coordinated directly with the project manager daily with progress reports and on specific issues.

Project Manager (January 2016–February 2016)
Collier County, Florida | Straight-Line Wind Event | Disaster Debris Program Management
Following a quick but powerful straight-line wind event, Collier County was faced with 60,000 cubic yards (CY) of vegetative debris that lined a swath of land throughout the southernmost section of the county. This isolated event was not declared federally but was still a large enough amount of debris to warrant an activation of debris collection resources. Mr. Cabrera coordinated with Collier County code enforcement and solid waste employees to document the areas in need of collection while managing the removal and disposal.

Operations Manager (November 2015–February 2016)
Lake County, California | Catastrophic Fires | Disaster Debris Program Management
Following catastrophic fires that impacted Lake County in September 2015, many dead or dying trees that could fall along the County right-of-way (ROW) were in need of mitigation. Tetra Tech was hired to complete a hazardous tree mitigation program which included both ROW trees and private property. Mr. Cabrera was tasked with management of general operations that included coordination and training of 55 locally trained monitors. Mr. Cabrera also coordinated with contractor resources and oversaw debris disposal operations.
Disaster Debris Specialist (October 2015)
**Valley Fire, California | Catastrophic Fires | Debris Sketches and Assessment of Commercial Properties**
The Valley Fire affected 76,000 acres of land and destroyed a total of 1,958 structures, including 1,280 homes, 27 multi-family structures, 66 commercial properties, and 585 other minor structures such as outbuildings and sheds. Tetra Tech was tasked with performing environmental surveys of commercial properties, which included a site debris sketch and debris assessment of quantities and materials. Only 40-hour HAZWOPER personnel were dispatched to this event. Mr. Cabrera was selected to perform these assessments on over 100 commercial structures within the fire-damaged area.

Operations Manager (May 2015–August 2015)
**City of Houston, Texas | Severe Storms and Flooding Disaster Debris Program Management**
Mr. Cabrera was deployed as an operations manager for the City of Houston, Texas, following severe storms and flooding that resulted in concentrated volumes of disaster debris in the City. Mr. Cabrera’s responsibilities included dispatch of 120 monitors to debris trucks, compliance with the health and safety program, reimbursement documentation, and oversight of field supervisors that covered over 612 road miles throughout the City. Mr. Cabrera also worked closely with data managers and automated debris management system (ADMS) specialists to document and track operations as well as deliver expeditious and accurate reporting to key stakeholders.

Senior Field Supervisor/Operations Manager (February 2014–April 2014)
**City of Augusta, Richmond County, Georgia | Winter Storm Pax Disaster Debris Program Management**
Following Winter Storm Pax, Mr. Cabrera was deployed to assist in the management of nearly 90 debris removal trucks and the collection of over 900,000 CYs of vegetative debris within a four-week period. Mr. Cabrera was promoted from senior field supervisor to operations manager due to his implementation and understanding of Tetra Tech processes and health and safety requirements. As an operations manager, Mr. Cabrera assisted with the dispatch of field monitors, compliance with the health and safety, and compliance with program and documentation requirements.
Christopher Burns
Environmental Specialist

EXPERIENCE SUMMARY
Mr. Burns has over 15 years of experience in the environmental field. While working for the Pennsylvania Department of Environmental Protection (PADEP), Mr. Burns served on the Palmerton Zinc Superfund Site Trustee Group (Natural Resource Damage Assessment Case) and the Aquatic Subcommittee Group. Mr. Burns was responsible for acting as the designated trustee from the PADEP. While serving in this role, Mr. Burns was responsible for assisting with numerous assessments and document reviews. Mr. Burns assisted with the creation of the Pennsylvania Index of Biological Integrity to be used throughout the state of PA. While with Tetra Tech, Mr. Burns was responsible for the Enbridge Line 6b release NRDA work. Mr. Burns has also overseen and participated in numerous tank removals and cleanups.

Mr. Burns has responded to over 400 oil spills, conducting responses to oil spills, complaints, fish kills, and a multitude of site assessments. His experience includes responses to small releases from above ground home heating oil tanks to larger releases from underground storage tanks and pipelines that have affected surface water, groundwater, and soil. Mr. Burns’ responsibilities during these activities have included management of personnel and equipment as well as support during a wide variety of emergency responses such as the Kalamazoo Enbridge Line 6B Pipeline Release, Allied Terminal Ammonium Nitrate Release, Buckeye Pipeline Release, Ivy Industrial Park Case, Church Road TCE Case, and Ashland Uni-Mart Vapor release.

Mr. Burns is currently the Emergency Response Coordinator and Deputy Program Manager for the US EPA Region 5 START Contract. He is trained in the operation and maintenance of field equipment for use in emergency response operations. Specific equipment used includes radiation detection meters, multi-media sampling equipment, and air monitoring equipment such as FIDs, PID, Drager colorimetric tubes and pumps, HAPSITE Portable GCMS and Headspace Sampler, and Suma Canisters. Mr. Burns is also experienced in the collection of asbestos samples and is verse in the 2009 asbestos framework for collection asbestos samples, he currently manages 5 asbestos sites for Tetra Tech.

RELEVANT EXPERIENCE
Northern California (NONRCAL) Wildfire Response (November 2017-Present)
Environmental lead responsible for environmental portion of work associated with the cleanup of over 3000 homes. Responsible for hazard assessments on each parcel, background soil sampling and confirmation soil sampling, air sampling and monitoring, and OSHA personal air sampling. Mr. Burns is also responsible for overall coordination, staffing, and logistics for this four county response, overseeing over 75 staff in the field collecting data.
Detwiler Fire (August 2017-Present) and Helena Fire (September 2017-Present) California Fire Response

Environmental Lead responsible for designing approach, coordinating staff, directing health and safety operations, and responsible for overall completion of environmental portion of the project. During these responses Tetra Tech was responsible for assessing (hazard assessment) over 200 parcels of burned area in Northern California. Tetra Tech also conducted OSHA personal sampling and air monitoring and sampling during all operations to ensure protectiveness to public health during cleanup operations. Tetra Tech assessed each parcel for radiation, VOCs, lead, asbestos, and debris estimates.

Clayton Valley Fire California Fire Response (October 2016-January 2017)

Environmental Lead responsible for designing approach, coordinating staff, directing health and safety operations, and responsible for overall completion of environmental portion of the project. During this response Tetra Tech was responsible for assessing (hazard assessment) over 200 parcels of burned area in Northern California. Tetra Tech also conducted OSHA personal sampling and air monitoring and sampling during all operations to ensure protectiveness to public health during cleanup operations. Tetra Tech assessed each parcel for radiation, VOCs, lead, asbestos, and debris estimates. All documentation was collected with collector and I-form technology and uploaded to a central data base to generate deliverable as work was completed daily.

Lake Isabella California Fire Response (August 2016-November 2016)

Environmental Lead responsible for designing approach, coordinating staff, directing health and safety operations, and responsible for overall completion of environmental portion of the project. During this response Tetra Tech was responsible for assessing (hazard assessment) over 300 parcels of burned area in Southern California. Tetra Tech assessed each parcel for radiation, VOCs, lead, asbestos, and debris estimates. All documentation was collected with collector and I-form technology and uploaded to a central data base to generate deliverable as work was completed daily.

Harbin California Fire Response (October 2015)

Environmental Lead responsible for designing approach, coordinating staff, directing health and safety operations, and responsible for overall completion of environmental portion of the project. During this response Tetra Tech was responsible for assessing over 250 parcels of burned area in Northern California. Tetra Tech assessed each parcel for radiation, VOCs, lead, asbestos, and debris estimates. All documentation was collected with collector and I-form technology and uploaded to a central data base to generate deliverable as work was completed daily.

NPL-4 Radiation Site (Ottawa IL) (November 2014-present)

Field Team Lead responsible for overall work completed on site. Task included subcontractor oversight, project staff supervision, and overall completeness of a 35,000 tons of contaminated soil. Soil was contaminated with Radium-226 from fill operations. Task included segregation and excavation of contaminated material above the remedial action goal that was site specific. Mr. Burns was responsible for initial assessment of the site where trenched were employed to delineate the extent of contamination. Remediation of the site consisted of removal of impacted soil, segregation, water treatment, air sampling and monitoring, soil sampling and monitoring, and restoration operations.

Green Ribbon Trails (2010)

Project Manager, responsible for the work plan, multiple sampling and analysis plans, trip reports, and case study reports for the site. The site is a former asbestos facility. Sampling included activity-based sampling, bulk, soil, and ambient air sampling.

Flood Response (June 2006)

Assisted in the response to a major flood that occurred over the northeast region of Pennsylvania. Assisted in basement release investigations, oversaw the removal of contaminated flood water from basements and underground tanks, home heating oil tank removals, and inspected over 40 underground and aboveground storage tank facilities for possible release / compliance issues due to flood conditions.
EXPERIENCE SUMMARY

Mr. DoCanto is a Civil Engineer in Tetra Tech’s Land Development Group. He supports a range of site/civil engineering, land development and improvement projects for public agencies and private clients. Mr. DoCanto is proficient in the use of AutoCAD Civil 3D, Geographic Information System (GIS), Auto Turn, Hydrocad, Roadview Workstation, and InfraWorks software, and familiar with the use of field instruments for land surveying.

RELEVANT EXPERIENCE

Sonoma, Mendocino and Napa Wildfires USACE (Federal) and CalOES (State), 2018 – Served as lead data manager for the Sonoma, Mendocino, and Napa Counties wildfire project. Mr. DoCanto coordinated with director of operations to provide reporting and quality assurance/quality control of ADMS documentation in the field. He validated documentation and metrics being reported as accurate and on-schedule for the debris removal of over 500 fire damaged homes.

Hilton Head Island, South Carolina, Hurricane Matthew, 2016 – Mr. DoCanto served as operations manager where he was responsible for implementing Tetra Tech’s work plans, developing Standard Operating Procedures to ensure correct estimates of debris being removed and dispatching of field personnel. He also verified eligibility, compliance, and coordinated directly with our project manager daily with progress reports and on specific issues.

Bright Lite Energy, Solar Energy Facilities, Various Locations, MA, 2017 to Present – Engineer assisting with the site design and permitting services of four 5-megawatt ground-mounted solar array projects at multiple locations in Massachusetts. Services included detailed due diligence reviews, site design, preparation of permitting plans and documentation in support of Special Permit, Site Plan Review and Notice of Intent applications.

Vanguard Renewables, Anaerobic Digesters, Various Locations, MA, CT, VT 2016 to Present – Engineer for site design and permitting services at several locations in Massachusetts. Work includes conducting detailed due diligence reviews, preparing conceptual site plans and preparation of permitting strategy for obtaining environmental and zoning approvals for each potential site.

MassDOT Highway Division, Statewide Stormwater Discharge Compliance, 2016 to Present – Engineer assisting in MassDOT’s compliance with the statewide National Pollutant Discharge Elimination System (NPDES) stormwater permit for discharges of highway runoff to impaired waters. Responsible for providing MassDOT with recommendations for Best Management Practices (BMPs) for impaired water bodies. Upon acceptance of the recommendations, provides design and permitting services in support of both the Retrofit and Programmed Project initiatives, including
hydraulic and hydrologic analyses, preparation of construction documents and applicable permitting applications for implementation of recommended BMPs. Also included in the scope of services is ongoing technical support to compile documentation of BMPs performance for reporting to the EPA. To date, Tetra Tech has evaluated over 200,000 acres of impaired waters watersheds with MassDOT roadway discharges and developed over 100 stormwater BMP designs for more than 400 acres of MassDOT roadways.

**Rushy Marsh Farm Expansion, Engineering and Permitting Services, Cotuit, MA, 2016 to Present** – Engineer assisting with site design and environmental permitting services for the proposed expansion of an operating farm within a coastal community on Cape Cod. Work includes site design, project design coordination, state and local permitting, and construction services. Specific tasks included permitting, design and construction of a replacement outfall to Nantucket Sound under emergency authorization from MassDEP and the US Army Corp of Engineers.

**United States Army Corps of Engineers (USACE) Middle East District (MED), Royal Saudi Land Forces Aviation Command (RSLFAC) Phase 2A Base Expansion, Kingdom of Saudi Arabia, 2016 to 2017** – Engineer assisting with the development of a design/build package for the Phase 2A infrastructure improvements at the 2nd Aviation Group base located in Khamis Mushait. Phase 2A infrastructure improvements will establish, renovate and augment the base to support the fielding and operations of various rotary wing aircrafts. Site and supporting utility infrastructure, including upgrades to and expansion of the currently non-operational helicopter and support facilities, are designed to accommodate the full future build out of the base.

**Mountain Valley Pipeline, Stormwater Calculations and Permitting 2017 to 2018** – Mountain Valley Pipeline (MVP) project is a natural gas pipeline system that spans approximately 303 miles from northwestern West Virginia to southern Virginia – and as an interstate pipeline will be regulated by the Federal Energy Regulatory Commission (FERC). Engineer assisting in the drainage design and permitting process according to The Virginia Department of Environmental Quality (VA DEQ). Design included stormwater BMPs to reduce total phosphorous loading in order to meet stormwater quality requirements and/or reduce runoff peak flow rate and volume to meet water quantity requirements.

**HNTB, MassDOT Highway Division, 2016 to 2017** – Engineer assisting with the conceptual design of all drainage and stormwater according to MassDOT standards and DEP stormwater standards for 495/I90 interchange. Evaluated pre-development and post-development hydrology and hydraulic design of the ditches, culverts, pipes and other stormwater control devices.

*Prior to joining Tetra Tech, Mr. DoCanto worked as a Transportation Engineer for AECOM, and completed internships at Perini Management Services, and Campanelli Construction.*

**AECOM, Chelmsford, MA, January 2016-September 2016** – Transportation Engineer. Assisted with Massachusetts Department of Transportation (MassDOT) projects: prepared design for toll booth demolition, developed construction cost estimate for Plaza 13. Was responsible for Overall Pavement Condition (OPC) analysis for Delaware DOT, and used GIS to analyze OPC for the Baltimore Washington International Airport.

**Perini Management Services Inc., Framingham, MA, December 2014 to April 2015** – As Office Engineer performed cost engineering analysis for a breakwater project for the State of Maryland. Worked with subcontractors to develop cost estimate for a Marsh Rehabilitation project, Long Island, NY. Construction phase services including coordination and review of over 10 RFIs and submittals per day, and maintenance of project logs.

**Campanelli Construction, Braintree, MA, May to August 2014** – As an Assistant Project Manager, proposed and implemented a database management system with past and current projects. Projects included tracking daily construction progress reports for assigned projects for several clients including Preferred Freezer Services, Florida and Houston, High Point Treatment Center, Taunton, MA and O’Reilly Automotive, Inc., Devens, MA. Also assisted site construction and office activities with Superintendents and Project Managers.
EXPERIENCE SUMMARY
Ms. Paris Atkinson is a senior data manager and billing/invoice analyst, where her responsibilities include data management, management of monitoring documentation for the Federal Emergency Management Agency (FEMA), invoice reconciliation, and the use of our automated debris management system (ADMS). She has extensive experience on all aspects of program data management up to and including project closeout and post-closeout audit support. Ms. Atkinson possesses knowledge and understanding of federal grant programs, including the Federal Highway Administration (FHWA) Emergency Relief (ER) Program and FEMA Public Assistance (PA) Program.

FEATURED RELEVANT EXPERIENCE
Regional Data Manager (September 2017-August 2018)
State of Florida | Hurricane Irma | Disaster Debris Program Management
Hurricane Irma impacted almost the entire state of Florida. As such, Tetra Tech managed numerous program management and monitoring projects throughout the state. Ms. Atkinson served as a regional data manager and oversaw daily data and invoice reconciliation operations of projects throughout Florida including Hillsborough County, Polk County, and Orange County. Ms. Atkinson provided senior level leadership and guidance to field data managers including FEMA compliance management, QA/QC of collection data, and the management and documentation of specialized programs such as hazardous tree and hanger removal. Ms. Atkinson also managed a team of invoice reconcilers who reviewed and submitted reconciled hauler invoices to clients.

Senior Data Manager (October 2015–August 2016)
Lake County, California | Valley Fire Disaster Debris Program Management
Lake County, California was one of the counties severely impacted by the Valley Fire, which burned over 76,000 acres across Lake, Napa, and Sonoma Counties prior to being fully contained. Tetra Tech was retained by the County to provide program management and debris monitoring services. In addition to a right-of-way debris and hazardous tree removal program, the County also initiated a selective private property debris removal (PPDR) program. One of the unique aspects of the County is the enormous trees along the right-of-ways. Thousands of fire hazard trees were identified throughout the County that, though located on private property, could post a threat to County maintained roads. As a result, the County initiated a selected PPDR program to address standing dead trees on private property that could impact County roads. Ms. Atkinson served as a senior data manager and was
Résumé

Paris Atkinson, Billing/Invoicing Analyst

responsible for FEMA compliance management, including QA/QC of data and managing the documentation.

**Senior Data Manager (May 2015–August 2016)**
Hays County; Caldwell County; City of Houston, Texas | Severe Storms, Tornadoes, Straight-Line Winds, and Flooding Program Management

The jurisdictions of Hays County, Caldwell County, and the City of Houston were among the many Texas communities impacted by the torrential rainfall in May of 2015. Tetra Tech was activated by the aforementioned communities to provide program management and disaster debris monitoring services. Ms. Atkinson served as the senior data manager for the Texas projects. She supported the projects by managing the data team in the field; providing FEMA compliance management, including QA/QC of right-of-way load collection; and managing the documentation for all hazardous tree and hanger removal. Ms. Atkinson also provided ADMS and database support for all staff members. Hays County has an ongoing PPDR program for which Ms. Atkinson continues to provide data management support.

**Billing/Invoice Analyst (May 2015 – October 2015)**
City of Houston, Texas | Severe Storms and Flooding Disaster Debris Program Management

Ms. Atkinson served as billing/invoice analyst for the City of Houston, Texas following severe storms and flooding that resulted in 300,000 cubic yards of disaster debris in the City. Ms. Atkinson worked alongside the data manager of the FEMA funded destruction relief program for the City, and also assisted with the daily input of collection logs and data documentation.

**Senior Data Manager (January 2016–February 2016)**
Collier County, Florida | Severe Storm and Straight-Line Wind Debris Program Management

Collier County, FL was impacted in January by a severe storm with measured winds as high as 83 mph. The storm caused significant arboreal damage to the County, so much so that the County chose to activate their disaster debris removal contractors and Tetra Tech. Ms. Atkinson provided program management and debris monitoring services to the County, which included ADMS technology implementation, quality assurance (QA)/quality control (QC) of data, multiple reporting functions, management of debris pile reported data and citizen concerns, contractor reconciliation and invoicing, and final project closeout.

**Project Manager (December 2015–July 2018)**
State of Connecticut | Financial Recovery Services, FEMA Public Assistance

The State of Connecticut retained Tetra Tech to perform a secondary review of FEMA PA and FHWA-ER related funding that was obligated as a result of Winter Storm Alfred (FEMA-DR-4046). Due to a recent decision on the FEMA eligibility of reduction, final hauling, and final disposal costs, each town/city that applied for and received FEMA PA funding as well as FHWA ER funding must be reviewed to determine if appropriate funding has been obligated. Ms. Atkinson is responsible for reviewing the FEMA PA and FHWA grant documentation; ensuring reduction, final hauling, and final disposal costs have been reimbursed; and identifying any additional charges not captured by FEMA.

**Debris Subject Matter Expert (March 2014–September 2014)**
Montgomery County, Pennsylvania | Multi-Jurisdictional DDMP

Ms. Atkinson served as a debris subject matter expert and supported Montgomery County in establishing and implementing a multi-jurisdictional debris management planning program. Ms. Atkinson and the project team developed a debris management strategy based on the assessment of the County’s existing resources, landfill and disposal capacity, and debris management site options. Ms. Atkinson also assisted in the development of multiple debris forecast models to estimate the resulting debris volumes following a disaster as well as the County’s capacity to address debris using internal equipment and resources.
Data Manager and Debris Management Consultant (March 2014–Ongoing)
Boulder County, Colorado | Severe Flooding Disaster Debris Program Management
Ms. Atkinson is currently serving as data manager for Boulder County, Colorado following the severe flooding that affected the state in September 2013. Ms. Atkinson is responsible for managing invoice reconciliation with the debris contractor; creating custom reports for Boulder County; managing the data team in the field; providing FEMA compliance management, including QA/QC of right-of-way load collection; and managing the documentation for all hazardous tree and hanger removal. Ms. Atkinson also provides ADMS and database support for all staff members. Additionally, Ms. Atkinson assists with management of the FHWA-ER program for the County.

Data Manager (May 2014–August 2014)
Blount County; Limestone County, Alabama | Severe Storms and Tornadoes Disaster Debris Program Management
Ms. Atkinson served as data manager for two counties in Alabama following severe storms and tornadoes that affected the area in May. Ms. Atkinson was responsible for managing invoice reconciliation with the debris contractor; managing the data team in the field; providing FEMA compliance management, including QA/QC of right-of-way load collection; and managing the documentation for all hazardous tree and hanger removal.

Data Manager (February 2014–July 2014)
Barnwell County; Colleton County; Dorchester County; Sumter County, South Carolina; City of Sumter, South Carolina; City of Augusta, Georgia | Winter Storm Pax Disaster Debris Program Management
Ms. Atkinson served as data manager for six municipalities in the states of South Carolina and Georgia following Winter Storm Pax. Ms. Atkinson was responsible for managing invoice reconciliation with the debris contractor; managing the data team in the field; providing FEMA compliance management, including QA/QC of right-of-way load collection; and managing the documentation for all hazardous tree and hanger removal. Ms. Atkinson also provided ADMS and database support for all staff members.

Data Manager (December 2012)
Jersey City Housing Authority, New Jersey | Hurricane Sandy Disaster Debris Management Program
Ms. Atkinson managed invoice reconciliation, data export creation, data management and tabulation, monitoring document compliance, database support for staff, and reimbursement support.

Project Manager (July 2012–September 2012)
Lake County, Florida | FEMA-Compliant Disaster Debris Management Plan
In August 2012, she assisted Lake County, Florida, with the development of a FEMA-compliant disaster debris management plan. In addition, she assisted the County in developing a scope of services for their request for proposal for debris contracting, where a large focus was on helping complete the debris hauling request for proposal and guiding the County through the bid process.

Operations Manager and Data Manager (February 2006–August 2006)
Collier County, Florida | Hurricane Wilma Disaster Waterways Debris Removal Program Management
Ms. Atkinson served as operations manager and data manager for Collier County, Florida, following Hurricane Wilma, where she was responsible for the supervision, support, and evaluation of field staff; documentation compliance; and ensuring waterway debris removal was compliant with Natural Resources Conservation Service contract specifications. Ms. Atkinson also developed standard operating procedures specific to the waterway debris removal project.
EXPERIENCE SUMMARY

As a subject matter consultant for Tetra Tech, Inc., Mr. Khan’s duties include serving as a technical resource to clients during implementation of the Federal Emergency Management Agency (FEMA) Public Assistance (PA) Grant Program and other federal grant programs following presidential disaster declarations and emergencies. Mr. Khan’s responsibilities as a PA project manager include overseeing the preparation, development, and review of FEMA PA project worksheets for Category A–H disaster-related activities, state appeals, and close out processes. He also serves as the technical point of contact for clients while ensuring timely, high quality, and cost-effective delivery of services.

Additionally, Mr. Khan has served as a project officer/manager for eight years in our Financial Recovery Services Practice. He works in Category A and Category B Debris Management and Emergency Services environment during the recovery phase of disaster events.

RELEVANT EXPERIENCE

**Subject Matter Expert (August 2017–Present)**
City of Houston, Texas | PA Grant Administration

Mr. Khan is the lead consultant for Hurricane Harvey recovery. He manages teams that will preparing over three thousand project worksheets for FEMA categories (A-G). His expertise in procurement, insurance, storm induced erosion, and FEMA eligibility will assist the City in managing over $16-$22 billion in damage recovery.

**Subject Matter Expert (December 2009–Present)**
Port of Galveston, Texas | PA Grant Administration

Mr. Khan is assisting with the Port of Galveston project and the identification of over $43-$55 million in additional damages not captured by FEMA. Mr. Khan is managing the preparation of the project worksheets to FEMA and supervising the processes of obligation and closeout, including Office of Inspector General (OIG) audits of over 120 project worksheets. Mr. Khan facilitated the only appeal win with FEMA for Storm Induced Erosion damages resulting from Hurricane Ike, thus reconfiguring Public Assistance surge based guidelines.

**Project Officer (September–October 2011)**
Bastrop County, Texas | Fire Management Assistance

Mr. Khan assisted Bastrop County with financial recovery due to the largest fires in Texas history. He worked closely with Bastrop County’s Finance Department on declaration through the PA Grant Management Program–Fire Management (Category H).
Project Officer (August–December 2011)
City of Houston, Texas | PA Grant Administration
Mr. Khan assisted the City of Houston Solid Waste Department with the financial recovery due to Hurricane Ike. He worked with FEMA to ensure all Force Account Labor and Force Account Equipment costs were eligible and reimbursed through the Pilot Program within PA Grant Program (Category A–G).

Project Officer (June–July 2009)
City of Austell, Georgia | PA Grant Administration
Mr. Khan assisted the mayor and staff of the City of Austell with financial recovery from flooding. He identified damages and prepared Category A–G project worksheets.

Project Officer (November 2008–March 2009)
Fort Bend County, Texas | PA Grant Administration
Mr. Khan assisted the Fort Bend County Auditor Office with financial recovery due to Hurricane Ike. He identified damages and prepared Category A–G project worksheets. Mr. Khan also worked with FEMA to ensure all Force Account Labor and Force Account Equipment costs were eligible and reimbursed through the Pilot Program within PA Grant Program.

Project Officer (June 2008–March 2009)
Cameron County, Texas | PA Grant Administration
Mr. Khan assisted Cameron County with financial recovery due to Hurricane Dolly. He identified damages and prepared Category A–G project worksheets.

Project Officer (September–October 2011)
Bastrop County, Texas | Fire Management Assistance
Mr. Khan assisted Bastrop County with financial recovery due to the largest fires in Texas history. He worked closely with Bastrop County’s Finance Department on declaration through the PA Grant Management Program–Fire Management (Category H).

Project Officer (August–December 2011)
City of Houston, Texas | PA Grant Administration
Mr. Khan assisted the City of Houston Solid Waste Department with the financial recovery due to Hurricane Ike. He worked with FEMA to ensure all Force Account Labor and Force Account Equipment costs were eligible and reimbursed through the Pilot Program within PA Grant Program (Category A–G).
EXPERIENCE SUMMARY

Mr. Olson is a member of Tetra Tech’s Financial Recovery Services (FRS) operation. In this role, Mr. Olson assists Tetra Tech clients in navigating federal grant programs for financial recovery from disasters. His knowledge of the Federal Emergency Management Agency (FEMA) Public Assistance (PA) Program assists the applicant with maximizing eligible reimbursements. He has worked extensively in Project Worksheet (PW) formulation in areas such as debris removal, emergency protective measures, force account labor and equipment, and permanent work. During the PA process, he specializes in document analysis, eligibility requirements, FEMA Grants Portal Database(s), audit preparation, and closeout assistance, which allows the client to maximize reimbursement. In addition to PA consulting, he assists clients with fraud prevention policy formulation for federal grant programs such as the Community Development Block Grant (CDBG) program.

RELEVANT EXPERIENCE

Project Manager (August 2017–Present)
City of Houston, Texas | PA Consulting
Hurricane Harvey produced high winds and unprecedented rainfall, with totals surpassing 51 inches, which resulted in a catastrophic flood event for the City of Houston, Texas. As a result of these conditions, many City buildings and facilities throughout the area were inundated with floodwaters and debris causing severe damage.

Mr. Olson is currently assisting the City with over 400 projects for FEMA Public Assistance (PA) and managing the FEMA Grant Portal delivery model. Mr. Olson is assisting with the preparation of FEMA Project Worksheets (PWs) and supervising the processes of obligation through closeout.

Consultant (January 2010–October 2017)
Port of Galveston, Texas | PA Consulting
Hurricane Ike made landfall in Galveston, Texas, on September 13, 2008. The Port of Galveston (Port) maritime infrastructure (piers, docks, apron, bulkheads, underground utilities, and roadways) was heavily impacted by up to 20 foot tidal surge forces carried over and past Galveston Island to the northern reaches of Galveston Bay and channels.

Mr. Olson has been an analyst working on the Port of Galveston project for the past seven years and has supported the identification of additional damage not captured by FEMA. Mr. Olson is assisting with the preparation of the PWs to FEMA and supervising the processes of obligation and closeout of over 150 PWs.
Résumé

Donn Olson, Financial Recovery Specialist

City of Galveston, Texas | CDBG Grant Administration
Tetra Tech was hired by the City of Galveston, through a standing contract with the State of Texas Department of Rural Affairs, to help administer federal CDBG disaster recovery funds allocated for damage to City infrastructure sustained during Hurricane Ike. In an effort to repair damage from the storm, the City of Galveston completed 16 projects funded by CDBG program funds.

Mr. Olson helped to provide complete grant application, administration, program management, and project delivery services for all CDBG program funded projects. Mr. Olson was also part of the team who provided assistance and oversight services for application development, environmental review, procurement, status reporting, compliance monitoring, project closeout, and audit.

Document Specialist (September 2008–December 2008)
Fort Bend County, Texas | PA Consulting Services
On September 12, 2008, Hurricane Ike impacted Fort Bend County with hurricane force winds and heavy rain, causing damage and debris across the County. With estimated damage of more than $15.3 million, the County requested that our team assist with applying for, administering, and managing FEMA PA funding for categories A–G.

Mr. Olson assisted the Fort Bend County Auditor Office with financial recovery due to Hurricane Ike. He identified and gathered the documentation for Category A–G PWs, including reviewing all Force Account Labor and Force Account Equipment costs to ensure they were accounted for.

Document Specialist (September 2008–December 2008)
City of Bellaire, Texas | PA Consulting Services
On September 13, 2008, Hurricane Ike made landfall resulting in debris strewn throughout the City, public buildings damaged, public property damaged. With estimated damage of more than $300,000.00, the city requested that Tetra Tech assist with applying for, administering, and managing FEMA PA funding for categories B.

Mr. Olson acted as the documentation specialist to gather and review all pre- and post-storm Cat B force account equipment and labor. This resulted in the swift development of 2 FEMA PA PWs for categories Cat B totalling approximately $300,000.

Document Specialist (September 2008–August 2011)
City of Houston Solid Waste | PA Consulting Services
On September 12, 2008, Hurricane Ike made landfall in Texas, leaving behind massive amounts of debris from high winds, inland flooding, and storm surge. The City of Houston was faced with the overwhelming task of managing their labor and equipment hours to seek reimbursement through the FEMA PA program.

Mr. Olson was an instrumental member of the team that documented, organized, and processed this intricate set of data into the required FEMA format. This information was then evaluated by a team of industry experts to request full reimbursement of damage related costs.
EXPERIENCE SUMMARY

Ms. Kalindi Fitch assists clients in the administration of federal grant programs for disaster recovery and mitigation. Her extensive understanding of the grant administration process, eligibility requirements, regulations, and policies across many federal programs allows clients to maximize reimbursement. She provides oversight throughout the grant administration period and has lead damage assessment, application development, environmental review, project and process monitoring, and closeout and audit activities.

Ms. Fitch has assisted clients in applying for funding from multiple federal grant programs such as the Federal Emergency Management Agency (FEMA) Public Assistance (PA) Grant Program, Hazard Mitigation Grant Program (HMGP), and the Community Development Block Grant Disaster Recovery (CDBG-DR) Programs.

RELEVANT EXPERIENCE

Program Manager, Mobilization (April 2018-Present)
San Juan, Puerto Rico | FEMA - Public Assistance Consulting
Following 2017 Hurricane Maria, the island of Puerto Rico received a presidential disaster declaration authorizing recovery funds and resources. Tetra Tech was procured to provide post-disaster Public Assistance and long term recovery services including damage assessments, site inspections, grant management and monitoring, and program management. As a senior program manager, Ms. Fitch is supporting project planning, ramp up, and mobilization for this historic recovery effort.

Public Assistance Program Manager (October 2016-Present)
Volusia County, Florida | FEMA - Public Assistance Consulting
Following 2016 Hurricane Matthew, Volusia County was one of the communities to receive a disaster declaration in the State of Florida. The County activated Tetra Tech to provide post-disaster Public Assistance services following the declaration. As the program manager, Ms. Fitch is providing Public Assistance grant application and administration services including damage assessments, site visits, project formulation, and overall technical assistance to the County.

Public Assistance Project Manager (October 2016-Present)
City of South Daytona, Florida | FEMA - Public Assistance Consulting
Following 2016 Hurricane Matthew and 2017 Hurricane Irma, the City of South Daytona was one of the communities to receive a disaster declaration in the State of Florida. The City activated Tetra Tech to provide post-disaster Public Assistance services. As the program manager, Ms. Fitch is providing Public Assistance grant application and administration services including damage assessments, site visits, project formulation, and overall technical assistance to the City.
Résumé
Kalindi Fitch, PA Coordinator

assistance to the City. Tetra Tech has prepared, reconciled, and packaged the City's emergency and permanent work claims for submission to FEMA for reimbursement, and is actively engaged in completing permanent repair claims.

Public Assistance Project Manager (October 2016-Present)
Horry County, South Carolina | FEMA - Public Assistance Consulting
Following 2016 Hurricane Matthew, Horry County was one of the communities to receive a disaster declaration in the State of South Carolina. The County activated Tetra Tech to provide post-disaster Public Assistance services following the declaration. Specifically, Tetra Tech has collected and reconciled the County’s Category A, force account records and has prepared them for submission to FEMA for reimbursement.

Public Assistance Project Manager (October 2016-March 2017)
Beaufort County, South Carolina | FEMA - Public Assistance Consulting
Following 2016 Hurricane Matthew, Beaufort County was one of the communities to receive a disaster declaration in the State of South Carolina. The County activated Tetra Tech to provide post-disaster Public Assistance services following the declaration. Specifically, Tetra Tech has collected and reconciled the County’s Category A, force account records and has prepared them for submission to FEMA for reimbursement.

Public Assistance Program Manager (April 2016-Present)
Fayette County, Georgia | FEMA - Public Assistance Consulting
Following severe storms, and flooding, during December 2015, Fayette County was one of the communities to receive a disaster declaration in February 2016. The County activated Tetra Tech to provide post-disaster Public Assistance services following the declaration. As the project manager, Ms. Fitch is providing Public Assistance grant application and administration services, site visit and project formulation services, and technical assistance to the County.

Engagement Manager (October 2015-December 2015)
City of Norman, Oklahoma | FEMA - Public Assistance Consulting
Following tornadoes, severe storms, and flooding, the City of Norman activated Tetra Tech to provide post-disaster services. As engagement manager, Ms. Fitch deployed to the City, to provide PDA support and Post-Disaster Grant advisory services to the community. Ms. Fitch was responsible for the overall management, delivery and implementation of PA consulting services to the City.

Engagement Manager (August 2014-August 2015)
Napa County, California | Emergency Operations Center (EOC) Staff Augmentation, FEMA – Public Assistance Consulting
Within 48 hours of the 6.0 magnitude South Napa Earthquake, Ms. Fitch was activated by Napa County, California to provide EOC staff augmentation, preliminary damage assessment (PDA) support, and post-disaster grant advisory services to the community. During the recovery phase, Ms. Fitch was responsible for the overall management, delivery and implementation of PA consulting services including the completion of site visits and project formulation on behalf of Napa County. She served as a team lead along with the project manager and technical staff and had the overall responsibility to drive the completion of the project for the customer in all disaster recovery grant programs executed by Tetra Tech on behalf of Napa County.

Engagement Manager (October 2013-December 2014)
Boulder County, Colorado | FEMA - Public Assistance Consulting, FEMA - Hazard Mitigation Grant Program, FEMA – Private Property Debris Removal Program Management, U.S. Department of Housing and Urban Development - Community Development Block Grant Disaster Recovery Program
Ms. Fitch is responsible for the overall management, delivery, and implementation of the post-disaster grant management projects in Boulder County. She works as a team lead along with the program manager and technical staff and has the overall responsibility to drive the completion of customer projects in all disaster
Kalindi Fitch, PA Coordinator

recovery grant programs executed by Tetra Tech on behalf of Boulder County. Ms. Fitch is overseeing all phases or recovery including reporting, damage assessment, site visits, project formulation, mitigation, special considerations, and overall grant tracking.

**Supervisory Consultant (June 2014-October 2015)**

**New Jersey Office of Emergency Management | FEMA - Public Assistance Small Project Compliance Review**

As a supervisory consultant on this project, Ms. Fitch is providing the client with PA consulting services to support the compliance review of FEMA’s small project processes, the development of workflow documents, and Standard Operating Procedures for the use of the New Jersey Office of Emergency Management (NJOEM). Ms. Fitch is also supporting the establishment of a project worksheet QA/QC review, and providing sub-grantee support through work with the NJOEM Public Assistance Unit.

**IT/Document Control/Manager (January 2012–May 2013)**

**State of Vermont Emergency Management | Hazard Mitigation Grant Program, Technical Assistance**

Our team was activated by Vermont Emergency Management (VEM) is to assist HMGP-eligible sub-applicants in identifying eligible HMGP projects and completing the application process by state- and FEMA-established deadlines. As IT/Document Control Manager, Ms. Fitch managed application intake and quality assurance/quality control and was responsible for accuracy and maintenance of the grant management software tool specifically created for the state.

**Grant Management Specialist (January 2013–December 2013)**

**Terrebonne Parish, Louisiana | Community Development Block Grant Disaster Recovery, Buyout Program Management**

Our team provided Terrebonne Parish with professional services, including project management, environmental review, and environmental testing required to implement their CDBG-Disaster Recovery (DR) Buyout Program. On this project, Ms. Fitch served as a grant management specialist assisting with overall program management and HUD compliance.

**Assistant Analyst (September 2011–January 2012)**

**City of Virginia Beach, Virginia | Financial Recovery Services, FEMA Public Assistance**

Our team provided the City of Virginia Beach with financial recovery services to help maximize funding from the FEMA PA Grant Program. As an assistant analyst, Ms. Fitch was responsible for data collection, project worksheet writing, site visits, and grant management software update for the FEMA-PA project worksheets completed by our team.

**Project Coordinator (September 2011–January 2012)**

**Virginia Department of Transportation | Financial Recovery Services, FEMA Public Assistance**

Our team provided the Virginia Department of Transportation with financial recovery services to help maximize funding from FEMA PA Grant Program and Federal Highway Administration (FHWA) Emergency relief (ER) Program. As project coordinator, Ms. Fitch assisted in overseeing project operations, including identifying project roadblocks and need assessment, project set-up, and final closeout.
EXPERIENCE SUMMARY

Mr. Christopher Godley, a Certified Emergency Manager (CEM) with more than 25 years of experience in public safety and emergency management, leads teams in providing emergency management preparedness services for public and private sector clients.

Before he joined Tetra Tech, Mr. Godley served as Director of Emergency Management for the City of San Jose, California, the tenth largest city in the nation. Mr. Godley also served as the Manager of Emergency Services for Marin County, California, and as the Deputy Emergency Services Coordinator for Sonoma County, California. He has also served in various roles, including incident commander, emergency operations center (EOC) coordinator, section chief, liaison officer, and project manager, in response to 14 presidential, 18 state, and more than 25 local disasters. Most recently, Mr. Godley served as a senior advisor to the City of Santa Rosa in response to the 2017 California wildfires.

As a 17-year veteran of the Army National Guard, Mr. Godley served as military field commander, operations officer, and liaison officer in wildfire, winter storm, and flood events. He also led a NATO Military Professional Exchange mission in Ukraine to develop enhanced flood disaster response coordination.

Mr. Godley has presented on a variety of emergency management subjects for audiences including the International Association of Emergency Managers, California State Legislature, Federal Emergency Management Agency (FEMA) Region IX Regional Response Team, Heritage Preservation Institute, California Emergency Services Association, Bay Area Economic Forum, and the San Francisco Bay Area Urban Area Security Initiative (UASI).

In addition, Mr. Godley leads Tetra Tech’s Cyber Incident Consequence Management Preparedness effort. This initiative develops actionable cyber disruption threat analysis, creates preparedness approaches and assists organizations in implementing near-term and long-term solutions, including threat mitigation and response planning.

RELEVANT EXPERIENCE

Interim Emergency Services Manager (March 2018 – Present)
Sonoma County, California

Following what was at the time the most destructive wildfire in California history, Mr. Godley was asked to assume the role of the County Emergency Services Manager. His key responsibilities include identifying and analyzing various governance and staffing models for the Emergency Services Division, make recommendations to the Board of Supervisors, and develop a new Department of Emergency Management. Mr. Godley is leading the

YEARS OF EXPERIENCE

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EDUCATION

MA, Emergency Services Administration, California State University, Long Beach, 2013
U.S. Army Command and General Staff College, Combined Services Staff School, 2000
BA, Psychology, University of California, Los Angeles, 1988

AREAS OF EXPERTISE

• Cyber Incident Management
• Emergency Operations Planning
• Incident Management
• EOC Staff Development and Training
• Exercise Design
• EOC Design and Function

REGISTRATIONS/ AFFILIATIONS

• International Association of Emergency Managers
• California Emergency Services Association

KEY TRAINING/ CERTIFICATIONS

• Certified Emergency Manager
• Incident Command System Trainer 100-400
• FEMA Professional Development Series
• HSEEP
• Emergency Operations Center Sustained Operations
• NIMS IS-700
County’s efforts to work with partner agencies and the public to develop a comprehensive Community Warning Program and oversaw the development of the County’s Wildfire After-Action Report. Mr. Godley is also responsible for managing the day-to-day operations of the Emergency Services Division, staff, and programs.

**Project Manager (December 2017 – June 2018)**

**Damage Assessment and Situational Awareness Plan | Multnomah County, Oregon**

Mr. Godley assisted the County of Multnomah and regional stakeholders in developing a comprehensive Damage Assessment Plan designed to provide a full picture of how a disaster has impacted the community in the areas of the built environment, infrastructure, transportation, social systems, and indirect community impacts. The effort ensured that the whole community is reflected in the associated tools and systems as well as being aligned with the regional priority of social justice.

**Project Manager (October – November 2017)**

**Wildfire Response and Recovery | City of Santa Rosa, California**

At the outset of what would become the most destructive wildfire event in California history, Mr. Godley immediately responded to the city’s EOC where he served as Deputy Coordinator for the next 3 weeks. He assisted in coordinating the response, Preliminary Damage Assessment, and emergency management mutual aid processes as well as advising staff and city leadership on short-term recovery subjects including local assistance centers, resident re-entry, debris management, and public information.

**Planning Lead and Project Manager (September – October 2017)**

**Hurricanes Harvey and Irma Debris Removal Monitoring Projects | Texas and Florida**

Mr. Godley initially assisted in deploying debris management staff into Texas following the devastating impact of Hurricane Harvey. When Hurricane Irma arrived in Florida, Mr. Godley trained and deployed additional debris management staff before and after landfall. He then deployed to Sarasota County, Florida where he led the team that provided monitoring services for removal of disaster-related debris in Sarasota County, City of Sarasota, and Town of Longboat Key, Florida.

**Task Manager (June – September 2017)**

**Dam Safety Gap Analysis | King County, Washington**

Mr. Godley assisted King County in conducting an integrated analysis of Emergency Action Plans (EAPs) for 88 dams located in King County and nearby surrounding areas. As part of this analysis, Mr. Godley and the county determined whether the existing evacuation and sheltering plans provide an adequate response to the potential threat. His team developed qualitative and quantitative plans assessments while also evaluating the linkages with the dam EAPs. They also assessed dam hazard-specific public education and outreach resources.

**Project Manager (November 2016 – June 2017)**

**Continuity of Operations and Emergency Operations Plans | City of Santa Rosa, California**

Mr. Godley lead the effort to develop both the City of Santa Rosa’s Emergency Operations Plan (EOP) and its Continuity of Operations Plan (COOP) as well as the supporting annexes. The concurrent planning process included formal assessments, stakeholder integration, staff interviews, initial and final drafts, as well as orientation workshops.

**Project Manager (February – May 2017)**

**Flood Response and Recovery | San Jose, California**

Immediately after the most significant flooding to affect the City of San Jose in 20 years, Mr. Godley responded to the EOC and served as a resident advisor to senior city leadership and EOC staff. He coordinated the Initial Damage Estimate, the Preliminary Damage Assessment, and provided guidance on public information, Local Assistance Center, care and shelter operations, debris management, fiscal considerations and long-term recovery planning.
Résumé

Christopher Godley, CEM

Project Manager (December 2016 – May 2017)
Cyber Incident Response Plan | Miami-Dade County, Florida
Mr. Godley led development of the county’s cyber incident response plan, which guides key functional areas, including threat assessment, intelligence sharing, investigations, stakeholder coordination, and operational management. This project also incorporated a comprehensive literature review to identify appropriate policy, planning guidance, professional best practices, and model plans.

Principal in Charge (May 2016 – January 2017)
Emergency Operations Plan Assessment | County of San Joaquin, California
Mr. Godley led a team that conducted a comprehensive assessment of the county’s current EOP with focus on compliance with federal, state, and local laws. The assessment provided a detailed analysis of the plan’s scope, assumptions, policies, procedures, and operational concepts to include identified strengths and areas for potential improvement. Tetra Tech worked collaboratively with county departments, agencies, and community stakeholders.

Deputy Project Manager (October – November 2016)
Hurricane Matthew Debris Removal Monitoring Project | Hilton Head Island, South Carolina
Mr. Godley assisted in developing and leading the team that provided monitoring services for removal of disaster-related debris on Hilton Head Island, South Carolina. The team supported the largest debris removal mission following Hurricane Matthew — more than 650,000 cubic yards.

Project Manager (June 2015 – February 2016)
Super Bowl 50 Regional Preparedness | San Francisco UASI
Mr. Godley led the effort to develop a regional Large Special Events Concept of Operations Planning Guide, facilitate a series of regional workshops focused on large special event coordination, and provide direct support to the Cities of San Francisco and Santa Clara as they prepared to host the largest series of Super Bowl-related events ever held.

Principal in Charge (February 2015 – March 2016)
Integrated Planning and Exercise Program | Port of Stockton, California
Mr. Godley supported efforts by the Port to revise their EOP and Staff Response Guides as well as conduct a corresponding series of tabletop and functional exercises for Port staff, tenants, local public safety agencies and other stakeholders. Training included emergency management functions and active shooter response skills.

Project Manager (August – October 2014)
Earthquake Response and Recovery | County of Napa, California
Mr. Godley responded to support the county after the largest earthquake in the San Francisco Bay Area in 25 years. He served as Deputy Recovery Operations Center Manager coordinating the Preliminary Damage Assessment process, developed a successful justification for county residents to receive FEMA Individual Assistance, and oversaw development of the County and City of Napa’s After Action Reports.

Principal in Charge (March – July 2014)
Cyber Incident Enhanced Tabletop Exercise | California Ports
Mr. Godley oversaw a project to develop and deliver an enhanced four-hour, facilitated, discussion-based exercise with simultaneous activities distributed among four core functional working groups at the Port of Los Angeles and five other California port locations. Involving 210 participants, the exercise was the first in the nation to incorporate the 2014 Framework for Improving Critical Infrastructure Cybersecurity.

Project Manager (October – December 2012)
EOC Handbook and EOC Staff Orientation Training Program | County of Alameda, California
Mr. Godley served as project manager for development of a handbook that directs and supports the function of the Alameda County EOC. The handbook covered staff procedures, technology, activation, staff position checklists, forms, and references. Mr. Godley also developed and provided a customized course of instruction and hands-on training for EOC staff.
EXPERIENCE SUMMARY

Mr. Rob Flaner has spent over 30 years developing a comprehensive background in all aspects of floodplain management while administering the Community Rating System (CRS) under contract with the Federal Emergency Management Agency (FEMA). The CRS is a FEMA program that provides incentive to communities to exceed the minimum requirements of the National Flood Insurance Program. The CRS program recognizes a comprehensive range of non-structural flood hazard mitigation activities that include: public information, mapping and regulations, flood damage reduction, planning and flood warning. Mr. Flaner was responsible for coordinating all CRS objectives between State, Local, and Federal entities in a 9-state territory that spanned three FEMA Regions. During his tenure with the CRS program, Mr. Flaner was able to develop strong working relationships with his Federal, State, and Local partners. The CRS since its inception has developed into a template for sustainable floodplain management that can be used at the local level to support multiple facets of community programs. Mr. Flaner’s detailed understanding of the CRS program and floodplain management helped him to develop a diverse floodplain management background that has been utilized by FEMA as a Disaster Assistance Employee.

Mr. Flaner has taken this diverse experience in floodplain management and expanded it into planning and preparing for the impacts of all natural hazards through coordinated planning efforts pursuant to the Disaster Mitigation Act of 2000. Utilizing planning tools such as HAZUS-MH, FEMA’s Benefit Cost Analysis Re-engineering (BCAR) and the CRS 10-step planning template, Mr. Flaner has supported local governments across the country in all phases of emergency management. Mr. Flaner currently serves as Tetra Tech’s Hazard Mitigation program Manager for the western U.S. This position involves managing multi-disciplined projects as well as providing subject matter expertise in all phases of emergency management.

RELEVANT EXPERIENCE

Hazard Mitigation Grant Program Support

Presidential National Disaster Resilience Competition Grant support, Pierce County, WA, August 2015 to January 2016

Tetra Tech’s services were retained by Pierce County to perform the benefit-cost analyses for projects targeted for the County’s National Disaster Resilience Competition (NDRC) application. Mr. Flaner was the project manager and sole analyst for the project. The County has identified over 30 projects totaling over $100 million in project costs that were need to be shown as cost-effective under the NDRC. This project was a real challenge in that cost-effectiveness parameters were not defined under the NDRC program. Mr. Flaner utilized FEMA’s BCA methodology to measure both direct benefits as well as environmental benefits for over 30 projects. Pierce county was identified as one of 40 finalist out of over 200 applications to the NDRC program.

Hazard Mitigation Program Assistance, the City of Snoqualmie, WA, January 2008 – Present
The City of Snoqualmie, WA is the “poster child” for flood risk exposure in FEMA Region X. Severally impacted by 3 presidentially declared flood events in a 2-year period; The City of Snoqualmie retained Tetra Tech to provide hazard mitigation support services, including:

- Grant application assistance for FEMA hazard mitigation grant programs.
- Benefit-cost analyses for over 50 flood damaged structures.
- Construction of a detailed level-2 HAZUS-MH flood model utilizing property specific data (FEMA Elevation Certificates) to establish/validate damage functions.
- Public education on FEMA grants programs and their eligibility requirements.
- Mediator between the State, FEMA and the City on technical and programmatic issues
- NFIP compliance
- Initiation of the 5-year update to the City’s hazard mitigation plan.

Mr. Flaner managed all phases of this project as well and providing the principal subject matter expertise. This included oversight of a multi-disciplined team assembled to meet the needs of the City.


Under this volunteer project, Tetra Tech served FEMA as a registered “beta” tester for the benefit-cost Analysis Re-engineering (BCAR) platform. During this beta test phase Tetra Tech performed the following tasks:

- Performed over 50 benefit-cost analyses for existing Tetra Tech clients utilizing both the new BCAR methodology and the older FEMA BCA toolkit to compare results.
- Provided feedback to FEMA staff on observations and findings during testing phase.
- Supported FEMA staff on trouble-shooting software application problems.
- Validation of damage functions
- Utilized BCAR methodology for actual FY-2009 HMA applications

Floodplain Management / Hazard Mitigation Services and Training, Pierce County, Washington (2006-present)

As part of its Stormwater on-call contract with Pierce County, Tetra Tech provides hazard mitigation program technical that includes the following services on a work-order/task order basis:

- Project development, scoping and cost estimation
- Provide FEMA grant application technical support in that includes: benefit/cost analysis of the prospective project, e-grant support, and grant writing.
- Tetra Tech has performed over 30 benefit-cost analyses for Pierce County since 2006 that have resulted in the County securing over $6 million grant funding under FEMA Hazard Mitigation Grant programs.

Hazard Mitigation Program Assistance, City of Roseville, California 2005-Present

Tetra Tech provides Hazard Mitigation program assistances to the City of Roseville on an “on-call” basis. Services provided under these contracts include:

- Hazard Mitigation program support that includes application preparation and benefit-cost analyses.
- Tetra Tech has aided the City of Roseville in securing over $1.5 million in grant funding under FEMA Hazard Mitigation grant programs since 2005.
- Development/Maintenance of City’s Hazus model
EXPERIENCE SUMMARY

Mr. Bart Spencer, with more than 30 years of experience in public safety and emergency management, is a team member providing emergency preparedness services for both public and private sector clients.

Just prior to joining Tetra Tech, Bart was the Emergency Services Coordinator for the City of Burlingame and Town of Hillsborough and updated their joint Emergency Operations Plan (EOPs) and Continuity of Operations Plans (COOP). Mr. Spencer spent 12 years as a Director for Menlo Park Fire Protection District. Menlo Fire is host to one of the nation’s twenty-eight Urban Search & Rescue Teams that was deployed to New York City following the 9/11 attacks. Bart also worked for the San Mateo County Office of Office of Emergency Services as an Emergency Services Coordinator.

In addition to his public sector work, Mr. Spencer served as the Western Region Director for Roam Secure/Cooper Notification, an early developer in mass notification and emergency communication. In that role, he oversaw operations and services in the West including more than 40 system deployments.

Mr. Spencer started his public safety career in the Memphis, Tennessee area where he worked as a firefighter-paramedic and volunteered with the county’s Sheriff’s Office Emergency Services Unit as a paramedic, search & rescuer, and officer-in-charge.

During his career, Bart has been involved with disasters that include small plane crashes, floods, fires, earthquakes, and tornados.

Most recently, Bart was the countywide project lead for the San Mateo County Hazard Mitigation Plan coordinating 30 agencies through Federal Emergency Management Agency (FEMA) approval. Currently, he serves as the vice president for the local county Emergency Managers Association and led the effort to update the Emergency Operations Center (EOC) position descriptions and job-aids.

RELEVANT EXPERIENCE

Program Manager (2014 – 2018)  
Emergency Preparedness Program | Burlingame and Hillsborough, California
Charged with updating and facilitating the emergency management program for Burlingame and Hillsborough that included mitigation and planning efforts as well as trainings and exercises. Mr. Spencer oversaw the update for the hazard mitigation plan, drafted the most recent EOP and COOP as well as developed an emergency and crisis communication plan. Burlingame and Hillsborough operate a joint emergency management program and joint Emergency Operations Center.
Project Manager (2018)
EOC Job Aids | San Mateo countywide, California
Coordinated efforts on development and deployment of customized EOC job aids for use throughout county EOCs.

Project Coordinator (2018)
Public Alert & Warning Program | San Mateo countywide, California
Following the devastating 2017 fires in northern California, worked with various members to develop a more useful, coordinated and collaborative public alerts system process for use by jurisdictions in San Mateo County. Mr. Spencer served as a subject matter expert in public alerting systems and a representative of emergency management.

Project Lead (2014 – 2018)
Annual Emergency Preparedness Survey | San Mateo countywide, California
Oversaw the update of various countywide projects and programs including the County’s Annual Preparedness Survey that assesses emergency preparedness status of specific plans and programs. This ongoing survey process was developed to understand strengths and areas for improvement which provides data for scheduling trainings and exercises. The survey is reviewed and updated annually.

Project Manager (2015 – 2018)
Hazard Mitigation Plan Project | San Mateo countywide, California
Served on a selection committee and subsequently as a project manager for a countywide (multijurisdictional) hazard mitigation planning project coordinating 30 agencies, interfacing with vendors, and facilitating processes through FEMA and California Governor’s Office of Emergency Services (Cal OES) approval. Continued to serve as a maintenance manager following FEMA approval and jurisdictional adoptions.

Mass Notification & Emergency Communication Systems | Western United States
Served as the project lead for various mass notification and emergency communication systems through the western half of the United States. Clients included local and state government entities, university and colleges, and private businesses. As the lead, Mr. Spencer coordinated various business development, planning and configuration, deployment and implementation, and maintenance teams.

Project Coordinator (2004)
Emergency Preparedness | Millbrae, California
Assisted the City of Millbrae in its efforts to update its EOP by interfacing with staff members and the City’s designated emergency management planner.

Emergency Preparedness | Half Moon Bay, California and Half Moon Bay Fire District
As the assigned emergency preparedness manager, coordinated training and exercise efforts and staffing and collaboration between the City and Fire District. The City and Fire District also have a limited number of personnel able to staff an EOC. Half Moon Bay is a coastal community and can become isolated if access becomes disrupted during a major emergency or disaster.

Project Facilitator (2003)
Emergency Preparedness | Burlingame, California
Assisted City of Burlingame in its efforts to update its training and exercise programs by interfacing with staff members and designated emergency management planner.

Project Facilitator (2002)
Emergency Preparedness | Belmont, California
Assisted City of Belmont in its efforts to update its training and exercise programs by interfacing with staff members and designated emergency management planner.
Prior Experience

Description and History of the Firm

Tetra Tech, Inc. (Tetra Tech) is a leading provider of consulting, engineering, and technical services worldwide. Founded in 1966, Tetra Tech is one of the leading firms in the nation in the field of disaster management and homeland security, with millions of dollars in revenue coming from contracts in such diverse areas as infrastructure hardening and protection; disaster recovery; emergency management, planning, and preparedness; community resilience; and grant management. Tetra Tech supports government and commercial clients by providing innovative solutions to complex problems focused on water, environment, energy, infrastructure, and natural resources. With 16,000 employees worldwide, Tetra Tech's capabilities span the entire project life cycle.

Dedicated to helping state and local governments plan for and recover from natural and human-caused disasters, our staff members offer a field-tested and proven methodology for emergency readiness, continuity planning, and disaster recovery. Our team is recognized for its ability to quickly respond to a broad range of emergencies, allowing our clients to return to the business of running their day-to-day operations.

Likewise, our team’s understanding of the Federal Emergency Management Agency (FEMA), the Federal Highway Administration (FHWA) (including recent changes), and other reimbursement agencies’ requirements for eligibility, documentation, and reimbursement helps clients receive the maximum reimbursement allowed. Our team has obtained over $6 billion in reimbursement funds for our clients from federal agencies such as FEMA, FHWA, and the Natural Resources Conservation Service (NRCS). In total, our team has successfully managed the removal of and reimbursement for over 103 million cubic yards (CYs) of debris as well as the demolition of over 12,500 uninhabitable residential and commercial structures.

Within our proposal, we demonstrate that:

- We are duly qualified to perform the scope of work outlined in the County of Sacramento request for proposal, as evidenced by our staff’s extensive qualifications for many of the nation’s most catastrophic disasters and our team’s previous experience with disaster recovery in California over the past 10 years.
- We are committed to providing the County with skilled resources within the time frames specified by the County as evidenced by the depth of experience of our senior management team and project management team.
- We offer a proven and successful technical and management approach that has been refined in disaster activations across the United States, including 23 projects with over 1 million CYs of debris, as evidenced by our team’s detailed scope of work and significant work history in the disaster response marketplace and within the state.
- The backbone of our disaster debris recovery program is our senior management team’s foundation in the solid waste industry. For nearly 15 years, Mr. Jonathan Burgiel, a 30+-year industry veteran, has worked with a team of highly skilled professionals to design and develop a proven approach that has been battle-tested and refined over 58 activations across the United States.
As a global engineering firm with over 2.6 billion in annual revenues, we have the financial resources and cash flow to support a large, long-term recovery effort.

We offer detailed reporting, real-time debris collection tracking, and mapping capabilities that are driven by our RecoveryTrac™ automated debris management system (ADMS) technology, which allows our staff to monitor and manage a recovery effort electronically in addition to increasing productivity while decreasing fraud, human error, and cost to the County.

Disaster Debris Management Planning Expertise

The goal of a disaster debris management plan (DDMP) is to better prepare state and local governments to respond to and recover from a debris-generating event. DDMPs help communities restore public services and streamline public health and safety efforts in the aftermath of a disaster by outlining the coordination and debris removal management operations and integrating with the overall emergency management plan. DDMPs also provide the organizational structure, guidance, and standardized procedures for the clearance, removal, and disposal of debris caused by a major debris-generating event and outline pre-event preparations during times of normalcy, operations immediately prior to a known disaster threat, operations following the disaster event, and demobilization and closeout following completion of debris removal efforts.

As a leading provider of emergency management services, Tetra Tech knows what it takes to respond effectively and initiate recovery activities almost simultaneously while maintaining transparency for the public and elected officials. Our active involvement in response and recovery efforts enables us to develop realistic plans that can be effectively implemented during a response.

Our staff has worked with local jurisdictions to develop new DDMPs and to update existing DDMPs to meet the Federal Emergency Management Agency (FEMA) guidelines. In 2007, our team completed a compliance review of Escambia County’s existing DDMP against FEMA guidelines and requirements. The Escambia County DDMP became the first in Florida to be approved by FEMA following issuance of the 325 guidelines.

Tetra Tech has assisted communities with all phases of debris management planning and development, including:

- Vulnerability assessment
- Identification of management team organizational structure
- Working with leadership and stakeholders to establish and define roles and responsibilities
- Development of pre-event, immediate threat, response, and recovery checklists
- Development of public information programs for the various stages of response and recovery
- Debris estimation
- Analysis and identification of debris management sites (DMS)
- Development and evaluation of debris removal and disposal contracts

Tetra Tech can also accommodate communities with other customized solutions to help meet their disaster debris management goals. Recently, Tetra Tech developed DDMPs for Washington, DC and the unincorporated areas of Los Angeles County, California, and helped Los Angeles County create an Operational Area Mass Debris Management Plan focusing on coordinating efforts between the County and the 88 municipalities residing within to respond to a mass debris event affecting the entire area. This operational area plan will also provide a DDMP template for individual municipalities to utilize in writing their own DDMPs. Tetra Tech has also developed and facilitated training programs and exercises to help communities become familiar with their DDMP and successfully implement the DDMP when needed.
Representative Disaster Debris Management Planning Experience

Exhibit 2-1 provides a sampling of clients who have retained Tetra Tech for disaster debris management planning services. In total, Tetra Tech has provided these services to over 50 communities throughout the nation, ranging from small local communities to large regional areas.

**Exhibit 2-1: Sample Disaster Debris Management Planning Experience**

<table>
<thead>
<tr>
<th>Beaufort County, SC Disaster Debris Management Planning and Training</th>
<th>Brazoria County, TX DDMP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broward County, FL Debris Management Center Operating Plan</td>
<td>Broward County, FL Pre-event Comprehensive Temporary DMS Study</td>
</tr>
<tr>
<td>Cabarrus County, NC DDMP</td>
<td>City of Cape Coral, FL DDMP Revision</td>
</tr>
<tr>
<td>Collin County, TX DDMP</td>
<td>State of Connecticut Concept of Operation Plan</td>
</tr>
<tr>
<td>Cumberland County, NC DDMP</td>
<td>Currituck County, NC DDMP</td>
</tr>
<tr>
<td>City of Daytona Beach, FL DDMP</td>
<td>Escambia County, FL DDMP</td>
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<tr>
<td>Fort Bend County, TX DDMP</td>
<td>City of Grand Prairie, TX DDMP</td>
</tr>
<tr>
<td>Gwinnett County, GA DDMP and Tabletop Exercise</td>
<td>City of Hialeah, FL DDMP</td>
</tr>
<tr>
<td>Houston-Galveston Area Council Disaster Debris Management Planning Activities</td>
<td>City of Lewisville, TX DDMP</td>
</tr>
<tr>
<td>Town of Longboat Key, FL DDMP</td>
<td>Los Angeles County, CA Mass Debris Management Plan</td>
</tr>
<tr>
<td>City of City of Mansfield, Texas DDMP</td>
<td>City of Miramar, FL DDMP</td>
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<tr>
<td>City of Mobile, AL DDMP</td>
<td>Montgomery County, PA Debris Management Planning and Assessment</td>
</tr>
<tr>
<td>Multnomah County, OR DDMP</td>
<td>New York-New Jersey-Connecticut-Pennsylvania Regional Catastrophic Planning Team Disaster Debris Management Planning</td>
</tr>
<tr>
<td>City of Norman, OK DDMP and Program</td>
<td>Orange County, CA DDMP</td>
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<tr>
<td>Osceola County, FL Disaster Debris Management Planning</td>
<td>Parker County, TX DDMP and Tabletop Exercise</td>
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<tr>
<td>City of Pensacola, FL DDMP</td>
<td>Polk County, FL DDMP</td>
</tr>
<tr>
<td>San Diego County, CA DDMP</td>
<td>City of Sarasota, FL DDMP</td>
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<tr>
<td>Seattle Public Utilities, WA DDMP Update</td>
<td>Seattle Public Utilities, WA DDMP</td>
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<tr>
<td>Snohomish County, WA DDMP</td>
<td>Seminole County, FL DDMP and Temporary Debris Storage and Reduction Site Assessment</td>
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<td>Texas Tech University System, TX DDMP</td>
<td>City of South Daytona, FL DDMP</td>
</tr>
<tr>
<td>Volusia County, FL DDMP</td>
<td>City of Venice, FL Disaster Debris Management Planning Program</td>
</tr>
<tr>
<td>City of Winter Springs, FL DDMP</td>
<td>Wake County, NC DDMP Review</td>
</tr>
</tbody>
</table>
Knowledge and Expertise in Disaster Debris Management

Recent Debris Monitoring Experience

Our team has vast experience providing disaster management, recovery, and consulting services to state and local government agencies. Our approach includes partnering with our clients to establish and test the necessary plans and procedures before a disaster strikes and assisting with disaster response and recovery operations as well as post-disaster grant management. Exhibit 2-2 provides an abbreviated experience matrix for projects conducted since 2001. Profiles and references from specific projects are featured in section 3. Tetra Tech can provide additional projects and information upon request.


<table>
<thead>
<tr>
<th>Year</th>
<th>Events</th>
<th>Clients</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>FLOODING - 2 Clients</td>
<td>HURRICANE MARIA - 1 Client</td>
</tr>
<tr>
<td>2014</td>
<td>FLOODING - 1 Client</td>
<td>TORNADOES - 2 Clients</td>
</tr>
<tr>
<td>2013</td>
<td>ICE STORM - 2 Clients</td>
<td>FLOODING - 2 Clients</td>
</tr>
<tr>
<td>2012</td>
<td>ICE STORM - 2 Clients</td>
<td>FLOODING - 1 Client</td>
</tr>
<tr>
<td>2011</td>
<td>TORNADOES - 2 Clients</td>
<td>HURRICANE SANDY - 13 Clients</td>
</tr>
<tr>
<td>2010</td>
<td>TORNADOES - 1 Client</td>
<td>HURRICANE ISAAC - 5 Clients</td>
</tr>
<tr>
<td>2009</td>
<td>ICE STORMS - 1 Client</td>
<td>TROPICAL STORM DEBRA - 3 Clients</td>
</tr>
<tr>
<td>2008</td>
<td>ICE STORMS - 2 Clients</td>
<td>HURRICANE GUSTAV - 7 Clients</td>
</tr>
<tr>
<td>2007</td>
<td>SNOW STORMS - 2 Clients</td>
<td>HURRICANE DOLLY - 30 Clients</td>
</tr>
<tr>
<td>2006</td>
<td>SNOW STORMS - 6 Clients</td>
<td>MIDWEST FLOODING - 30 Clients</td>
</tr>
<tr>
<td>2005</td>
<td>HURRICANE IRMA - 3 Clients</td>
<td>MIDWEST ICE STORM - 2 Clients</td>
</tr>
<tr>
<td>2004</td>
<td>HURRICANE KATRINA - 11 Clients</td>
<td>GROUNDHOG DAY TORNADOES - 2 Clients</td>
</tr>
<tr>
<td>2002</td>
<td>HURRICANE CHARLEY - 2 Clients</td>
<td>MIDWEST SNOW STORMS - 5 Clients</td>
</tr>
<tr>
<td>2001</td>
<td>TROPICAL STORM GABRIEL - 1 Client</td>
<td>320 COMMUNITIES IN 24 STATES &amp; 1 US TERRITORY</td>
</tr>
</tbody>
</table>

320 COMMUNITIES IN 24 STATES & 1 US TERRITORY

102,890,005 TOTAL CUBIC YARDS OF DEBRIS EQUIVALENT TO 102,890 FOOTBALL FIELDS

94,073,331 TOTAL CUBIC YARDS OF DEBRIS
6,399,127 TOTAL CUBIC YARDS OF DEBRIS
361,402 TOTAL CUBIC YARDS OF DEBRIS
207,250 TOTAL CUBIC YARDS OF DEBRIS
548,369 TOTAL CUBIC YARDS OF DEBRIS
1,330,000 TOTAL CUBIC YARDS OF DEBRIS

21 HURRICANES
9 SNOW/ICE WINTER STORMS
4 TORNADOES
4 TROPICAL STORMS
8 FLOODS
9 WILDFIRES/DROUGHTS
Large-Scale Debris Monitoring Experience

Tetra Tech takes great pride in the reliability of our service. Clients count on us to respond in their time of need, and we deliver. Our team has never failed to respond to our clients’ deployment and mobilization needs, regardless of location or type of disaster. Our services under these engagements included environmental permitting, temporary debris management sites (TDMS) monitoring, contractor invoice reconciliation, and federal grant reimbursement support.

Exhibit 2-3: Large Project Experience

Summary of Projects Over 1 Million (M) Cubic Yards

- 5.46M
  Houston, TX
  Hurricane Ike, '08

- 5.38M
  Escambia County & Pensacola, FL
  Hurricane Ivan, '04

- 3.49M
  Collier County, FL
  Hurricane Irma, '17

- 3.28M
  Miami-Dade County, FL
  Hurricane Irma, '17

- 2.89M
  Gulfport, MS
  Hurricane Katrina, '05

- 2.69M
  Bolivar Peninsula, TX
  Hurricane Ike, '08

- 2.57M
  Miami-Dade County, FL
  Hurricane Wilma, '05

- 2.49M
  Harrison County, MS
  Hurricane Katrina, '05

- 2.39M
  Harris County, TX
  Hurricane Ike, '08

- 2.18M
  Hilton Head Island, SC
  Hurricane Matthew, '16

- 2.03M
  Houston, TX
  Hurricane Harvey, '17

- 1.81M
  Galveston, TX
  Hurricane Ike, '08

- 1.71M
  Polk County, FL
  Hurricane Irma, '17

- 1.70M
  Santa Rosa County, FL
  Hurricane Dennis, '05

- 1.60M
  Beaufort County, SC
  Hurricane Matthew, '16

- 1.59M
  Escambia County, FL
  Hurricane Dennis, '05

- 1.48M
  Jefferson County, TX
  Hurricane Rita, '05

- 1.44M
  Springfield, MO
  Snowstorms, '07

- 1.29M
  Harris County, TX
  Hurricane Harvey, '17

- 1.05M
  Volusia County, FL
  Hurricane Matthew, '16

Photo Source | FEMA.gov
Our understanding of the region’s response challenges and capabilities and our established presence in North Carolina will allow our team to focus immediately on the issues at hand.

Experience Coordinating with Federal, State, and Local Funding Sources and Reimbursement Processes

Throughout the course of the hundreds of debris management and grant management projects that our staff has administered for state and local governments across the United States, our team has developed a unique understanding of the FEMA organization and other regulatory agencies’ policies and procedures. Our team maintains strong relationships with many of the lead federal coordinating officers, debris specialists, Public Assistance (PA) coordinators and officers, and other staff. Our team also understands the duties and responsibilities of emergency management personnel at the state and local level, which helps us build strong relationships. Our team has worked with hundreds of local government emergency management agencies and dozens of state emergency management organizations following disaster debris-generating events.

Our team has worked closely with FEMA and FHWA staff in the determination of debris eligibility, data requirements, project worksheet/detailed damage inspection report development, auditing of documentation, and reimbursement requirements. This includes providing step-by-step assistance to clients throughout the FEMA reimbursement process.

To maximize PA funding for our clients, our staff members maintain a working relationship with FEMA at the headquarters, regional, and local levels. Constant communication and regular interface with FEMA allows our team to obtain quick responses on disaster-specific guidance and issues.

Moreover, Tetra Tech maintains a full-time staff to assist our clients in obtaining reimbursement. Mr. Dick Hainje, former regional administrator of FEMA Region VII, has been responsible for deploying and managing over 2,000 emergency management employees following disasters and created a long-term community recovery process for FEMA Region VII. Mr. Hainje has assisted our clients with navigating the reimbursement process and obtaining clarification on FEMA policies. Mr. Hainje also led the response, recovery, and mitigation for the historic 2008 Midwest flooding event, where he was the regional administrator in charge of over 1,000 FEMA employees deployed to this event.

Additionally, our data management and document storage procedures are tailored to facilitate FEMA review of the generation of project worksheet versions throughout the project. Our FEMA appeals and funding specialists have worked with FEMA closeout officers to obtain millions of previously deobligated dollars for communities.

In the field, our operations managers and field supervisors fully understand FEMA rules and regulations for hand-loaded vehicles; stump, limb, and tree removal at unit rates; volumetric load calls at temporary disposal site locations; and right-of-way (ROW) debris removal eligibility. This allows us to monitor contracts to the smallest detail while concurrently managing and documenting the operation using proven methodologies that maximize FEMA reimbursement. Our understanding of reimbursement agencies’ requirements for eligibility,
documentation, and reimbursement has helped our clients obtain over $6 billion in reimbursement funds from federal agencies such as FEMA, FHWA, and the NRCS.

Our grant management experts have assisted clients with applying for and retaining grant funds, even after closeout and audit processes. Exhibit 2-4 provides a summary of our experience providing FEMA PA services to local and state governments.

### Exhibit 2-4: Recent Grant Funding Experience

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<th>Program</th>
<th>Value ($)</th>
<th>Preliminary Damage Request</th>
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<th>Applicant Kickoff Meeting</th>
<th>Site Visits/Inspections</th>
<th>Project Scoping</th>
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<th>PW/Application Development</th>
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Disaster Recovery Program Management Services

As a result of our successful performance on past projects, our team has become a national leader in providing management and support documentation for the following:

- Emergency road clearance
- Curbside debris collection
- Operation of citizen drop-off sites
- Demolition of uninhabitable structures
- Data management and invoice reconciliation
- Execution of private property debris removal (PPDR) programs
- Oversight of temporary debris management sites (TDMS)
- Final debris disposal at a landfill or other end use
- Conflict and damage resolution
- Truck certification
- Right-of-entry (ROE) administration

Special Programs Management

Our team is experienced with all facets of the debris removal monitoring industry, including special disaster recovery program management services. Some examples of special programs our team has managed and administered include the following:

- Animal carcass removal and disposal
- Asbestos abatement
- Beach remediation/restoration
- C&D debris
- Creosote piling
- Disposal site management
- Drainage and canal debris removal
- E-wastes
- Food waste removal
- Hazardous waste debris removal
- Leaner, hanger, and stump removal
- Marine/waterway debris removal
- Private property demolition/debris removal
- Nuisance abatement ordinance administration
- Saltwater killed tree removal
- Subsurface storm drain debris removal
- Vessel and vehicle recovery
- Wetland and parkland debris
- White goods debris removal
- Woodchips/ashes

Private Property/Right-of-Entry Debris Removal

Our team has administered many of the largest PPDR programs in U.S. history, including projects for New Orleans, Louisiana; Gulfport, Mississippi; Bastrop, Texas; and Escambia County, Florida. Tetra Tech assists communities with ensuring they have the legal authority via local and state ordinances to enter onto private property. Our team also assists with preparing submittal packages for FEMA to approve the program, promoting the ROE program with residents, and ensuring the program is properly documented. Exhibit 2-5 is a representative list of our experience in assisting clients with PPDR activities and demolition program management.
### Exhibit 2-5: PPDR and Demolition Program Management

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WATERWAYS DEBRIS REMOVAL

Our team has worked extensively with local, state, and federal agencies (including the United States Army Corps of Engineers (USACE) and the National Oceanic and Atmospheric Administration) to determine legal responsibility and to evaluate and implement marine debris removal programs. Our team has performed multiple projects for Monroe County, Florida (the Florida Keys), to remove derelict vessels and traps from waterways following Hurricanes Katrina, Gustav, Ike, and Wilma. Following Hurricane Ike, our team assisted Galveston City Municipal Utility District #12, Jefferson County Drainage District #7, the Trinity Bay Conservation District, and the Harris County Flood Control District with inland waterway debris removal assignments. We will help the County legal staff rapidly determine legal responsibility for waterway debris removal, verify scope eligibility, and document the work in a fashion deemed appropriate by reimbursement agencies. *Our team members monitored marine and vessel debris removal efforts following Hurricane Sandy on behalf of the New Jersey Department of Environmental Protection (NJDEP); following Hurricanes Matthew and Irma on behalf of FDEP; and following Hurricane Irma on behalf of the City of Cape Coral, Lee County, Brevard County, Monroe County, and Collier County.*

VESSEL AND VEHICLE RECOVERY

Tetra Tech is able to assist the County in documenting the locations and quantities of vessel and vehicle debris in the County and presenting a case to FEMA to approve and fund the program. The County must first show that they have a legal responsibility to remove the debris and that the debris is not the responsibility of another state or federal agency such as the California Environmental Protection Agency, USACE, or the NRCS. Vessel and vehicle debris on private land may present unique ingress/egress challenges and require ROE agreements for access. *Our team monitored vessel debris removal efforts following Hurricane Sandy on behalf of the NJDEP and provided similar services to Escambia County, FL and Monroe County, FL (Florida Keys) following the 2004 and 2005 hurricane season and most recently in Beaufort County, SC to remove vessels damaged and abandoned from Hurricane Matthew.*

LEANING TREES, HANGING LIMBS, AND STUMP REMOVAL

Leaning trees, hanging limbs, and stumps pose significant threats to public health and safety. Guidance on reimbursement for the removal of these vegetative threats is disaster-specific. Tetra Tech has the experience and expertise to help communities avoid the de-obligation of funds or non-reimbursement for these activities due to ineligible work. Our team has assisted numerous clients in surveying, documenting, and monitoring the removal of leaning trees, hanging limbs, and stumps. *Our team members most recently monitored the removal and disposal of 198,635 hazardous trees and hangers on behalf of 36 clients following Hurricane Matthew.* Exhibit 2-6 provides featured clients where our team has monitored the collection and removal of leaning trees, hanging limbs, and stumps following a disaster debris-generating event.
HAZARDOUS MATERIAL REMOVAL

Major disasters (particularly those that involve significant flooding) will result in the need to address hazardous materials. Typically, the U.S. Environmental Protection Agency (EPA) is responsible for identifying and removing large quantities of household hazardous waste (HHW) (containers over 5 gallons such as large commercial/industrial storage tanks, propane tanks, 55-gallon drums, etc.). Local governments are charged with implementing collection programs for HHW, including containers with paints, pesticides, household cleaners, oils/solvents, fuels, etc. Our team has significant experience helping local governments plan, procure, implement, and track disaster-related HHW collection programs at curbside or drop-off locations. Following Hurricane Ike, which resulted in a storm surge that covered almost all of Galveston Island, our team helped the City of Galveston
implement one of the largest post-disaster HHW programs in U.S. history, in addition to working cooperatively with the EPA on large quantity HHW recovery.

**Asbestos Containing Material Management**

Through our team’s years of demolition experience, including our previous engagements in Iowa following the 2008 flood, our team of experts has developed best management practices for documenting and monitoring work related to Asbestos Containing Material (ACM). Tetra Tech’s best management practices for ACM collection, remediation, and disposal meet state and local regulatory agency requirements. Tetra Tech will collect and catalog all pertinent information related to the ACM content, or lack thereof, for a property. Once the remediation contractor has removed and wrapped the ACM, Tetra Tech will document the transfer of custody through final disposition. As part of the ACM documentation process, Tetra Tech will also collect and pair all waste shipment records to the respective load tickets. Additionally, during the course of the project if Tetra Tech notices any lack of due diligence or potential for environmental violations, our management staff will notify County officials immediately and assist in creating a mitigation strategy. In the instance of non-ACM debris removal, Tetra Tech will collect and digitally link all TDMS or landfill manifest with the corresponding load ticket.

**Data Management**

Our team has spent years researching and developing an effort to streamline the debris collection documentation process with a focus on minimizing the cost to our clients and improving the visibility of debris project operations. Our ADMS, RecoveryTrac™, is the result of these efforts. RecoveryTrac™ is a scalable and fully featured disaster management application designed specifically to address the operational challenges faced during a disaster recovery project. Managing the enormous volume of documentation generated during a debris monitoring operation was paramount to the design of our ADMS. *This state-of-the-art technology has already shown to increase the efficiency and improve the management of debris removal efforts for multiple clients.* For more information on our data management, please see please see Section 4: Technical Resources, Technical Approach, and Reimbursement Assistance.

**Hauler Invoice Reconciliation and Contracting**

To expedite contractor invoice reconciliation efforts, Tetra Tech requires copies of all primary debris hauler contracts with the County. After reviewing the contracts, Tetra Tech will set up our ADMS, RecoveryTrac™ database to generate transactions for tickets issued to each debris contractor. Tetra Tech will then meet with each primary debris contractor to review the debris contractor reports that will be generated automatically through RecoveryTrac™. The debris contractor reports will provide each contractor with sufficient data to reconcile with their subcontractors as well as generate invoices for payment by the County. Several quality assurance (QA) and quality control (QC) checks will be conducted on data before it is provided to the contractor. RecoveryTrac™ significantly reduces the amount of time needed for a contractor to generate an invoice and for the subsequent invoice reconciliation with Tetra Tech. For more information on our hauler invoice reconciliation and contracting, please see Section 4: Technical Resources, Technical Approach, and Reimbursement Assistance.
Grant Consulting and Recovery

Over the past 15 years, Tetra Tech has developed a best-in-class approach to long-term disaster recovery planning and coordination. We leverage our deep capabilities and experience to provide our clients with solutions that structure their post-disaster planning efforts in a coherent and all-inclusive manner that maximizes funding opportunities and focuses on long-term community and infrastructure resilience.

Our grant management experts have assisted clients with applying for and retaining grant funds, even after closeout and audit processes. *Our team’s record of success spans over 300 state and local government clients in response to over 58 declared presidential disasters, representing the recovery of more than $6 billion in disaster grant funds. These activations have yielded grant program management engagements resulting in clients not only garnering grant funds but in retaining 99.8 percent of the funds received.* To maximize PA funding for our clients, our staff members maintain a working relationship with FEMA at the headquarters, regional, and local levels. Constant communication and regular interface with FEMA allows our team to obtain quick responses on disaster-specific guidance and issues.

The Tetra Tech team has provided FEMA PA, Individual Assistance, Hazard Mitigation Grant Program, HUD’s Community Development Block Grant – Disaster Recovery Grants support to hundreds of communities and several states across the nation. Understanding the program eligibility requirements is critical to successfully leverage public funds. We work with jurisdictions to complete project worksheets and identify, evaluate, and prioritize recovery projects, ensuring eligibility with various public funding programs whenever possible. Tetra Tech’s comprehensive public funding recovery services provide our clients with the necessary expertise and capacity to maximize the amount of available funding to successfully implement their disaster recovery efforts quickly and cost effectively and to achieve genuine community resilience. *Our team of grant and funding professionals is well versed in each of these grant programs to help the County navigate these funding sources.*

Tetra Tech’s recovery services are genuinely comprehensive in that our team has the experience and vision to provide not just traditional post-disaster funding management support but proven experiencing identifying, securing, and coordinating the use of non-disaster related funding programs to support rapid recovery efforts. Our team has worked with dozens of communities across the nation to ensure that recovery planning efforts are launched and implemented with long-term sustainability, risk reduction and elimination, and community economic and safety resiliency in mind. Recent examples include recovery support to communities in Texas following the 2015 floods, communities across 4 states in response to Hurricane Matthew and active leadership roles in new innovative community recovery programs jointly developed by FEMA and state governments following the devastation of Hurricane Sandy.

**WHAT DO OUR CLIENTS SAY?**

“*Over next six months following the disaster, Tetra Tech assisted us with FEMA PA Grant Program application and administration, FHWA ER technical assistance, FEMA HMG grant application, and HUD CDBG-DR project identification, technical assistance, and application development representing a combined, estimated $280 million in federal grants—the largest grant application in Boulder County’s history.*

*Boulder County has been very pleased by the work of Tetra Tech and would absolutely recommend them to any other state or local government agency in the aftermath of a disaster.*”

Michelle Krezek, Commissioners’ Deputy
Boulder County Commissioner’s Office

“We have had nothing but good service from Tetra Tech and are very pleased with the job your team has done.”

Edie Harvey, Asst. Director
Texas State University

*
FLOOD MITIGATION AND COMMUNITY RATING SYSTEM

Our team is well versed in the FEMA National Flood Insurance Program (NFIP) which provides flood insurance in communities that comply with minimum standards for floodplain management and FEMA’s Community Rating System (CRS). The CRS program is a mechanism provided by FEMA to incentivize community floodplain management practices that exceed minimum standards by providing flood insurance premium discounts to participating communities from 5 to 45 percent.

Tetra Tech is a national leader in providing program management and technical support to communities wishing to maximize their CRS potential and consequently reduce their residential and commercial NFIP premium rates by the maximum percentage possible. Our team has assisted dozens of communities around the nation achieve or improve their CRS ratings.

Our services include:

- Preparation and updating of local hazard mitigation plans
- Hazard Mitigation Planning
- FEMA grant preparation
- Benefit-cost analysis
- CRS application preparation
- Risk assessment
- Mitigation project development
- NFIP compliance issue resolution/training
References

Similar to the services being requested by the County of Sacramento, our team has successfully assisted over 300 clients with recovering from the damaging effects of hurricanes, tropical storms, tornadoes, floods, and ice storms across the country. Our efforts have allowed our clients to maintain their focus on continuing daily operations while relying on us to oversee the management of debris removal operations and federal reimbursement in compliance with FEMA and FHWA guidelines and reimbursement procedures.

The projects and references included on the following pages are a representative sample of our experience and accomplishments in performing services that are similar in scope, complexity, and magnitude to the County of Sacramento. We encourage the County to contact any of the references listed to inquire of our services. Additional project information and references can be provided upon request.

Why Choose the Tetra Tech Team?

Our team is well suited to assist the City for the following reasons:

- **Recent California Experience.** Tetra Tech has recently been contracted through CalRecycle and other California agencies to provide project management and oversight for several wildfire recovery efforts. This includes the Clayton, Detwiler, Erskine, Helena, Lake, Soberanes NorCal, Thomas, Carr, and Mendocino wildfires. Additionally, as a sub-consultant to another firm, Tetra Tech performed site assessments and individual site reports for fire-damaged commercial properties as part of the Valley and Butte Fire recovery. Tetra Tech completed hazardous materials, lead, radiation, and asbestos-containing materials surveys. As a result of our recent California experience, our staff thoroughly understands debris removal operations in the State and how to conduct projects in compliance with the California Governor’s Office of Emergency Services (CalOES) requirements. With our environmental group headquartered in San Diego, multiple offices located throughout California, and our solid waste group based in Diamond Bar, California, Tetra Tech will provide the County with a solution that bridges local knowledge with national expertise.

- **Nationally Recognized Leader in Disaster Debris Monitoring.** Since 2001, our team has assisted more local governments with debris monitoring efforts following catastrophic natural disasters than any other firm in the nation. We have served as the ground-zero debris monitoring consultant for many clients affected by our nation’s most catastrophic natural disasters. Collectively, our team has overseen and managed the recovery of over 103 million cubic yards (CYs) of debris on behalf of over 300 public sector clients. Tetra Tech not only assists local governments in developing DDMPs, but we also assist them in executing the plans following a debris-generating event. Because of this real-world experience, we are better able to inform our clients of what they should expect during a disaster and can share lessons learned and best practices to consider when planning for and responding to disasters.

- **One Firm, Countless Services.** Tetra Tech provides comprehensive services from emergency planning to expert grant management. Our team of consultants has helped local governments across the country develop disaster debris management plans (DDMPs), debris management site assessment reports, and many other emergency management plans and training exercises. Our extensive hands-on response and recovery experience allows us to develop more effective, operationally sound preparedness initiatives. Tetra Tech has an in-depth understanding and knowledge of all aspects of disaster debris management planning and has provided these services to over 50 communities throughout the nation, including most recently a multi-jurisdiction DDMP for the Central Contra Costa Solid Waste Authority, and a DDMP for the unincorporated areas of Los Angeles County and for Orange County, California. By providing comprehensive services, Tetra Tech can assist clients in developing plans and help execute those plans when necessary.

In 2017, Tetra Tech simultaneously deployed in Texas, Florida, Puerto Rico, and the Virgin Islands in response to three hurricanes (Harvey, Irma, and Maria), representing more than 100 government clients.
- **Proven Track Record and Valuable Insight to Planning for Large Metropolitan Areas.** Tetra Tech has provided emergency preparedness services to a diverse range of large cities and metropolitan areas across the country, including the Cities of San Diego, California; Port of Los Angeles, California; Houston, Texas; Chicago, Illinois; Salt Lake City, Utah; Memphis, Tennessee; Oklahoma City, Oklahoma; Kansas City, Missouri; Boston, Massachusetts; Atlanta, Georgia; and the District of Columbia. This varied and extensive range of experience with metropolitan regions is testament to Tetra Tech’s exceptional ability to help the County with any of its disaster debris planning, monitoring, or recovery needs. Additionally, we are proud of our ability to engage stakeholders on large urban area planning projects.

- **Per page 10 of the RFP,** Tetra Tech confirms that it meets the contractor qualifications per the FEMA Procurement Guidance for Recipients and sub-recipients under 2 CFR Part 200 Supplement to the Public Assistance Procurement Disaster Assistance Team Field Manual, under Section IV General Procurement Standards.
Section 3: References/Past Performance
Project Profiles
Disaster Debris Management Services of Fire Damaged Properties

PROJECT HIGHLIGHTS

- Managed the debris removal of over 8,000 fire damaged properties
- Included full-scale environmental services (site surveys, asbestos monitoring, soil sampling, air quality monitoring)
- Created a dynamic database that included documentation of costs to clear fire-damaged lots totaling over $1.5 billion

PROJECT DESCRIPTION

Since 2015, the State of California has been plagued by dry conditions resulting in above-normal wildfire danger. In 2015 and 2016 alone, California experienced over 15,000 wildfires throughout the state. Our team assisted multiple communities and municipalities in the State of California that were devastated by these events and that work has continues today.

Tetra Tech has worked directly for the local governments of Lake County, Calaveras County, and Monterey County on projects funded by FEMA reimbursement that range from traditional right-of-way debris removal, to time and materials emergency protective measures work, to the assessment and monitoring of standing dead tree removal.

In addition to our local government work, Tetra Tech has been the go-to contractor working directly with CalRecycle (though CALOES) to provide all the documentation management for multiple State-run fire remediation programs. Over the past several years, Tetra Tech has worked with CalRecycle on a program to remove fire-damaged structures from private property for seven separate wildfire events, including the Valley Wildfire (Lake County), Butte Wildfire (Calaveras County), Erskine Wildfire (Kern County), Clayton Wildfire (Lake County), Detwiler Wildfire (Mariposa County), Helena Wildfire (Trinity County),
Thomas Wildfire (Ventura County), Carr Wildfire (Shasta County) and the Mendocino Complex Fire (Mendocino County). As with any private property demolition or debris removal program, the paperwork involved in the packet management of the individual properties is a tremendous undertaking. Our team developed a custom database to manage parcel packets and supporting documentation as well as status reporting and various metrics and has refined this database and process over our years of work with the State.

To support State operations, Tetra Tech provided management and support staff for the CalRecycle/Cal OES incident command system. Our team also was responsible for conducting site surveys and environmental inspections, coordinating and documenting asbestos abatement operations, coordinating and monitoring debris removal operations, coordinating and monitoring hauling/disposal operations, and providing data management staff. All staff were certified and qualified to complete the high level of work performance that was necessary to complete the required tasks, including HAZWOPER certification. Tetra Tech performed all document intake from multiple departments, agencies, and contractors to acquire all necessary final documentation for the project database to support invoice reconciliation and to supply the necessary paperwork for funding through the California Disaster Assistance Act (CDAA) and FEMA for federally declared events.

Tetra Tech’s history includes working with local governments and the State of California on planning projects, including writing disaster debris management plans for Los Angeles County, Orange County, San Diego County, and Contra Costa County as well as several cities. This experience has helped lay the groundwork for our team’s true understanding of the State’s needs.

This past year, the State was affected by a series of 250 wildfires, referred to collectively as the October 2017 Northern California Wildfires. Of the multiple fires burning across the northern part of the state, 21 became major fires and seriously impacted Napa, Sonoma, and Mendocino counties. Due to the severity of this disaster, the United States Army Corps of Engineers (USACE) was tasked with the assignment of the debris removal mission. The USACE selected three prime debris removal contractors to work in the fire-damaged regions. Tetra Tech provided the documentation and environmental services for all three contractors. Tetra Tech’s USACE response to the California wildfires is the largest ADMS activation in U.S. history. This effort included mobilizing over 800 staff members to serve the three contracts.

In addition to the massive mobilization of field staff for both debris monitoring and environmental services, this project included the development of a custom database to meet the specific USACE needs. This provided real-time status reporting and operational metrics to assist the prime debris removal contractors in managing recovery efforts and allowed customized reporting to the USACE, including providing a global geospatial picture of project operations and real-time monitoring of financial project data.

Throughout multiple disaster debris management projects for multiple clients, our team has monitored the removal of debris from over 8,000 fire-damaged properties, including 30,000 standing dead trees and totaling 1.5 billion dollars in reimbursable costs.
Boulder County, Colorado
Disaster Debris Program Management and Grant Management – 2013 Floods

CLIENT
Boulder County, Colorado

LOCATION
Colorado

DURATION
October 2013 – December 2014

GRANTS ADMINISTERED
• FEMA PA
• FHWA HMGP

REFERENCE
Michelle Krezek
Boulder County Commissioners’ Office
P.O. Box 471
Boulder, CO 80306
Phone: (303) 441-3561
mkrezek@bouldercounty.org

KEY FEATURES
• Monitoring
• Demolition Monitoring
• Private Property Debris Removal Administration
• Reimbursement Support
• Grant Administration
• Claims Development

PROJECT DESCRIPTION
Tetra Tech assisted Boulder County, Colorado, following the devastating floods that occurred in September 2013 causing extensive damage throughout Boulder County and surrounding communities. Our team managed the private property debris removal and public right-of-way debris removal monitoring programs. We also assisted the County with the identification of eligible debris for reimbursement and administrating the program management for the County’s demolition project.

Additionally, Tetra Tech assisted Boulder County in strategically managing the County’s claims development and administration under the Federal Emergency Management Agency’s (FEMA) Public Assistance Program, the Federal Highway Administration reimbursement requirements, and the FEMA Hazard Mitigation Grant Program and assisting with Community Development Block Grant-Disaster Recovery application support. Our team was also tasked with providing grant accounting/administration support as needed to strengthen the efficacy of Boulder County agencies to be able to manage these grants long after our departure.
Disaster Debris Program Management
City of Houston, Texas

KEY FEATURES

- Program Management
- DMS Permitting
- Collection/Disposal Monitoring
- Contractor Procurement
- Data Management
- FEMA Reimbursement
- Large ADMS deployment

PROJECT DESCRIPTIONS

For nearly a decade, our team has had the pleasure of providing disaster debris monitoring, program management and Federal Emergency Management Agency (FEMA) reimbursement support on a stand-by basis to the City of Houston, Texas. Over that time period, the City has activated our team for 3 very large and very unique recovery projects. Due to our long standing relationship with the City and frequent coordination in times of normalcy, we have been able to provide superior service regardless of the scope of work.

On the evening of September 12, 2008, Hurricane Ike made landfall in Texas, leaving in its wake massive amounts of debris from high winds, inland flooding, and storm surge. This devastating event affected nearly every home within the City of Houston, which had enjoyed significant growth in both population and tree canopy since Hurricane Alicia 25 years prior. In response to Ike’s impact on the nation’s fourth largest city, our team mobilized over 1,000 staff to manage and document the City of Houston’s debris removal efforts. The City of Houston’s debris removal contractor, activated to augment the 463 Force Account City trucks, mobilized over 4,082 pieces of hauling equipment from around the nation to remove the 5,600,000 cubic yards of vegetative and construction and demolition debris.

The debris removal efforts in Houston were of record setting scale and pace. Over 75 percent of the total quantity removed was removed in 36 days, with the single day peak total exceeding 219,000 cubic yards. Through public/private partnerships formed before and after the disaster, the City of Houston dispersed the debris to 22

CLIENT
City of Houston

LOCATION
Texas

DURATION
Ongoing

REFERENCE
Joanne Song Yu
Operation Analyst
City of Houston Solid Waste
611 Walker Street, 12th Floor
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(832) 393-0484
Joanne.Song@houstontx.gov
private locations. The City of Houston was able to divert approximately 264,857 tons from the solid waste stream. This included erosion control at five landfills, material composting at 15 mulch facilities, and boiler fuel at 2 paper mills.

In addition to right-of-way (ROW) debris removal, our team photo-documented and obtained FEMA reimbursement for one of the largest municipal hazardous trees and hanging limb removal programs in U.S. history. Our team managed before and after photographs, GPS coordinates, and unit rate tickets substantiating work performed on 212,479 trees.

In 2011, a severe drought was experienced by much of the State of Texas and the Deep South, with some areas in the greater Houston area experiencing the worst drought in recorded history. The City had seen significant damage from the drought in the form of dead trees and initially estimated that there were approximately 5,000 hazardous trees to be removed.

The City engaged out team to provide our RecoveryTrac™ automated debris management system (ADMS) to execute the documentation for the project. The 25 handhelds and 2 DMS kits were mobilized and deployed to the project in under 48 hours.

Services provided by our team for this project included technical support of the ADMS equipment, ADMS training, development of several customized reports and quality control functions including:

- Hazardous tree removal documentation and reporting.
- Management of inbound quantity of debris to the City Debris Management Sites (DMS) and reporting.
- Management of haul-out operations to final disposal and reporting.
- Invoice reconciliation of contractor invoices.

Upon completing the work, our team provided the City with a supporting ADMS generated documentation package that includes load tickets, haul-out tickets, and reconciled tree removal contractor invoices.

Most recently the City activated our team in response to the unprecedented rain, flooding and severe weather that impacted the area throughout the month of May, 2015. Prior to receiving a notice to from the City, our team, with the support of our incident command staff, mobilized to the City and began hiring and training local staff. Within 72 hours we had placed 80 trained monitors in the field and had certified 100 City of Houston trucks in addition to the 100 contracted debris hauler vehicles. To date, our staff was monitoring the removal of over 600,000 cubic yards of C&D debris. We have used our ADMS system throughout the project and anticipate maximum reimbursement for the City.

**Hurricane Harvey (2017)**

Our team is currently responding to disaster relief efforts in Houston as a result of Hurricane Harvey, the most powerful storm to impact the Texas coast since Hurricane Carla in 1961. Our team remained on-site before, during, and after the impact of the storm, thus facilitating an immediate response and ramp-up for debris monitoring operations. Our team hired nearly 250 local monitors, and have monitored the removal of just over 5.46 Million yards of debris to-date. Tetra Tech will also manage the long-term financial recovery process for the City of Houston.
KEY FEATURES

- Program Management
- Monitoring
- Site Permitting
- Data Management
- Invoice Reconciliation
- Project Documentation
- FEMA/TDEM Audit Support

PROJECT DESCRIPTION

We are proud of our long-term relationship with Fort Bend County (County), whom we have assisted since 2007 in a variety of capacities, including debris management after Hurricane Ike in 2008, plan writing, and exercises, debris management in response to the 2016 flood event, and most recently Hurricane Harvey. We continue to stand “at the ready” in the event the County needs our service in the future. The following summary describes our projects with the County during this period.

Hurricane Harvey

On August 26, 2017 Hurricane Harvey made landfall as a Category 4 storm near Rockport, TX. After making landfall, Harvey’s winds rapidly weakened, but its speed also greatly slowed and the storm stalled just inland from
coastal Texas, resulting in several days of very heavy rain and massive flooding. Many locations in the area saw anywhere from 30 to 60 inches of rain. Multiple flash flood warnings were issued and many areas were evacuated. More than 48,000 homes across the state had damage and an estimated 30,000 residents were displaced.

Tetra Tech staff were in close communication with County officials throughout the event and quickly mobilized resources once it was safe to enter the area. Tetra Tech helped the County to complete damage assessments and come up with debris estimates and then transitioned into complete program management of the debris removal mission. To date Tetra Tech has monitored the removal of over 13,500 loads totaling over 458,000 cubic yards of debris.

2016 Floods

On May 30, 2016, a devastating flood impacted the County, causing damage and debris across the area. Tetra Tech was tasked by the County to provide program management and monitoring services. The Tetra Tech field team certified 28 hauling units that removed over 48,000 cubic yards of flood debris within the County. RecoveryTrac™ automated debris management system (ADMS) was used to monitor and document debris removal activities within the County and three other municipalities that requested the County’s assistance through an interlocal government agreement.

Additionally, with an estimated $15 million in damage, the County requested that our team assist with applying for, administering, and managing Federal Emergency Management Agency (FEMA) Public Assistance (PA) funding for categories A-G. Tetra Tech deployed a team of financial recovery consultants to assist the County in preparing project worksheets and maximizing grant funding for disaster response and recovery efforts. Our assistance after the flood however, has gone beyond FEMA PA consulting to assisting the County with the Hazard Mitigation Grants Program (HMGP) applications, identification of substantially damaged properties, staff augmentation for permits departments, and Emergency Operations Center (EOC) staff support.

Hurricane Ike

On September 12, 2008, Hurricane Ike impacted Fort Bend County with hurricane force winds and heavy rain causing damage and debris across the County. Tetra Tech’s pre-positioned contract with the County was activated and Tetra Tech mobilized a project management team to provide comprehensive disaster debris program management services.

Prior to Hurricane Ike, Tetra Tech worked with the County to develop a FEMA approved Disaster Debris Management Plan (DDMP). Over the next three months, our team worked closely with the County to executive procedures and directives outlined in County’s DDMP. Our team monitored and documented the removal of over 490,000 cubic yards of debris, 8,300 hazardous hangers, and 590 hazardous trees representing over $8.5 million in reimbursable debris removal costs.

In 2012, the County tasked our team with updating the County DDMP. The purpose of the 2012 DDMP update was to incorporate new guidance from FEMA, lessons learned from Hurricane Ike, and update other information as needed to help the County prepare for the next disaster event.
PROJECT DESCRIPTION

Tetra Tech assisted the Central Contra Costa Solid Waste Authority (DBA RecycleSmart) with the development of a regional disaster debris management plan (DDMP) as well as individual DDMPs for its six member jurisdictions. The purpose of the DDMPs was to provide the organizational structure, guidance, and standardized procedures for the clearance, removal, and disposal of debris caused by a major debris-generating event.

The project involved conducting a kickoff meeting with the project working group composed of representatives from RecycleSmart, representatives from each of the jurisdictions participating in the project, and representatives from the contract solid waste hauler. Meetings were then conducted with each jurisdiction to gather specific information regarding roles, responsibilities, and resources they would have available to respond to a debris-generating incident. Following the development of the seven draft plans by Tetra Tech, a meeting was held to get feedback from the working group to aid in finalizing the plan. After plan finalization, the plan was submitted to the State and FEMA for approval, and all the necessary approvals were granted. Tetra Tech has continued to work with some of the jurisdictions involved in the initial DDMP planning process on debris planning efforts.
KEY FEATURES

- Serves as a benchmark debris management plan in California and as a guidance document for entities within Los Angeles County
- Provides a concept of operations for the Los Angeles County Operational Area to manage debris operations
- Includes processes for enhanced coordination and collaboration between the County and its partners
- Includes a template for the 88 cities within the County to develop their specific plans
- Provides viable solutions for limited debris staging and disposal resources
- Addresses environmental, social, health, and safety concerns for debris operations.

PROJECT DESCRIPTION

Tetra Tech was retained by the County of Los Angeles Department of Public Works to develop a mass debris management plan as an annex to the Operational Area Emergency Response Plan. The Operational Area Mass Debris Management Plan (OA MDMP) addresses the County’s coordinated response to manage debris following a destructive event. The operational concepts reflected in the plan focus on potential large-scale disasters, which can generate significant volumes of debris and require an unusual or extraordinary response.

Tetra Tech conducted the project using the planning process outlined in the Federal Emergency Management Agency (FEMA) Comprehensive Planning Guide to maintain consistency with federal planning standards and achieve the project goals in the County’s desired timeline. The planning team included...
representatives from County, disaster management areas, cities, and private-sector partners from public works, environmental, public health, and emergency services.

The plan includes debris estimates and models for three major incident types; a concept of operations by phase and by function to conduct mass debris operations; and roles and responsibilities for local, state, federal, nonprofit, and private sector organizations. The plan also includes job aids, process flow charts, and checklists to identify and manage debris management sites, secure debris services vendors, and maximize federal disaster assistance programs. The project included a tabletop exercise for executive leadership to talk through a disaster scenario using the tools included in the plan.

The project was a tremendous success and has resulted in several municipalities using the plan and template to develop their specific debris management plans. Tetra Tech is currently developing a mass debris management plan for the unincorporated areas of Los Angeles County.
KEY FEATURES

- Worked with 792 individual homeowners to identify and rectify duplication of benefits.
- Recovered over $7,000,000 in eligible insurance proceeds.
- Documented the resolution of duplication of benefits concerns for over 85% of all participating homeowners who participated in the right of entry program.

PROJECT DESCRIPTION

The Butte Wildfire that impacted Calaveras County was one of the most destructive in California’s history. On behalf of the County, CalRecycle operated a program to remove fire damaged structures from private property. As with any private property demolition or debris removal program, the paperwork involved in the packet management of the individual properties is a tremendous undertaking. Tetra Tech was awarded a contract to assist the County with the cost recovery of available property insurance proceeds to cover the private property debris removal efforts.

Tetra Tech’s team conducted outreach to all homeowners to explain how duplication of benefits would be applied to the debris that was removed from their property. After this extensive phone, e-mail and postal mail outreach campaign, the team presented the cost of the debris removal as determined by CalRecycle to the homeowners and assisted them with inquiries from their insurance providers. Tetra Tech collected and tracked the insurance proceeds on behalf of the County and provided CalRecycle with a detailed report on the final status of all properties that participated in the program.
Comprehensive Post-Disaster Grant Consulting
2016 Floods

1 Ascension Parish, Louisiana

CLIENT
Ascension Parish

LOCATION
Louisiana

DURATION
October 2016 - Ongoing

REFERENCE
Jerome Fournier, Director
615 E. Worthey Road
Gonzales, LA 70737
Phone: (225) 450-1371
Fax: (225) 450-1352
JFournier@apgov.us

KEY FEATURES

- FEMA PA Program Management
- Force Account Reconciliation
- Floodplain Management Assistance

PROJECT DESCRIPTION

In August 2016, prolonged rainfall in southern parts of the U.S. state of Louisiana resulted in catastrophic flooding that submerged thousands of houses and businesses. A mesoscale convective system remained nearly stationary, and as a result, torrential downpours occurred in the areas surrounding Baton Rouge and Lafayette. Rainfall totals exceeded nearly 2 feet in some areas and accumulations peaked at 31.39 in watersheds just northeast of Baton Rouge. The "no-name storm" dumped three times as much rain on Louisiana as Hurricane Katrina. It dropped the equivalent of 7.1 trillion gallons of water—enough to fill Lake Pontchartrain nearly four times. Many rivers and waterways, particularly the Amite and Comite Rivers, reached record levels in Ascension Parish. Nearly one-third of all homes—approximately 15,000 structures—in Ascension Parish were flooded after a levee along the Amite River was overtopped.

Ascension Parish had never experienced a natural disaster on this scale. Due to its inland location, the Parish has been spared the brunt of hurricane-related storm surge. Faced with the unprecedented magnitude of the flooding and aftermath, the Parish decided to seek outside disaster recovery assistance. To these ends, the Parish engaged Tetra Tech through a competitively procured contract to complete a range of disaster recovery tasks, including force account reconciliation, sub-surface road and bridge testing, FEMA PA program management, and Floodplain Management assistance. Upon contract award in early October 2016, Tetra Tech
immediately deployed a team of subject matter experts to Ascension Parish to plan and execute these tasks. One of the most difficult tasks following the disaster emergency response and debris removal is organizing and reconciling force account labor, equipment, and material records for FEMA reimbursement. Tetra Tech’s proprietary RecoveryTrac™ has been designed to efficiently manage and submit these records on behalf of clients. In the case of Ascension Parish, Tetra Tech deployed an on-site team coupled with a centralized data center to quickly turn a disorganized mass of written daily force account records into a digital database worth nearly $4 million in FEMA reimbursements.

In addition to emergency response costs, the Parish experienced severe damage to the transportation infrastructure. While surface damage was evident in places, the real concern was the effects of cascading and long-standing water on road and bridge subbase materials. This type of damage is very difficult for FEMA to reimburse, however, due to the lack of immediate effects on the road and bridge surface. If the damage cannot be seen and linked to the event, FEMA will rarely obligate funds for repair. To prove the damage, Tetra Tech deployed two unique technologies: falling weight deflectometry (FWD) and ground penetrating radar (GPR). These two methods can be completed on a mass scale inexpensively and without destruction of the road surface. Tetra Tech then used pinpoint borings to back up the testing. This approach convincingly proved the presence of road and bridge subbase damage.

FEMA will reimburse eligible emergency response and repair costs through the PA Program. Navigating the PA Program requires experience and knowledge of the rules and regulations. Tetra Tech quickly organized the damage into the seven categories of eligible work and began completing site visits to catalog the damage. Next, Tetra Tech deployed engineers to design and estimate the repairs to include hazard mitigation. Finally, Tetra Tech created customized FEMA Submission Packages and organized them on a dedicated SharePoint server for long-term record retention.

Additionally, Tetra Tech assisted the Parish with the daunting task of enforcing its Floodplain Ordinance following the flooding of up to 15,000 structures. FEMA inspected over 10,000 homes and businesses for substantial damage and turned the raw data over to the Parish. Tetra Tech then designed a custom database and assisted with mailing substantial damage notifications to the owners of all the inspected structures. In addition, Tetra Tech’s database included a contact log to track all communications with affected homeowners through a Flood Hotline that was set up and maintained by Tetra Tech. Finally, Tetra Tech maintained an on-site staff of two Certified Floodplain Managers throughout this process to interact with homeowners and to provide high-level technical assistance to Parish staff.
Disaster Program and Grant Management
Severe Storms and Tornado Outbreak

CLIENT
City of Albany and Dougherty County, GA

LOCATION
Georgia

DURATION
January 2017 – Ongoing

REFERENCE
Michael McCoy
222 Pine Avenue
PO Box 1827
Albany, GA 31702-1827
(229) 431-2193
MMcCoy@dougherty.ga.us

KEY FEATURES
- Disaster Debris Monitoring
- Financial Recovery Services/Project Worksheet Development
- Long-term Recovery Planning

PROJECT DESCRIPTION

On the evening of January 2, 2017, a severe storm spanning several EF-1 tornadoes produced a 3 to 4 mile swath of destruction. Winds reached 85 mph across the northern half of the City of Albany, causing widespread damage across the city. The damage survey team found hundreds of snapped and/or uprooted trees, damage to structures and buildings, and occasional instances of extensive damage to wide-span metal roofs in areas throughout the city. Much of the severe structural damage surveyed was a result of trees falling onto structures and powerlines, where the roads are canopied by old oak trees and FEMA declared DR-4294-GA.

On January 22, while recovery from the first storm system was still ongoing, a massive EF-3 tornado was responsible for approximately $40 million in damages across the City of Albany and Dougherty County, scattering trees and leveling residencies in its wake, continuing for 80 miles across southern Georgia. This system resulted in DR-4297-GA for Dougherty County, GA and 21 other counties in Georgia.

Tetra Tech was retained under two separate immediate work solicitations issued by the City and County. Our team was on-site in a matter of hours to begin in-person consultations with City and County staff and began training staff for immediate deployment.

Tetra Tech continues to provide ongoing debris monitoring for both the City of Albany and Dougherty County, GA along with financial recovery services, helping both City and County to gather the documentation for their project worksheets for both their emergency protective measures and all permanent repairs needed. The two January 2017 storm events caused substantial impacts on public facilities and infrastructure. Dougherty County recorded
damages to public facilities and infrastructure after each of these events. Tetra Tech is supporting the project worksheet grant application process for costs of over $25 million for both storm events.

In addition, the Tetra Tech team guided Dougherty County through a long-term recovery planning process. This included organizing planning meetings for recovery stakeholders, gathering disaster related data, interviewing survivors, and reviewing current and proposed recovery plans and efforts. This process was solidified by Tetra Tech producing a Long Term Recovery Plan that serves as the roadmap for Dougherty County to recover stronger and more resilient.
Technical Approach

Project Understanding

Tetra Tech implements a best practices approach to disaster debris monitoring when planning for and responding to debris-generating events. Our team has gained unparalleled experience working on many of the largest Federal Emergency Management Agency (FEMA) Public Assistance (PA) eligible projects, including responses to Hurricanes Irma, Harvey, Sandy, Ike, Wilma, and Katrina. Our team has assisted more local governments with debris monitoring efforts following natural disasters than any other firm in the nation. Collectively, we have overseen and managed the recovery of over 103 million cubic yards (CYs) of debris on behalf of over 300 public sector clients, resulting in excess of $6 billion in reimbursable costs to our clients.

In addition, our understanding of the Georgia Department of Transportation, FEMA, Federal Highway Administration (FHWA), U.S. Department of Housing and Urban Development (HUD), Natural Resources Conservation Service (NRCS), and other reimbursement agencies’ requirements for eligibility, documentation, and reimbursement will help Dougherty County (County) to receive the maximum reimbursement allowed following a disaster.

Tetra Tech has carefully reviewed the scope of work requested in the request for proposal (RFP) and can assure the County that we have the extensive experience, understanding, and knowledge of the County to successfully perform all aspects of the scope of work. We are aware of the magnitude and importance of organizing and directing the necessary resources to define and carry out the tasks associated with the scope of work, and we are committed to continuing to provide a consistent and coordinated team to perform these services upon activation. Our project team will dedicate themselves to the County’s needs throughout the year, not just during times of activation.

Our technical approach captures our unique capabilities, including the following:

- Our team’s ability to provide end-to-end services in disaster preparedness, emergency management, and post-event response and recovery to help state and local governments plan for and recover from natural and human-caused disasters
- A project management team that is recognized for its ability to respond quickly to a broad range of emergencies, allowing our clients to return to the business of running their day-to-day operations
- A focus on local hires and the ability to hire, train, and support a local team to oversee the work being completed in their own communities, with local hires being fully supported with technology and a team of dedicated managers
- Detailed reporting systems and mapping capabilities that are driven by our RecoveryTrac™ automated debris management system (ADMS) technology, which will be tailored to the County’s data needs

Project Management Methodology

Our methodology of project management governs both the planning and execution of all project work. The strategy, structure, and staffing requirements for the project organization are based on client expectations and the desired outcome. Tetra Tech’s project management methodology enables our team to achieve success despite the unpredictable nature of disasters. Our methodology addresses the project management areas shown in the exhibit below.
These management areas are administered using the established project management procedures and protocols we have developed and refined over the years and numerous disaster activations. Our interactions with our clients are based on best practices that balance the need for direction of operational priority, issue resolution, and relevant information with considerations for the time availability of the client.

Procedures and Protocols

Each phase of Tetra Tech project management has documented procedures that govern the execution to provide scalable, consistent, high-quality results. We use a systematic approach with frequent in-process quality checks to execute our project processes. Our general project approach includes tasks in each of the following phases:

- **Initiation (Pre-Event)**
  - Annual coordination – Conduct annual trainings and meetings to plan and test execution protocols and identify potential risks/mitigation opportunities.
  - Contract review – Review contracts for understanding of contractual requirements and possible cost savings.
  - Communication systems checks – Verify that communication systems function as designed and reporting needs are understood.

- **Mobilization (Immediately Prior to and Following Event)**
  - Scope, tasking, and budget – Determine services required, performance metrics, schedule, and budget constraints.
  - Deployment and resource requirements – Develop work plan and safety plans. Update risk matrix for work plan specifics.
  - Staging of equipment and resources – Coordinate movement of required support equipment/supplies and setup of communication and information systems.

- **Execution (Post-Event)**
  - On-boarding and training staff – Conduct suitability for work checks and provide targeted training program based on work and safety plans.
  - Monitoring – Supervise field operations, quality assurance/quality control (QA/QC) in-process checks, prioritization of resource management, and project reporting.
Communication – Conduct status meetings and communicate project metrics and other pertinent information.

Issue tracking/resolution – Conduct issue identification, staff communication, and resolution tracking.

Closeout (Post-Event)

Documentation deliverable – Produce and deliver required documentation to support auditing.

Demobilization – Manage reduction in staff, post-use maintenance, and movement of equipment and supplies.

Audit support – Provide continued availability of information systems to support closeout information requests.

Client Interaction

Coordinated project communications coupled with accurate information enables effective decision-making. Our implementation of this provides our clients with the benefits:

Common Operating Picture

Tetra Tech’s real-time data sharing information portal allows the client, the debris removal contractors, and the monitoring firm to access the same accurate information, which markedly improves their ability to execute efficiently. The result is a much more efficient completion of project objectives.

Interoperability

The information portability across disparate systems is the true power of Tetra Tech’s client interaction and communication system. It allows integration with existing systems to provide better understanding and coordination among organizations.

Reliability, Scalability, and Portability

Documented procedures and protocols enable scalability without loss in fidelity and quality of work product. When in-process quality controls and team cross-training are added, the ability to tolerate faults without affecting outcome is substantially increased.

Resiliency and Redundancy

Experience operating in disasters enables Tetra Tech to design systems and processes to be able to withstand loss of infrastructure and key personnel yet maintain client expectations for information. This is accomplished not only in technology design, but in effective procedural protocols and our risk mitigation component.

Tetra Tech’s project managers use methods specifically aimed at increasing the success of the team by engaging in **collaborative problem solving and issue resolution**. By approaching others with professional mutual respect, our project managers form relationships that allow close coordination between the client and other contractors, ultimately improving communication, coordination, and efficiency of the project.

Operational Schedule

Based on Tetra Tech’s understanding of the County and their needs, we have developed a draft mobilization schedule with key project management tasks in chronological order. The timeline is based on a typical activation; however, Tetra Tech is prepared to work with the County to adjust the timing of the specific elements below to meet the County’s needs.

Prior to an event with warning (such as a hurricane), our team will begin monitoring the landfall of any tropical system at H-96 and will coordinate via conference call with the County. Following an event without warning (such as tornadoes or flooding), Tetra Tech will begin response at H-0.
### Exhibit 4-2: Disaster Debris-Generating Event Operational Plan

<table>
<thead>
<tr>
<th>Time</th>
<th>Task</th>
<th>Deliverables/Milestones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Preparedness</strong></td>
<td></td>
</tr>
</tbody>
</table>
|        | **Pre-event** (normal conditions)   | • Conduct annual pre-event meeting with the County and debris contractor  
                                              • Review the County’s disaster recovery contracts for FEMA compliance  
                                              • Update critical documents and files, including any geographic information systems (GIS) files  
                                              • Contact the County and initiate daily conference call  
                                              • Determine resource requirements from debris model  
                                              • Review the County’s emergency policies and contracts  
                                              • Establish contact with the County’s debris hauler and ensure Tetra Tech has the most up to date copy of the debris hauler contract  
                                              • Review possible critical areas of concern, hospitals, major transit systems, historic districts, environmental issues, and critical infrastructure  
                                              • Review protocols for private property, gated communities, and public drop-off sites  
                                              • Review debris management site (DMS) locations and follow up with the Georgia Department of Natural Resources (GDNR) on permitting procedures  
                                              • Estimate equipment requirements and DMS capacity to haul and stage debris  
                                              • Prepare ADMS technology for mobilization  
                                              • Conduct regular meetings with County staff as requested  
                                              • Confirm staging location and begin mobilization of resources  
                                              • Mobilize project assets and begin base camp coordination and logistics (food, water, housing, etc.) with the County and Tetra Tech headquarters (if necessary)  
                                              • Review list of priority roads and the operational plan  
                                              • Obtain GIS files for municipalities that the County will assist with debris removal  
                                              • Continue to update and gather updates from the County’s debris hauler  
                                              • Save all critical documents and files to the network drive, USB drive, and laptop hard drive  
                                              • Certify emergency road clearance equipment (in coordination with the County’s debris hauler)  
                                              • Determine emergency road clearance priorities  |
| H-96   | Review capabilities and resources    | • Review the County’s disaster recovery contracts for FEMA compliance  
                                              • Update critical documents and files, including any geographic information systems (GIS) files  
                                              • Contact the County and initiate daily conference call  
                                              • Determine resource requirements from debris model  
                                              • Review the County’s emergency policies and contracts  
                                              • Establish contact with the County’s debris hauler and ensure Tetra Tech has the most up to date copy of the debris hauler contract  
                                              • Review possible critical areas of concern, hospitals, major transit systems, historic districts, environmental issues, and critical infrastructure  
                                              • Review protocols for private property, gated communities, and public drop-off sites  
                                              • Review debris management site (DMS) locations and follow up with the Georgia Department of Natural Resources (GDNR) on permitting procedures  
                                              • Estimate equipment requirements and DMS capacity to haul and stage debris  
                                              • Prepare ADMS technology for mobilization  
                                              • Conduct regular meetings with County staff as requested  
                                              • Confirm staging location and begin mobilization of resources  
                                              • Mobilize project assets and begin base camp coordination and logistics (food, water, housing, etc.) with the County and Tetra Tech headquarters (if necessary)  
                                              • Review list of priority roads and the operational plan  
                                              • Obtain GIS files for municipalities that the County will assist with debris removal  
                                              • Continue to update and gather updates from the County’s debris hauler  |
| H-72   | Execute responsibilities and activate contracts | • Review the County’s disaster recovery contracts for FEMA compliance  
                                              • Update critical documents and files, including any geographic information systems (GIS) files  
                                              • Contact the County and initiate daily conference call  
                                              • Determine resource requirements from debris model  
                                              • Review the County’s emergency policies and contracts  
                                              • Establish contact with the County’s debris hauler and ensure Tetra Tech has the most up to date copy of the debris hauler contract  
                                              • Review possible critical areas of concern, hospitals, major transit systems, historic districts, environmental issues, and critical infrastructure  
                                              • Review protocols for private property, gated communities, and public drop-off sites  
                                              • Review debris management site (DMS) locations and follow up with the Georgia Department of Natural Resources (GDNR) on permitting procedures  
                                              • Estimate equipment requirements and DMS capacity to haul and stage debris  
                                              • Prepare ADMS technology for mobilization  
                                              • Conduct regular meetings with County staff as requested  
                                              • Confirm staging location and begin mobilization of resources  
                                              • Mobilize project assets and begin base camp coordination and logistics (food, water, housing, etc.) with the County and Tetra Tech headquarters (if necessary)  
                                              • Review list of priority roads and the operational plan  
                                              • Obtain GIS files for municipalities that the County will assist with debris removal  
                                              • Continue to update and gather updates from the County’s debris hauler  |
| H-48   | Monitor storm track and continue preparations | • Review the County’s disaster recovery contracts for FEMA compliance  
                                              • Update critical documents and files, including any geographic information systems (GIS) files  
                                              • Contact the County and initiate daily conference call  
                                              • Determine resource requirements from debris model  
                                              • Review the County’s emergency policies and contracts  
                                              • Establish contact with the County’s debris hauler and ensure Tetra Tech has the most up to date copy of the debris hauler contract  
                                              • Review possible critical areas of concern, hospitals, major transit systems, historic districts, environmental issues, and critical infrastructure  
                                              • Review protocols for private property, gated communities, and public drop-off sites  
                                              • Review debris management site (DMS) locations and follow up with the Georgia Department of Natural Resources (GDNR) on permitting procedures  
                                              • Estimate equipment requirements and DMS capacity to haul and stage debris  
                                              • Prepare ADMS technology for mobilization  
                                              • Conduct regular meetings with County staff as requested  
                                              • Confirm staging location and begin mobilization of resources  
                                              • Mobilize project assets and begin base camp coordination and logistics (food, water, housing, etc.) with the County and Tetra Tech headquarters (if necessary)  
                                              • Review list of priority roads and the operational plan  
                                              • Obtain GIS files for municipalities that the County will assist with debris removal  
                                              • Continue to update and gather updates from the County’s debris hauler  |
| H-24   | Prepare final reports                | • Review the County’s disaster recovery contracts for FEMA compliance  
                                              • Update critical documents and files, including any geographic information systems (GIS) files  
                                              • Contact the County and initiate daily conference call  
                                              • Determine resource requirements from debris model  
                                              • Review the County’s emergency policies and contracts  
                                              • Establish contact with the County’s debris hauler and ensure Tetra Tech has the most up to date copy of the debris hauler contract  
                                              • Review possible critical areas of concern, hospitals, major transit systems, historic districts, environmental issues, and critical infrastructure  
                                              • Review protocols for private property, gated communities, and public drop-off sites  
                                              • Review debris management site (DMS) locations and follow up with the Georgia Department of Natural Resources (GDNR) on permitting procedures  
                                              • Estimate equipment requirements and DMS capacity to haul and stage debris  
                                              • Prepare ADMS technology for mobilization  
                                              • Conduct regular meetings with County staff as requested  
                                              • Confirm staging location and begin mobilization of resources  
                                              • Mobilize project assets and begin base camp coordination and logistics (food, water, housing, etc.) with the County and Tetra Tech headquarters (if necessary)  
                                              • Review list of priority roads and the operational plan  
                                              • Obtain GIS files for municipalities that the County will assist with debris removal  
                                              • Continue to update and gather updates from the County’s debris hauler  |
| H-0    | ARRIVAL OF NOTICE EVENT/INITIATE RESPONSE TO NO-NOTICE EVENT |                                                                                                                                                                                                                      |
| H+24   | Emergency push                      | • Receive notice to proceed with not to exceed  
                                              • Begin emergency push  
                                              • Maintain time and materials (T&M) logs for push equipment  
                                              • Coordinate with the County to conduct preliminary damage assessments and road closures (if requested)  
                                              • Supervisors report to pre-designated locations and prep staff on project  
                                              • Begin establishing ADMS infrastructure  
                                              • Begin recruiting and training monitors, project coordinators, and data staff  
                                              • Initiate opening of DMS locations  |
<table>
<thead>
<tr>
<th>Time</th>
<th>Task</th>
<th>Deliverables/Milestones</th>
</tr>
</thead>
<tbody>
<tr>
<td>H +48</td>
<td><strong>Emergency push/damage assessment</strong></td>
<td>• Follow up with GDNR on debris permits (if required)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Work with the City and Dougherty County to establish public information protocols to respond to concerns and comments</td>
</tr>
<tr>
<td>H +72</td>
<td><strong>Disaster debris vehicle certification/site preparation</strong></td>
<td>• Continue emergency push</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Continue preliminary damage assessment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Develop debris cost estimate required for presidential disaster declaration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Develop operational plan for disaster-specific issues</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Refine health and safety plan for disaster-specific issues</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Begin hauling truck certification</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Install ADMS tower monitor infrastructure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Train monitors on policies, ADMS, and safety</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Open public drop-off sites as requested</td>
</tr>
<tr>
<td>H +96</td>
<td><strong>Begin debris collection monitoring</strong></td>
<td>• Assign monitors to trucks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Assign supervisors to monitors</td>
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<tr>
<td></td>
<td></td>
<td>• Hold morning and afternoon meeting with County staff and debris hauler</td>
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<tr>
<td></td>
<td></td>
<td>• Implement QA/QC procedures</td>
</tr>
</tbody>
</table>

**Recovery**

| Week 1+ | **Right-of-way (ROW) debris collection monitoring** | • Continue ROW collection                                                               |
|         |                                                   | • Address household hazardous waste (HHW) issues (if critical)                           |
|         |                                                   | • Issue daily reports/GIS maps                                                          |
|         |                                                   | • Hold daily meetings with the County, hauler, and/or State/FEMA as required            |
|         |                                                   | • Staff citizens debris management hotline (if requested)                               |
|         |                                                   | • Define supplemental programs required (private roads, HHW) and prepare eligibility request |
| Week 1+ | **Data management and invoice reconciliation**   | • Provide ADMS reports and real-time monitoring access                                   |
|         |                                                   | • Establish client GeoPortal to provide insight into project progress                    |
|         |                                                   | • Review truck metrics provided by RecoveryTrac™                                       |
|         |                                                   | • Initiate weekly reconciliation                                                       |
|         |                                                   | • Initial payment recommendations with retainage                                        |
| Week 1+ | **Reimbursement support/grant administration (FEMA, NRCS)** | • Prepare damage/cost estimates                                                        |
|         |                                                   | • Compile supporting documentation (debris permits, debris contracts, etc.)            |
|         |                                                   | • Liaise with FEMA Region 4, Georgia Emergency Management Agency (GEMA), U.S. Army Corps of Engineers (USACE), etc. |
| Week 2+ | **Special projects (if required)**              | • Waterway debris removal                                                               |
|         |                                                   | • Private property debris removal (PPDR)                                               |
|         |                                                   | • Public drop-off sites                                                                |
|         |                                                   | • HHW                                                                                  |
|         |                                                   | • Identify areas of operational concern and make disaster-specific recommendations to FEMA to improve efficiency |
| Week 3+ | **Financial recovery assistance staff engaged (if requested)** | • Facilitate kickoff meetings with primary stakeholders                                 |
|         |                                                   | • Draft a PA work plan under new delivery model                                        |
|         |                                                   | • Conclude/review preliminary damage assessments                                        |
|         |                                                   | • Gather documentation for project worksheet (PW) development and submit through GrantsPortal |
Organizational Structure

Tetra Tech’s project team can scale as needed, coordinate response, establish common processes for planning and managing resources, and adapt organizational structure to match the needs and complexities of projects.

The proposed organization/management structure for activation within County is based on industry best practices and an understanding of geography and the distinct management responsibilities of each position. Exhibit 4-3 shows our chain of command structure, along with associated responsibilities and relationships for key personnel.

Exhibit 4-3: Chain of Command
- **Project Manager.** Our project manager, will be responsible for implementation of specific programs tasked by the County through purchase orders. He is also responsible for program oversight, task order preparation, forecasting, and quality assurance. The project manager will serve as a consistent point of contact for the County’s debris managers and will provide a bridge between any preparedness and post-disaster response activities.

- **Operations Manager.** Our operations manager will be responsible for the implementation of Tetra Tech’s work plans, dispatching field personnel, staffing, safety, field logistics, and training. He will oversee collection and disposal monitoring operations and coordinate daily with the project manager. Will also function as the project health and safety manager.

- **Field Supervisors.** During debris removal operations, our lead field supervisor, is responsible for the quality control of debris site/tower monitors, field coordinators, and project inspectors and verifying that documentation that is being captured is FEMA-compliant. They will verify that monitors retain their training and will respond to issues as they occur in the field. They will also be tasked with the management of locally hired additional supervisors and field monitors, project timeline, and current tasking.

- **Field Monitors.** Locally hired field monitors will use RecoveryTrac™ to track and record the metrics used to manage the project and document debris being collected from County roadways. Field monitors will also use RecoveryTrac™ to document missed piles, ineligible piles, homeowner interaction, safety concerns, contractor equipment, contractor damages and more. Field monitors will report to our lead field supervisor, who will be held accountable for their actions.

- **Debris Site/Tower Monitors.** Locally hired debris site/tower monitors are responsible for tracking and documenting debris as it enters a DMS or final disposal site using RecoveryTrac™. They will be making volumetric load calls using the methodology provided in our proposal. Debris site/tower monitors will also be required to keep backup logs and assist in truck certification as needed.

- **Residential Drop-off Site Monitors.** Locally hired residential drop-off site monitors are responsible for monitoring inbound citizen hurricane debris to approved citizen disposal locations. In addition, they coordinate the transportation of hurricane debris from the public disposal site to the closest DMS. All residential drop-off site monitors will report to our lead field supervisor.

- **Project Coordinator.** Locally hired project coordinators will be responsible for managing all staffing-related issues, such as daily staffing levels, time and expense reporting, obtaining field supplies, scheduling, and other coordination duties.

- **Administrative Assistants.** Locally hired administrative assistants are responsible for proper time-keeping for all project employees, which includes time sheets and monitor log management. They also aid in project scheduling, assist home owners with inquiries regarding the private property debris removal program, and facilitate the homeowner application process.

- **ADMS Ticketing Specialist.** As ADMS ticketing specialist, will oversee QA/QC of the project, manage all real-time reporting collected by RecoveryTrac™, and oversee our virtual command center to audit project information as it is collected, which prevents ticket errors, reduces invoice reconciliation timeframes, prevents fraud, and establishes a sound dataset for future audits.

- **Data Manager.** Our data manager, will be responsible for multiple functions during debris removal activities, including reporting and QA/QC of ADMS documentation in the field along with storing the documentation in preparation for future audits. He will validate documentation and metrics being reported as accurate and on-schedule.

- **Billing/Invoice Analyst.** As billing/invoice analyst, Paris will work with our data manager to enter, tabulate, and organize collection and disposal data into FEMA-required formats. She will develop regular updates on the quantities and types of debris collected and will provide QA/QC processes for the review and verification of field and debris contractor-provided data in support of invoices.
Load Ticket Data Entry Clerks. Locally hired load ticket/data entry clerks will be responsible for entering load tickets and other supporting documentation into RecoveryTrac™ if paper tickets are used. If utilizing the RecoveryTrac™, there will be no need for the load ticket data entry clerk position.

Emergency Push Period

The emergency push period begins immediately following an event. Debris removal contractors coordinate with County crews to clear blocked roadways for emergency vehicle passage. Tetra Tech is prepared to assist during the push period by providing the following services:

- Documenting blocked roads that require immediate clearance
- Administering the sign-in and sign-out of labor and equipment to track T&M charges
- Helping staff maintain maps or databases to track road clearance progress and other essential tasks, as requested
- Maintaining documentation for reimbursement of emergency push work

Vehicle Certification

Tetra Tech has a proven vehicle certification procedure that complies with FEMA guidelines and results in maximum reimbursement for our clients. Tetra Tech’s ADMS technology, RecoveryTrac™, will be used to electronically certify all trucks used in an activation. Benefits of using the mobile truck certification application include **electronic volume calculations**, instantaneous upload to the RecoveryTrac™ database to allow immediate QA/QC checks to verify the truck certification calculations, and automated photo-matching of truck and driver photographs to the truck. The truck certification application allows us to complete truck certifications in **30% less time than with a paper-based system.**

Exhibit 4-4: Truck Audit Report

Our disaster debris vehicle certification procedure includes the following:

- Generation of unique truck numbers for contractor crews and equipment
- Automated truck certification form, which includes the latest FEMA guidelines on truck certification documentation and volume calculations and a bar code for automated ticket scanning
Special vehicle notations on the truck certification form and vehicle placard, which inform tower monitors of sideboards, tailgates, or other modifications, thus discouraging debris removal contractors from fraudulently altering vehicles after certification

- Photographs of vehicles, vehicle cavities, and drivers
- Periodic spot checks and recertification of trucks to identify trucks altered after initial certification

### Right-of-Way Collection Reporting

Our ADMS technology allows the County to view debris collection points, truck locations, monitor locations, damage, incidents, and daily metrics at any given time. The additional geospatial reporting capabilities are made possible through the Tetra Tech approach to field monitoring.

At each debris collection point, the field collection monitor marks the waypoint or location of the debris pile to collect GPS coordinates. The map below displays the waypoints associated with each collection ticket issued in the field. The waypoint collection report is updated in real time and can be filtered by date.

**Exhibit 4-5: Waypoint Collection/Hazardous Tree Maps**

An additional feature of our ADMS technology is that each handheld device reports back the location of the device regularly. By leveraging this location information, Tetra Tech can view monitor locations and truck locations in real time, as demonstrated in Exhibits 4-6 and 4-7.

**Exhibit 4-6: Monitoring Locations**

**Exhibit 4-7: Truck Locations**
Field Operations

The Tetra Tech debris monitoring program includes the following:

- **Operations.** Field collection monitors report to a staging location prior to the commencement of daily operations for a briefing to be given by the project manager or field supervisors and the distribution of safety gear (for example, caution lights or safety vests), map books, and ADMS handheld devices and debris tickets.

- **Deployment.** A field monitor is assigned to one loading unit or to a leaner and hanger removal crew. In instances where leaner and hanger crews have multiple saw operators, the cut crew can request the addition of a monitor (this typically happens when a cut crew can complete over 60 hazard removals per day).

- **Field Supervision.** Responsibilities of the field supervisor monitor include training, QA/QC of work being performed, verifying load ticket accuracy, and responding to field monitor and debris contractor issues in the field.

- **Responsibilities.** Field monitors will verify the proper loading of debris into the debris removal contractor’s certified loading container. Monitors will document that contractors and their subcontractors adhere to local, state, and federal regulations and that they are working safely and efficiently. Field monitors often notice inconsistencies with debris removal procedures and submit them to their supervisors. If a field monitor feels there is justifiable need to stop operations, the monitor is instructed to refrain from issuing a ticket until the debris hauler supervisor and a Tetra Tech supervisor can be called in to determine the appropriate action.

- **Work Scheduling.** Tetra Tech will coordinate with the debris removal contractor’s project manager to estimate the number of field monitors that will be required for the following day. To be responsive and mitigate overstaffing, Tetra Tech requests that the debris hauler release the next day’s schedule by 5 p.m. This will verify the appropriate number of field monitors is dispatched.

- **Daily Closeout.** At the close of operations each day, all collection and disposal monitors will report to the staging area to clock out and turn in their ADMS handheld devices.

- **Contractor Completion.** Tetra Tech will assist the County in completing the project efficiently and within the timelines set forth in the RFP. There are many aspects of debris removal that are outside of the monitoring firm’s control but will still need to be managed. Tetra Tech will assist the County with managing these goals, including the following:
  - The ability of a debris contractor to respond with sufficient equipment will affect the proposed schedule. Tetra Tech will provide burn rate analysis to verify the proper equipment is being provided. This will be adjusted as more accurate debris estimates are available.
  - Leapfrogging by the contractor (cherry picking work being performed) is detrimental to the efficiency of operations and will be reported.
  - Invoices by the contractor need to be produced in a timely manner so that Tetra Tech can reconcile in a timely manner. Tetra Tech will work to make the contractors aware of an appropriate time frame for invoicing and will communicate with the County if deadlines are not being met.
  - Deadlines for collecting debris are set to correspond with the work schedule that is based on estimated work to be completed. As damage estimates become more accurate (as is typical throughout the process), Tetra Tech will work with County officials to adjust the timeline to appropriately reflect the changing estimates.

In addition, there are events out of the control of all parties that could negatively impact a debris removal operation (for example, inclement weather). In the event any of these circumstances occur, Tetra Tech will work closely with the County to refine timelines and support an expeditious recovery for the County.
Debris Management Site Monitoring

Response to debris-generating events requires locating DMS, emergency permitting of DMS (including debris burning and State regulatory permits), baseline soil testing before the DMS are opened and as part of remediation process, and recycling and diversion initiatives once the reduced vegetative debris is collected and processed. Tetra Tech has had significant experience assisting local governments in Georgia with pre-permitting DMS before a disaster event as well as post-disaster permitting.

As DMS are activated, Tetra Tech will provide a minimum of two disposal monitors per site. Staffing numbers may also increase or decrease, depending on site layout. Tetra Tech verifies hauler passes through the DMS and documentation remains accurate and complete with several daily audits by project operations managers and supervisors to verify load call accuracy and consistency. Specific documentation kept by Tetra Tech DMS disposal monitors includes the following:

- **Load Ticket.** The load ticket is used to document that debris removal complies with all FEMA requirements.
- **Disposal Monitor Log.** The disposal monitor log is used as backup documentation as required by FEMA.
- **Scale Manifest Tickets.** If the debris hauling contract is weight-based, Tetra Tech will digitize and catalog tickets generated by the existing scales at the County’s DMS.
- **Incident Report.** Tetra Tech will document property damage, arguments, unsafe practices, and injuries.
- **Photographic Documentation.** Tetra Tech disposal supervisors will photograph a DMS frequently to create a visual timeline of the site.
- **QA/QC of Field Tickets.** Disposal monitors review and verify collection monitors’ work in the field.

**Exhibit 4-8: Load Call Estimate Examples**

<table>
<thead>
<tr>
<th>Example</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>The mounded portion of the load offsets the areas where the load drops below the fill line. Because the load includes light and medium debris, the load percentage estimate is 45 percent.</td>
</tr>
<tr>
<td>B</td>
<td>The mounded portion of the load offsets the areas where the load drops below the fill line. Because the load includes light and medium debris, the load percentage estimate is 70 percent.</td>
</tr>
<tr>
<td>C</td>
<td>The mounded portion at the front of the load offsets the area in the back where the load drops below the fill line. Because the load includes light and medium debris, the load percentage estimate is 85 percent.</td>
</tr>
<tr>
<td>D</td>
<td>The mounded portion of the load offsets the areas where the load drops below the fill line. Because the load includes light and medium debris, the load percentage estimate is 95 percent.</td>
</tr>
</tbody>
</table>
Residential Drop-Off Sites

To provide documentation to FEMA that supports reimbursement of debris brought by the County's residents to residential drop-off sites and proves the debris is not commercial, the County must monitor each site and screen citizens who enter. Tetra Tech is prepared to support the County by assisting with this task if needed.

Quality Assurance/Quality Control Program

Implementing comprehensive QA/QC protocols and technologies is critical to a debris monitoring effort. Proper QA/QC protocols reduce the amount of work associated with back-end data management, reduce invoice reconciliation timeframes, prevent fraud, and establish a sound dataset for future audits. Throughout years of experience assisting local governments with recovering from disasters and the subsequent audits, Tetra Tech has developed industry-leading QA/QC standards and protocols. The use of our ADMS technology expedites the QA/QC process and drastically reduces ticket errors that can result from traditional manual (paper and pen) debris monitoring operations. For example, monitors no longer have to carry a GPS device and manually write in GPS coordinates because this is logged automatically.

Due to the real-time information collected by our ADMS technology, Tetra Tech can establish a virtual command center to audit project information during the collection process and correct issues as they appear. For example, our ADMS technology provides reporting and tracking on any missed debris piles. This allows Tetra Tech to improve our responsiveness to resident complaints and provide real-time tracking tools to manage removal of these missed piles to the County.

Exhibit 4-9: Missed Piles Tracking
Fraud Prevention

Several practices are used to prevent debris haulers from committing fraud both in the field and remotely by real-time data monitoring. At DMS locations, Tetra Tech disposal monitors or supervisors will randomly recertify a previously certified truck. Recalculating the truck hauling capacity helps verify that the original work was accurate and that nothing has been altered since certification. Additionally, ADMS technology displays a photo of the truck as a ticket is scanned by the disposal monitor. This makes it nearly impossible for a debris hauler to switch truck certifications between trucks or alter their truck configuration (i.e., remove sideboards).

Fraud prevention reports are run daily to identify data anomalies that may be a result of fraud. The load call report shows all load calls for a given day/monitor to confirm no trucks are receiving extraordinarily high load calls. The load ticket report and unit rate daily ticket report determine if monitors are issuing an excessive number of tickets in relation to the average number of tickets per day. The RecoveryTrac™ system includes built-in project controls that alert the data manager to anomalies that may be indicative of fraud. For example, the following data features are flagged:

- **Truck Turn-Around-Time.** The time between last pick-up location and arrival of a truck at the DMS is tracked. A time that is too short may indicate that the debris hauler is not filling the vehicle to capacity.
- **Out-of-Bounds.** The municipality boundaries are programmed geospatially to confirm that debris pick-up remains within the eligible bounds of the County.
- **Debris Type.** Discrepancies between the debris type noted by the collection monitor and the debris type noted by the disposal monitor are flagged for review.

Hazardous Tree Removal

Guidance established by FEMA requires supporting photo documentation for each ticket issued for hazardous tree or hanger removal services. The previous standard for monitoring firms was to take supporting photographs with a digital camera and manually associate the photos to each tree ticket. Tetra Tech can utilize ADMS technology to automatically associate photographs for all hazardous tree and hanger removal operations, which eliminates the potentially extensive labor associated with this task. Additionally, our ADMS technology and software is designed to manage photo documentation by compressing and securely storing photos for field validations and audits in real time. The ability to associate photo documentation to unit rate tickets is critical for FEMA reimbursement, QA/QC, and fraud deterrence.

As work in the field is completed, the information and supporting photos are uploaded directly to our database for QA/QC checks. A QA/QC manager verifies that the photographs comply with FEMA regulations and that all measurements meet the County’s contractual agreement with the contractor.
**Exhibit 4-10: Real-Time Ticket Report**

**Unit Rate Ticket Geoportal Report**

As monitors complete unit rate tickets for hazardous trees or hangers, their locations are logged and collected. The map below displays locations where hazardous tree or hanger removals were documented in the field. Clicking on the marker allows the user to review the data and photos collected by the field monitor (see example below). The unit rate ticket report is updated in real-time.

**Exhibit 4-11: Unit Rate Ticket Map**
Public Information

Following a disaster event, citizens will look to the County for direction regarding the debris removal process and project progress. Tetra Tech is prepared to assist the County with developing a means for County to manage inquiries from residents regarding the debris removal process. Tetra Tech has staffed debris hotlines for some of the largest disasters that have impacted the United States and is prepared to help the County establish and staff a debris hotline (including supplying equipment, phone lines, etc.) to respond to public inquiries and concerns.

Incident Reporting

Another key feature of our ADMS technology is that it allows field monitors to report incidents and provide supporting photographs in real time to the County, Tetra Tech, and the debris contractor. Examples of incidents include reporting pre-existing damage, damage caused by the contractor, debris piles skipped by the contractor, safety hazards, and other incidents critical to a debris removal program. As monitors complete incident reports in the field, the information and supporting photographs are uploaded to the Tetra Tech reporting server. Depending on the type of incident, priority e-mails may be sent out by the reporting server to County representatives, Tetra Tech’s project team, and debris contractor representatives. Our firsthand experience assisting local governments with recovering from disasters has shown that accurately capturing and photographing pre-existing damage can alleviate residential damage claims that may be submitted to the County. Additionally, the incident map developed from the collection information is essential to quickly identify unresolved contractor damages before the completion of the program.

Exhibit 4-12: Incident Report

Daily Reporting Metrics

Tetra Tech has a suite of reports that are automated from RecoveryTrac™ and available in real-time via PC, tablet, or smartphone. Although the reports are available at any time to the County, Tetra Tech will submit a daily status report that includes daily cubic yards/tons collected by material and program, cumulative cubic yard/tons collected, number of debris monitors in the field, cumulative cubic yards/tons hauled to final disposal, and daily/cumulative hazard removals. Below are samples of these reports created for recent projects. Additionally,
Tetra Tech takes pride in the customization of reports to meet our client’s specific needs and provided reports tailored to any metrics not captured in the generic reports.

Exhibit 4-13: Sample Custom Reports Developed

RecoveredTrac™ significantly reduces the amount of time needed for a contractor to generate an invoice and for the subsequent invoice reconciliation with Tetra Tech.

To expedite contractor invoice reconciliation efforts, Tetra Tech requires copies of contracts for all primary debris contractors. After reviewing the necessary contract(s), Tetra Tech sets up the RecoveredTrac™ database to generate transactions applicable to contract terms for tickets issued to each debris contractor.

Next, Tetra Tech meets with each primary debris contractor to review the debris contractor project reports that will be generated automatically via RecoveredTrac™. The debris contractor project reports will provide the debris contractors with sufficient data to reconcile with their subcontractors as well as generate invoices for payment by the client. The debris contractor is given a report login, which enables them to access the data remotely. They may run the report for a specific date or a range of dates.

Tetra Tech conducts several real-time QA/QC checks throughout the day, and a final daily comprehensive data analysis is performed at the close of operations. A final QA/QC check is completed when the debris contractor sends the invoice dataset to Tetra Tech for reconciliation. Incongruencies in the debris contractor’s data are flagged for review and must be resolved prior to the issuance of a final invoice.

The step-by-step process for contractor invoice reconciliation in a RecoveredTrac™ project is outlined below:
Monitor Training Program

To properly instruct newly hired employees, Tetra Tech has developed a training program that includes modules specific to the County. These modules are complete with the information required to facilitate accurate field monitoring and ADMS implementation. Qualifying tools included in the training modules assist with the retention of the material and assist Tetra Tech in screening and selecting the most qualified personnel for the monitoring task. Training module topics include truck certification, load site monitor responsibilities, disposal monitor responsibilities, hazardous trees monitor responsibilities, and field supervisor responsibilities. Project Managers, data managers, and operations managers follow standard operating procedures and protocols established in our concept of operations plan.

Health and Safety

Tetra Tech’s employees are the foundation of our business, and protecting them at all work sites is our highest priority. The company subscribes to the philosophy that all occupational incidents can be prevented and that no incident is treated as an acceptable event when we execute our work. To achieve this, the company’s health and safety processes are a vital and integral part of our work.

Health and safety addressed in our operations and management systems is supported by strong leadership. Tetra Tech’s leaders understand their responsibility and accountability to plan for safety and to ensure that safety measures are implemented. Preventing incidents also relies on a management system that regularly evaluates performance and identifies necessary adjustments to target continual improvement. The principal objectives of our program are codified in our written health and safety policy, which is endorsed and regularly monitored by the highest levels of our management team.

Industry metrics for our 2017 health and safety performance are provided below:

- US Experience Modification Rate (EMR) of 0.66
- 2017 Enterprise-Wide Total Recordable Injury Rate (TRIR) 0.56
- 2017 Enterprise-Wide Lost Workday Incident Rate (LWDIR) 0.10

Tetra Tech is committed to workplace safety. As such, a project-specific health and safety plan will be developed for the scope of work. Field staff assigned to the project will be trained on the health and safety plan. Additionally,
Tetra Tech project managers have completed the Occupational Safety and Health Administration (OSHA) Disaster Site Worker course and have their 10-hour Construction Safety Certification. During a debris recovery operation, Tetra Tech project managers and supervisors routinely examine the safety of field and debris staging site operations and have the authority to shut down unsafe operations. Debris staging site monitors are equipped with the appropriate personal protective equipment, which may include hard hats, appropriate footwear, reflective vests, hearing protection, and eye protection. Additionally, Tetra Tech project managers conduct regular tailgate safety sessions with their field employees to alert them of potential work hazards and review safe work practices.

**Grant Consulting and Recovery Services**

To ensure that the disaster assistance work to be performed by Tetra Tech on behalf of the County is performed in a coordinated, seamless, and efficient fashion, it will be critical to develop a coordinated approach to the work involved. Tetra Tech will provide the County with the highest level of productivity and value possible while maximizing the County’s reimbursement under the various federal grant post-disaster programs and supporting all disaster response functions. Effective project management is the cornerstone of a successful project. To ensure continued communication with the County and its project sponsor regarding project expectations, status, and deliverables, the Tetra Tech team utilizes the following project initiation and management activities across all tasked assistance:

- Conduct project kickoff meeting.
- Develop project scope statement.
- Develop project work plan.
- Develop application notebook and formulation.
- Submit weekly project status reports.
- Develop issues report as needed.
- Maintain external and internal relations.

**FEMA PA Kickoff Meeting**

The Tetra Tech team will begin the project by conducting a half-day kickoff meeting to develop the project work plan and establish communications protocols. The kickoff meeting will include County key staff and the Tetra Tech team. During the kickoff meeting, the Tetra Tech team will review the project’s goals, objectives, timeline, and deliverables. The outputs of the initiation kickoff meeting will be a stakeholder register and a Tetra Tech/County coauthored project scope statement that will provide the global framework for the project work plan.

*Continuous and coordinated communication with County staff is essential for the success of this project.* Our project management team understands the importance of effective communication and will seek to establish a communication protocol with the County at the kickoff meeting to develop a proactive working relationship and ensure frequent information exchange.

Areas to be discussed in the kickoff meeting and memorialized in a project work plan will include but not be limited to the following:

- Organizational reporting between Tetra Tech, County staff, State staff and federal agencies
- Timeline of key events (e.g., mobilization of Tetra Tech staff, timing for initial Tetra Tech meetings with the County, completion of applicant PW formulation, etc.)
- Roles and responsibilities and reporting structure of key Tetra Tech, County staff involved in the federal program emergency/disaster assistance efforts

**KEY FACT**

*Tetra Tech provides a comprehensive end-to-end approach to providing disaster-related services. We have utilized this disaster management approach to identify the unique needs of the County and deliver a diverse list of technical support services tailored to the County’s needs.*
Contact information for key Tetra Tech, State, and federal staff involved in the recovery effort

Likely staging of staff operations, including location of day-to-day operations

Internal communication plan for ensuring all parties are kept informed of progress

Reporting and information requirements of Tetra Tech’s work efforts and progress to the County

Templates of critical forms to provide consistency across the theater of operations

Identification of key FEMA officers to be interfaced under each program (PA and Hazard Mitigation Grant Program [HMGP])

Process flow and approvals of documents between Tetra Tech, the State, FEMA, and other federal and County agencies

Gathering information on the County's current critical infrastructure

Identifying protocols to track and resolve issues or problems that may be identified

Information to be included in Tetra Tech’s status reports to the County regarding recent project activity

Maintenance of the status reports in an easy-to-access location for all parties to review from time to time

Process for establishing task orders as requested by the County

Other information as specified by the County

Project Work Plan

As mentioned above, the Tetra Tech team will utilize the accepted project scope statement to develop a project work plan detailing the project method breakdown, sequence, and plan; project milestones, tasks, and deliverables; project timeline and deliverable dates; and responsibilities and organizational and reporting relationships of the Tetra Tech team to the various County agencies and applicants throughout the County in response to a disaster.

The project work plan will be developed from the results of the kickoff meeting, and the scope statement and will take into consideration the requirements of all stakeholders. The project work plan will be submitted to the County within 96 hours of the kickoff meeting for review and approval.

The underlying factor that contributes to the success of all Tetra Tech projects is our dedication to project management principles. Tetra Tech strives to train our staff to manage projects based on established successful principles. This ensures that, although your project is unique, it will be planned and executed in a logical process that we have improved over time. The Tetra Tech team will execute, monitor, and control the project based on the project work plan. In addition, status reports that track the project based on the project work plan will be distributed and discussed regularly.

FEMA PA Project Management

Tetra Tech takes a proactive approach to project management and quality control. Elements of Tetra Tech’s project management and quality assurance programs include the following:

- Maintaining a consistent project team throughout the duration of the assignment
- Providing weekly project progress reports that outline progress made during the current week, issues that require resolution or client involvement, and project burn rate (staff loading), as well as other requested data
- Utilizing a functional and transparent database management system for posting project documentation for the County and project stakeholders (FEMA, Federal Highway Administration [FHWA], Department of Homeland Security [DHS] Office of Inspector General [OIG], etc.)
- Providing written status report to the County project sponsor
• Conducting regular meetings with the County project sponsor to review reports and discuss pertinent issues to include the daily issues with policy and procedural meeting
• Maintaining, at a minimum, weekly open discussion with federal staff assigned to oversee the County’s recovery and mitigation projects
• Responding timely to Requests for Information (RFI) within two business days
• Conducting regular visits or communication by the Tetra Tech principal in charge to gauge client satisfaction and assist the project management team with making required corrections
• Participating in in-house (Tetra Tech) project review meetings conducted by third party reviewers (projects are given a color-coded status – green [all good], yellow [potential issues that require resolution], and red [management interaction required]); projects coded yellow or red will require frequent reviews
• Using checklist-based processes and procedures to complete and maintain PWs, files, and other documentation

FEMA PA Project Deliverables

With the comprehensive grant management program in place, the Tetra Tech team will can effectively and correctly manage the creation and review of grant applications (PWs) and the implementation, management, completion and closeout of the approved projects identified in the approved grant applications within confines of the specific grant guidance and program regulations.

Review of Contracts and Procurement

The Tetra Tech team utilizes a procurement checklist contained in Tetra Tech’s Public Assistance Services Program Standard Operating Procedures (PA SOPs) in the review process of disaster procurements and contracts. The checklists contain requirements from 2 CFR 200. The Tetra Tech team will also incorporate Georgia-specific purchasing checklists and will work with the County’s Purchasing Department to identify County-specific requirements that should incorporated in the review process.

Damage Assessments and Project Worksheet and Version Development

The Tetra Tech team has established SOPs for PA support developed over hundreds of past projects under the old and new delivery models. The SOPs have been recently updated for the new FEMA GrantsPortal system. When developing PWs and versions, Tetra Tech will use these SOPs to incorporate accurate scopes of work, damage descriptions, and cost estimates. The draft PW will take advantage of site visits performed by Tetra Tech cost estimators and PA technical staff, including photography of the damaged assets collected in RecoveryTrac™, Tetra Tech’s Android-based PA project and information tracking tool.

Tetra Tech staff will be available to perform damage assessments and site visits to damaged assets (with the prior approval of the County) to capture certain critical information using Tetra Tech’s Android-based PA project and information tracking tool, RecoveryTrac™. Information to be collected would include the following:

• Digital photographs and video of the damage site
• Address and GPS coordinates of the damaged site
• Brief narrative of the damage observed
• Document assumptions being made with respect to repair or replacement
Using our RecoveryTrac™ tool to capture damage information early is also advantageous in two additional ways. First, we are able to begin documenting Management Administrative Cost (MAC) (formerly Direct Administrative Cost (DAC)) specific projects much earlier in the process because we can link the administrative costs to a site or GPS location. Those costs stay with each site until they are grouped, assigned a reference number, and eventually assigned a PW number. Many firms do not begin tracking DAC until much later in the process, creating more exposure to undocumented expenditures. Second, our RecoveryTrac™ system helps organize costs and projects for the applicants before the FEMA/State teams begin PW development. This creates a system of checks and balances that promotes maximized reimbursement.

In the recent disasters from 2017 such as Harvey, Irma and Maria, the Tetra Tech team was able to provide all eligible costs and documentation for the writing of the PWs using RecoveryTrac™ rather than rely on FEMA staff to piece together information after the fact and potentially overlook certain reimbursable costs that were incurred early in the recovery effort.

Development of Project Worksheets

Tetra Tech’s PA SOPs address the formulation of PWs within the GrantsPortal system. The exhibit below provides an overview of the process of PW formulation described in the PA SOPs.
In the preparation of the PW, Tetra Tech will identify the project category (A-G), determine if it is a large or small project, and draft the scope of work for the project. The scope of work will show a direct correlation between the cause of the damage and the repair. As an example, for a damaged facility or road the scope will include a description of damage, the type and function of the facility, and its condition prior to the disaster. The facility’s location information will include the project’s address, detailed directions on how to find the project, and other needed data such as GPS coordinates, the names of cross streets, and exact mileage distances. A complete description of cause of the damage will be documented due to its importance when considering eligibility.

If work has been completed, the PW will distinguish between the work that has been performed and any remaining work that is yet to be completed. Tetra Tech will review the scope of work to ensure it is not incomplete or inaccurate. An incomplete or inaccurate scope of work could impede the funding process and result in a loss of funding in the post-disaster audit. The scope of work will accurately reflect the solution for the damage described in the damage description. Tetra Tech will also address special considerations such as hazard mitigation, insurance, environmental, and historical issues that must be resolved prior to funding.

The supported cost information for labor, materials, and equipment associated with the project will be documented where the project costs may be estimated by unit price, T&M, or contracts in which labor, equipment, and materials are provided by an outside source.

If Tetra Tech determines there are questions, issues, or potential ineligible costs during the preparation of the PW, it will be noted and discussed with the County to minimize the delays that can be realized when a PW is disallowed or has multiple RFI from the State or FEMA staff.

**Data Review and Reconciliation**

For the review of PWs in the GrantsPortal System, the Tetra Tech team will implement our PA SOPs that have been developed based on industry standards, best practices, and previous engagements in past disasters. Essential checkpoints in these procedures include:

- The review and analysis of collected documentation to ensure that costs are reasonable and eligible
- The review and analysis of collected documentation to ensure that the work and costs are adequately documented, are included in the approved scope of work, and are deemed eligible
- The review and analysis of invoices and receipts by checking the dates and amounts to ensure the dates fall within the disaster event range and are reasonable for the purchase
- The review and analysis of contract labor timesheets by checking dates and hours worked per employee to ensure the dates fall within the disaster event range and are recorded as direct labor against the disaster work
- The review and analysis of force account labor timesheets, including special issues like exempt employees, benefits/policies in place, and 40-hour threshold issue; reconciliation of force account labor, equipment, and material data

Tetra Tech will enter the data into RecoveryTrac™ in preparation for the grant application entry and cross-reference the data from the original documentation source to the financial statement of payment.

Tetra Tech will perform due diligence on issues deemed questionable and report those concerns to the County.

**Request for Reimbursement Support**

To facilitate the request for reimbursement process and reduce the reconciliation backlog, it is important for supporting documentation to be collected, maintained, and updated throughout the duration of the recovery process. Constant monitoring of grant applications, project progress, requests for reimbursement, and reimbursement received inherently reduces the backlog and aids the speed of funding. In addition, it eases the eventual grant closeout and reduces the risk of future deobligations.
The Tetra Tech team has an extensive history of implementing, reconciling, and monitoring the request for reimbursement process internally and on behalf of our state and local clients spanning the FEMA PA, FEMA Hazard Mitigation Assistance (HMA), and HUD Community Development Block Grant-Disaster Recovery (CDBG-DR) programs among others. While many agencies and subgrantees still wait for reimbursement from previous disasters (such as Hurricane Irene in 2012), our goal is to leverage the spirit of the Sandy Recovery Improvement Act (SRIA) and the Disaster Recovery Reform Act (DRRA) to expedite the economic recovery of the region through strategies such as the state closeout and audit program, PW appeals process, HMGP application review, and CDBG-DR project approval process.

CDBG-DR Support Services

The Tetra Tech team has comprehensive experience working with the CDBG and CDBG-DR programs and has a successful record of helping communities across the region bolster recovery efforts and long-term resilience. Tetra Tech has applied our expertise in the CDBG-DR program to help numerous communities navigate complex program requirements, including the development of Action Plans, Consolidated Plans, grant management, application procedures, and compliance review among other services. The Tetra Tech Project Team has assisted our clients in obtaining and managing over $9 billion of HUD CDBG-DR grant funds over the past decade making us by far the largest group of HUD CDBG-DR experts in the country.

Tetra Tech offers Albany the advantage of a full-service, integrated team with both the technical expertise and staff capacity to provide expert guidance in navigating all facets of the CDBG-DR program and its requirements. Below is our team’s proposed scope of services to assist Albany in successfully navigating the CDBG-DR program and maximizing the potential recovery and resilience benefits for your community

Technical Guidance and Compliance Monitoring

Tetra Tech will leverage our considerable experience working with the CDBG-DR program to provide Albany with ongoing technical guidance and compliance monitoring during the planning and implementation of all CDBG-DR related activities. This will include expert guidance in all of the following areas as they relate to the CDBG-DR program:

- **Funding Technical Assistance:** Provide expert guidance on the most appropriate, allowable, and effective uses of the CDBG-DR funds.
- **Policies and Procedures:** Conduct a comprehensive review of all existing systems, policies, and procedures for CDBG-DR grant management and compliance. As needed, assist staff with policy and/or program changes, development and updating of Policy and Procedures Manual.
- **Project and Program Eligibility Review:** Verify individual project or program eligibility and conformance with all program requirements. Document all required eligibility requirements for each use of funding, including but not limited to national objectives, duplication of benefit calculations, connection to the federally declared disaster, timely expenditure of funds, prevention of waste fraud and abuse, compliance with Davis Bacon and Section 3 requirements, among others.
- **Program and Project Tracking:** Assist with continuous tracking of all projects and programs utilizing CDBG-DR funds. Develop internal project documentation and tracking procedures that successfully interface with HUD’s required Disaster Recovery Grant Reporting (DRGR) system.
- **Quarterly Reporting:** Prepare and submit required quarterly performance reporting to HUD.
Unmet Needs Assessment

Tetra Tech may conduct a comprehensive Unmet Needs Assessment that will allow Albany to more fully understand the breadth of remaining community needs in order to maximize the benefits of the limited CDBG-DR resources. Tetra Tech will identify and document damages and impacts from the federally declared disaster and assess all existing recovery resources to determine the remaining recovery gap for which CDBG-DR funds can be used. This process will support all subsequent duplication of benefit calculations for individual projects by ensuring that CDBG-DR funding is only used for those projects in which other funding is not available.

To complete the Unmet Needs Assessment, our team will undertake a multi-pronged process that incorporates a range of both quantitative and qualitative analyses to identify and document unmet needs in the County. At a minimum, Tetra Tech will evaluate three core aspects of recovery: housing, infrastructure, and the economy at the lowest geographic level practicable, with a focus on any unaddressed special needs.

The following sub-tasks will be included in the Unmet Needs Analysis:

- **Community and Stakeholder Engagement:** Conduct three to five meetings with local stakeholders to discuss the impacts from the storm event, unmet needs, impacted populations, actions taken to date, and clarification of long-term needs and resilience opportunities. These open and engaging forum meetings will also help facilitate connectivity with local organizations who may be involved in recovery efforts and/or have access to unique information to support the identification of unmet needs. Additionally, a survey will be distributed to appropriate community stakeholders to identify additional impacts and unmet recovery needs.

- **Evaluation of Existing Plans and Documents:** Perform an evaluation of existing plans, documents, and information sources to help further understand the depth and breadth of issues and unmet needs. Tetra Tech will collect and review a variety of information to determine the location and extent of damages associated with the storm event as well as funding assistance received or anticipated from alternate sources. These documents may include but not be limited to FEMA Verified Loss data, FEMA PA recipients, FEMA Individual Assistance recipients, SBA recipients, NFIP data, relevant Hazard Mitigation Plans (HMP), Flood Insurance Studies (FIS), Flood Insurance Rate Maps (FIRM), and any local/municipal post-flood reports.

- **Meetings with Government Officials:** Conduct focused meetings with local officials to complement data gathering efforts. These meetings will help provide additional flood damage data and a greater understanding of existing and needed resources for recovery and resilience.

Action Plan Development and Approval

Once the collection of the data/information is complete, our team will prepare the required Action Plan with associated strategies and programs to guide the appropriate expenditure of CDBG-DR funds. Our team will work collaboratively with local points of contact throughout the development of the draft Action Plan to develop an overarching direction for the plan’s development and all specific strategies, actions and programs for implementation. The Action Plan will identify impacts, community status, needs, potential duplication of benefits, funding gaps, and impacts to vulnerable populations and low to moderate income (LMI) households. When complete, Tetra Tech will provide the draft Action Plan to the community for review and comment. Once we receive any comments, our team will prepare a final analysis for submission and approval by HUD.

At a minimum, Tetra Tech will conduct the following sub-tasks in preparing the community’s Action Plan:

- **Stakeholder Outreach and Engagement:** Conduct ongoing community outreach to inform the public on a variety of topics, including CDBG-DR program information, impacts from the disaster, the availability of recovery resources, potential funding programs and application procedures, among others. Ongoing outreach will help to refine the Unmet Needs Analysis and strengthen the strategies presented in the required Action Plan.
Program Development: Utilizing data gathered for the needs analysis, develop programs for homeowners, businesses, and capital projects that are compliant with CDBG-DR rules and aid in the physical and economic recovery and resilience of the disaster-affected area. These programs would potentially include housing, economic development and infrastructure.

LMI Assessment: Areas of concentrated vulnerable populations/LMI households or persons will be identified and provided additional consideration when identifying impacts and potential projects.

Action Plan Development and Submittal: Prepare and submit to HUD the required Action Plan through the DRGR system.

Public Hearings and Action Plan Comments: Assist with all HUD public notice and comment requirements. Assist with public notices, advertisements, posting of the draft Action Plan and required public hearings. Review and document all public comments on the draft Action Plan and complete any necessary revisions or additions.

Action Plan Amendments: Prepare all necessary Action Plan Amendments and manage the subsequent re-approval process

Environmental Reviews

As requested by the County, Tetra Tech will use its vast past experience performing HUD level environmental reviews to support the implementation of programs and projects proposed for CDBG-DR funding. Tetra Tech’s environmental reviews may include environmental assessments, categorical exclusions, and historic preservation reviews. Given the fact that the number and complexity of the reviews will be determined by the number of projects, the number of reviews will be assigned by the client, and Tetra Tech will provide a budget for completion of the reviews.

Program Management and Implementation

Following HUD approval of the Action Plan, Tetra Tech will assist the County with the implementation of all CDBG-DR programs and projects. This will include a comprehensive set of services to ensure compliance with all programmatic requirements while also maximizing efficiency and the full recovery benefits of the CDBG-DR funding. Specifically, Tetra Tech will provide the following core services during implementation of the CDBG-DR programs and projects:

Project Meetings: During the first six months after the Action Plan is approved, our team will meet with representatives of Albany on a weekly basis to review drafts of the programs and policies, address any issue that have been identified by both the client and HUD, and provide technical assistance related to specific proposed projects.

Program and Application Procedures: Develop program and application procedures, materials, and evaluation criteria for consideration of projects. A draft set will be provided for review and then a final draft provided.

Project Prioritization: Assist with the review of submissions for program eligibility and relation to national objective(s) and assess effectiveness for recovery and resilience. Assist with project prioritization and develop implementation strategies for the identified projects.

Compliance Monitoring: Provide ongoing compliance monitoring and guidance during project implementation including but not limited to procurement procedures found in 24 CFR Part 85.36, federal labor standards, fair housing, accessibility requirements, eligible costs, funding drawdown, and construction schedule, among others.

Housing Program Assistance: Assist in ensuring that any housing programs or projects meet the eligibility criteria of 24 CFR Part 570 Subpart C – Eligible Activities. All eligible activities and projects will be monitored and implemented so as to comply with all subsequent federal requirements regarding buyouts, acquisitions, relocation and any necessary rental assistance under fair housing requirements.
Economic Development Program Assistance: Provide assistance on any economic development projects to ensure that they meet all of the requirements of 24 CFR Part 570.209 including job creation, employment information, review of activities for eligibility, ongoing monitoring and records maintenance.

Construction Oversight: Assist with contractor oversight and management, which would begin with assistance in identifying contractors that may meet Section 3 and MBE/WBE requirements. Other services would include guidance on contractor pre-bid meetings, bid reviews, pre-construction meetings, labor compliance, and construction progress tracking.

Funding Strategies: Assist with identification of alternate funding sources for priority projects. Review all federal programs (disaster recovery and general assistance) and identify best practices for leveraging funds to promote resilient sustainable communities.

DRGR Data Management System: Provide assistance to the County with using the DRGR system to set up the Action Plan components, processing expenditures of funds and preparation of the quarterly reports. Our team will meet on a regular basis during the first two quarters of the program implementation to provide hands-on assistance with the system and respond to any issues and/or concerns. Our team will also participate in meetings and teleconferences with US HUD staff.

CDBG-DR Training: Provide a maximum of five educational and technical assistance training programs on recovery and the CDBG-DR programs for local officials.

FEMA Section 404 and 406 Hazard Mitigation Expertise

Hazard mitigation is an essential tool to break the cycle of damage due to disasters. Tetra Tech is a leader in assisting to states and municipalities in hazard mitigation planning and program execution. As the recovery to a disaster begins or preparations are made prior to a future disaster, it is critical that all operations consider available hazard mitigation opportunities. The Tetra Tech team has the expertise and experience to coordinate Albany's efforts to support the consideration of all mitigation options. Tetra Tech can provide the following services:

- Mitigation Program Administration
- Mitigation Planning and Hazard Assessment
- Section 406 Mitigation Integration
- HMA Program Application and Implementation (HMGP 404, Flood Mitigation Assistance [FMA], and Pre-Disaster Mitigation [PDM])

Section 406 Mitigation Integration

Tetra Tech will provide technical assistance to the County in regard to Section 406 funding opportunities through the FEMA PA Program.

Section 406 hazard mitigation funding applies only to disaster-damaged damaged structural elements. Each proposed mitigation project must be approved by FEMA and conform to DAP 9526.1 under Section 406 of the Stafford Act. The eligibility requirements are as follows:

- Prevents future similar damage
- Applied only to damage elements of the facility
- Cannot increase risk or cause adverse effects
- Consists of mitigation work above and beyond returning the facility to pre-disaster condition
- Does not apply to replacement
- Must be cost effective
Tetra Tech will assist the County with developing justification for betterments that must include an economic analysis that demonstrates the cost associated with a project outweighs the potential higher cost of future losses (e.g., development of a benefit cost analysis [BCA]).

Tetra Tech will assist the County in identifying potential mitigation projects that may qualify for Section 406 hazard mitigation funding. As an example, our team has reviewed and approved over 300 PWs for the States of South Dakota and Vermont that included additional Section 406 hazard mitigation funding to improve highway or road facilities.

### Hazard Mitigation Assistance (HMA) Program Application and Implementation

FEMA provides mitigation funding through its Hazard Mitigation Assistance (HMA) programs with the intent of bolstering infrastructure and preventing future losses. HMA opportunities include post-disaster mitigation program like the Section 404 HMGP that provides mitigation grants to communities affected by disasters. In addition to Section 404 HMGP grants, FEMA also offers competitive non-disaster annual reoccurring Pre-Disaster and FMA funding assistance through HMA programs where the mitigation opportunities are described in the 2013 Unified Hazard Mitigation Guidance. These non-disaster grants offer funding for a wide variety of cost effective mitigation funding opportunities to state and local governments. At the County's request, the Tetra Tech team will assist with identifying future mitigation grant opportunities to supplement the disaster-related mitigation programs. Projects that are typically reimbursable under the HMA programs include acquisition/demolition programs, home elevations, and minor flood repair projects. Tetra Tech is prepared to assist the County with HMA services, including preparing applications, conducting outreach to potential property owners, developing application scopes, assessing cost-effectiveness (BCA), regulatory clearances, grant implementation, and audit and closeout services. Currently, Tetra Tech is administering the Boulder County's HMGP Program in response to their flooding event of 2013. Our team also serves as the lead FMA contractor for Galveston County, Texas, providing residential elevations following Hurricane Ike and is administering the FMA program for the City of Virginia Beach, Virginia.

### Financial and Grant Management Support

#### Client Advocacy

Following catastrophic disaster that truly alters the fabric of a community—such as Tropical Storm Irene in Vermont in 2011; the tornado in Joplin, Missouri in 2011; the Iowa floods in 2008; or Hurricane Katrina along the Gulf Coast in 2005—County and local leaders will be facing many critical challenges that will shape their community for years to come.

The solutions to these challenges require a great deal of planning, foresight, and stakeholder input and analysis to understand the best interest of the community and the people affected by the disaster. In addition, coordination with the various agencies that provide federal disaster funding is a key element to the County's recovery.

#### Program and Policy Updates

Tetra Tech understands the criticality of providing accurate, timely, and useful information to the County on policy and procedural issues. If there is an immediate need to address a policy or procedural issue - such as if FEMA issues Disaster-Specific Guidance (DSG), the Tetra Tech team will contact the County immediately as well as capture and memorialize these issues as they arise.

Tetra Tech is intimately familiar with recent changes to federal disaster relief program guidance, including Stafford Act revisions, MAP-21, Unified Hazard Mitigation Program Guidance, Post-Katrina Emergency Management
Reform Act of 2006, Sandy Recovery Improvement Act, PA Alternate Procedures Program, and various 9500 Series guidance documents.

Arming the officials with such information and maintaining open lines of communications provides ample opportunity to identify trends in recovery operations and take appropriate actions if necessary to maximize the County’s recovery and mitigation programs.

**FEMA Appeals Management**

As a recipient of FEMA PA funds, the County can expect that funding eligibility differences will arise between FEMA and the County. While Tetra Tech will work with FEMA and the County to proactively resolve funding challenges through our collaborative approach, applicants have the legal right to appeal decisions and judgments made by FEMA if resolution cannot be reached. Part of this legal process requires that applicants (the County) submit appeals to the grantee (State) for review and subsequent submission to the FEMA regional director within prescribed timeframes. Tetra Tech will implement a systematic approach by which appeals are developed and submitted. In the event that a first appeal to the FEMA regional director is unsuccessful, Tetra Tech will assist the County with drafting the second appeal for submission to the national director of recovery within the statutory timeframe.

In addition, FEMA has initiated a pilot that allows PA grant applicants an added option of arbitration by an independent review panel to resolve disagreements related to PA projects for disaster-related emergency protective measures; infrastructure repair and replacement work; or debris removal. This Dispute Resolution Pilot Program is a result of the SRIA of 2013 and the DRRA of 2018. The added option allows applicants to file for arbitration, which will be conducted by an independent review panel, instead of pursuing a second appeal under FEMA’s PA Program. This resolution option will be available for emergency protective measures, infrastructure repair and replacement projects, or debris removal when the disputed amount greater than $1,000,000. As this arbitration option is a pilot program, Tetra Tech will monitor its implementation to provide the County advice on its effectiveness and be prepared to champion projects in the process.

**Information Technology, Data Management, and Reporting**

**Weekly Reporting, Communications, and Meetings**

Tetra Tech will efficiently communicate with the County by providing weekly status reports outlining updates to the projects assigned to the Tetra Tech team. This report will be presented in a PDF format and will provide a financial overview, tracking for PWs, DACs, status of tasks, and staffing information.

Additionally, the Tetra Tech management team will be available to meet weekly to review the weekly status report and report on work completed in the prior week, work scheduled for the coming week, timeline for future key milestones, and overall progress on the recovery effort. The weekly meeting will also be used to receive an operational briefing from the County Administrator, Recovery Liaison or their deputy to provide an accurate understanding of current needs, recovery effort status, and any changes in the project objectives.

The weekly report will also lay out an operational plan for the Tetra Tech team for the coming week and will be prepared in consultation with DHS & EM. In addition, Tetra Tech staff is available to attend, facilitate, and/or report on recovery-related meetings at the DHS & EM’s request.
Grant Submittal and Tracking System

Perhaps the most critical component of the County's grant application process will be project reporting and providing the County with visibility to the process. To maximize the efficiency and effectiveness of the program, the Tetra Tech team proposes using its RecoveryTrac™ system. The RecoveryTrac™ system was specifically designed for the management and administration of documents, data, and information related to grant administration and case management. The Tetra Tech team would work with additional applicable agencies to coordinate any additional needs that may enhance their response to Albany's data needs.

As a means of warehousing files, Tetra Tech utilizes RecoveryTrac™ as a secure, password-protected, online file-sharing platform to store electronic copies of the monthly progress reports, project work plan, application notebooks, files, and other project-related information. In this way, the County will have access to project-related information in one easy-to-access location without having to expend the time and expense of maintaining their own project filing system.

To facilitate a streamlined approach to administering disaster grant programs, Tetra Tech has configured the RecoveryTrac™ system to organize and manage data and documentation associated with each of the programmatic areas. By implementing the RecoveryTrac™ system, the County would benefit in the following ways:

- **Efficiency.** By instituting an electronic document management system that associates directly with its document filing system, regulatory and auditing agencies can efficiently search and review electronic project files.

- **Enhanced Reporting.** Customizable data and document management provides for enhanced reporting capabilities. Because the County will have input in the design of RecoveryTrac™ reports, Tetra Tech can customize the reports to meet its specific needs.

- **Exporting Capabilities.** The RecoveryTrac™ system was designed with the knowledge and understanding that data and information being managed by the County must be exportable to a format that allows for importation into other applications such as the EMMIE/NEMIS, etc.

- **Real-Time Information.** RecoveryTrac™ is a web-based application that will provide the County with a real-time portal to the Tetra Tech team’s project work. Through a secure login, the County will be able to log in and review project work.

**Exhibit 4-16: Worksheet Database**
Monitoring DAC

RecoveryTrac™ will allow Albany to monitor the amount and ratio of MAC or DAC by individual project. All DAC claimed against projects and project costs are tracked in RecoveryTrac™. When utilized from the inception of a project, DAC can be monitored in real-time as administrative costs are associated to a project. RecoveryTrac™ may also be utilized to import previously expended DAC and monitor any additional DAC as it is expended.

The Tetra Tech team has the experience to implement a host of technologies during a response to a disaster, including but not limited to ArcGIS, HAZUS, USACE Debris Model, online grant management software (RecoveryTrac™ and MB3 Online’s SCRecoveryGrants.org), EMMIE, NEMIS, ADMS, WebEOC®, resource tracking software, and the Microsoft Office Suite.

Project Tracking

Tetra Tech will utilize three management information systems to monitor the progress of projects in the field:

RecoveryTrac™ and RecoveryTrac™ Geospatial: Tetra Tech’s proprietary program will allow the Tetra Tech team to track the progress of projects. Activities performed by the Tetra Tech team will be documented in RecoveryTrac™ as a means of tracking staff deployed in the field. RecoveryTrac™ is a state-of-the-art technology used reduce the tremendous volume of paperwork associated with tracking applications for disaster assistance. Tetra Tech’s RecoveryTrac™ project management tools provide real-time project metrics that allow local governments to properly manage their cost and project schedule while maximizing efficiencies. Tetra Tech’s RecoveryTrac™ has increased efficiency and improved the management of efforts for multiple clients, including the City of Sioux Falls, South Dakota (Ice Storm 2013); New Jersey Department of Environmental Protection – Marine Debris Removal Program (Hurricane Sandy); City of Newark, New Jersey (Hurricane Sandy), Borough of Sayreville, New Jersey (Hurricane Sandy); St. John the Baptist Parish, Louisiana (Hurricane Isaac); and the City of Houston, Texas (Texas Drought and Wildfires).

Contractor Oversight and Financial Reconciliation

Tetra Tech has extensive experience with managing and reconciling contractor invoices. Our team has successfully reconciled and managed reimbursement of over $3 billion of costs for declared disasters. Based on this experience, our team has developed RecoveryTrac™ database as well as SOPs for contractor invoice reconciliation. At the outset of the project, Tetra Tech will work with the County’s contractors to demonstrate RecoveryTrac™ and provide access and reports that the contractors can utilize for invoicing and subcontractor reconciliation.
Tetra Tech's RecoveryTrac™ database performs a systematic comparison of the RecoveryTrac™ database records versus the contractor's invoice supporting documentation. RecoveryTrac™ generates a report that shows where the two data sets agree, disagree, or have missing information.

Invoices are submitted and reconciled to correct any deficiencies before being recommended for approval. This typically requires significant communication between Tetra Tech and contractor staff to resolve discrepancies. After all discrepancies are resolved, Tetra Tech sends a follow-up letter to the County recommending the amount of retainage to be released. Finally, a Tetra Tech invoicing specialist audits the materials in the invoice file to ensure that the file is complete.

Tetra Tech's proprietary database allows the County to track the impact payment approvals made on obligated grant applications and agency purchase orders. This allows the agency to effectively plan for purchase order adjustments and the need to generate adjustment applications.

Exhibit 4-19: RecoveryTrac™ Report Viewer

Furthermore, the RecoveryTrac™ system combined with contractor reports enable the contractor to submit cleaner invoices, thus reducing reconciliation time and ultimately resulting in more rapid payment of the contractor and local subcontractors with less retainage required.

Disaster Recovery Engineering-Related Services Support

Tetra Tech is a leading provider of consulting, engineering, program management, construction management, design, and technical services worldwide. We serve the full project life cycle, which increases a community’s resilience to major storm events and economic downturns. The specific areas of expertise related to community resilience for Tetra Tech include water resources, infrastructure, environment, resource management, energy, economic development, and emergency management.

Engineering News Record has ranked Tetra Tech among the top engineering firms in the nation, as indicated by the latest rankings at the right. Tetra Tech was ranked #1 in water resources and water management, such as stormwater management, for 13 consecutive years.

Our approach to implementing the projects anticipated under this contract is built on a sound system that includes checks and balances, accountability, and strong communication. We will follow an organized technical approach process that includes key features of feedback, measurement, and accountability. Although the specific approach to each task will vary, a generalized technical approach is outlined below.
Engineering Studies

Over the course of a contract, clients often authorize their consultants to evaluate a variety of concepts. Such concepts might involve implementing operational changes at a treatment facility to improve treatment/energy efficiency renewal and replacement of aging pump stations and pipelines. In such assignments, it is important to clearly identify the scope of assignment as well as the precision needed for decision-making. For example, very precise performance models and cost estimates may be necessary when evaluating infrastructure improvements that must yield short “pay-back” periods. In contrast, less rigorous analyses may be necessary to support rehabilitation or replacement of an aging infrastructure with known historical maintenance issues.

Because of the uncertainties that currently exist with regard to the types of studies that may be authorized under this contract, it is difficult to develop a definitive project approach to stand-alone assignments involving studies or reports. Despite these uncertainties, the general approach to the work normally includes the following:

- Kickoff meeting
- Data gathering and analysis
- Development and refinement of alternatives
- Engineering calculations and computer models as appropriate
- Calibration of models as appropriate
- Capital, operating, and present worth cost analyses
- Preparation of draft report
- Review meetings
- Preparation of final report
- Presentations as appropriate

Preliminary Engineering and Project Evaluation

In general, the preliminary engineering phase will involve gathering information; evaluating and selecting alternatives; and determining the size, type, and configuration of the proposed facilities as well as the cost for such facilities.

Preliminary Engineering

The preliminary engineering phase identifies the criteria that will be utilized for final design and will typically include:

- Data collection
- Construction methods and material evaluation
- Alternative route analysis
- Report preparation with recommended alternative
- Survey and site issues

The preliminary engineering report will summarize the findings, conclusions, and recommendations in a concise format and will be initially submitted to the County as a draft document for review and comment. Subsequently, Tetra Tech will meet with the County to discuss the initial submittal, revise the document as necessary, and resubmit the report for approval prior to the development of the final design and construction documents. Throughout the development of this document, Tetra Tech will work with County staff in order to encourage feedback so that all comments and concerns are addressed within the initial deliverable.
Final Design Phase

The final design phase will result in bid documents, engineering drawings, and specifications, which will be reviewed by the County’s staff at various milestones prior to bidding or release for permitting. In addition, a cost estimate will accompany the documents at all review milestones. To ensure proper design of the facilities, the project team will discuss and receive approval from the County for any substantial changes from the concepts outlined in the preliminary engineering report.

Immediately following authorization to proceed with the final design, the project team will initiate necessary field surveying services and geotechnical investigations. As part of this phase, Tetra Tech will provide the County with monthly status reports to keep the County abreast of the project at all times. The design of all improvements will be in accordance with the County’s standards and will utilize material and equipment as approved by the County. Final design activities will proceed to the 30-, 60-, 90- and 100-percent completion levels, at which time the plans and specifications will be submitted for review by the County. A meeting will be held following the County’s review of each of these submittals to discuss concerns and/or comments that the County may have regarding these submittals.

Permitting/Regulatory Phase

Tetra Tech’s project approach to permitting is simple and follows the same logic as the overall project delivery concept. This simple philosophy is centered on the fact that the regulatory agencies should be involved with the project from the very beginning. Suggested involvement usually includes pre-design and pre-permitting meetings that minimize project delays through effective, straight-forward communication. In addition to having thorough communication with regulatory agency staff, Tetra Tech employs a methodical approach to permit development and filing. All sections of the permit applications are often verified through the client and the representative agency prior to filing. Tetra Tech also reviews the magnitude of each project, and in some instances, small projects can be handled as a repair and replacement (R&R) project and the regulatory agency can be simply notified of the repair or replacement.

Surveying and Mapping

Our surveying and mapping team has provided wide-ranging and specialized services to many public, private, and industrial clients. We understand the importance of providing accurate and detailed surveys to assist the County in acquisition, design, and/or engineering. Tetra Tech understands that the scope of services related to surveying and mapping may include:

- ROW surveys that include the establishment of boundaries, monumentation of ROW lines, and locating encroachments, as well as proving final ROW maps
- Horizontal and vertical geodetic controls surveys
- Canal and levee cross sections and profiles
- Boundary surveys including extensive retracement of original sectionalized land systems boundaries
- Mean high water line surveys
- Ordinary high water surveys
- Topographic surveys
- Specific purpose surveys
- Hydrographic surveys
- Construction layout serves, records or as-built surveys and quantity surveys
Field reconnaissance
- General surveying (preparation of legal descriptions, court testimony and surveyor’s report)
- Professional surveying and mapping review
- Engineering economics studies
- Planning program development and budgeting
- Expert witness and independent peer review
- Public notification, public meetings and presentations to Governing Board
- Project management and quality assurance/control

At the beginning of each Task Work Authorization (TWA), our team will gain an understanding of the project goals, budget, and schedule and then formulate the right team of key personnel while developing a sound technical approach.

**Hydraulics and Hydrology Modeling**

Tetra Tech has a rich history of modeling expertise using a variety of hydraulic and water quality models including HEC-RAS, FLO-2D, and other 1- and 2-dimensional hydraulic models. Our engineers and scientists use geospatial data, topographic surveys, stream gage analysis, historical information, and field observations to configure model components. We are adept at implementing the appropriate analysis based on the data available, the conditions present, and the information desired. Our modelers have design experience, ensuring that studied alternatives are feasible and effective solutions. Tetra Tech has performed hydraulic modeling across the country to facilitate floodplain management, investigate sediment transport, and help communities become more resilient. We are currently performing HEC-RAS analysis in New York as part of the NY Rising Community Reconstruction (NYRCR) Program, which includes streams and rivers in Ulster and Delaware Counties, where we are working hand-in-hand with local communities to evaluate the effects of project alternatives and communicate these results back to the communities to facilitate prioritization of projects.

**Geographic Information Systems**

Tetra Tech has several teams of dedicated GIS staff who are knowledgeable in GIS programming, creating user interfaces or connection systems (ArcIMS or ArcGIS Server), customizing databases and maps, and integrating third party GIS plugins (such as the HAZUS database or Maximo Spatial). The level of GIS integration can be scaled to the County’s immediate needs and long-term vision.

**Bidding and Award**

In accordance with Office of Management and Budget (OMB) Super Circular 2CFR200, Tetra Tech will provide bidding documents, drawings, and specifications in the appropriate electronic format for use by the County. During the bidding process, the project team can support the County by attending the pre-bid conference and respond in writing to all bidders’ questions in appropriate addenda to the County. Once the bids are received, the project team can tabulate the bids, review the bidders’ qualifications, and recommend award of the contract, in writing, to the County. Prior to the construction phase, a reproducible conformed set of engineering drawings and specifications will be prepared for use during construction.

**Construction Services**

Upon award of any construction contract, Tetra Tech will attend a pre-construction conference with the selected contractor, subcontractors, and the County. Subsequently, Tetra Tech will attend progress meetings, perform site inspections, and provide interpretation or clarification of the design documents when requested, respond to RFIs, and prepare change orders required for minor modifications. In addition, Tetra Tech will review shop drawings,
pay requests, and other submittals for general conformance with the specifications and drawings and conduct substantial and final completion inspections to determine if the work has been completed in conformance with the contract documents. At completion, Tetra Tech will prepare and submit certificates to the appropriate regulatory agencies. Upon completion of all work, the project team will prepare record drawings from the contractor’s survey and markups in both reproducible and electronic formats for the County’s use.

Public Relations: Community Meetings and Public Notifications

Construction of infrastructure adjacent to existing homes and business can have a significant impact due to access restrictions, noise, and dust. Our approach during design is to consider these impacts and address these concerns to the maximum extent practical. Our team has extensive experience working with the public on complex utilities projects in both residential neighborhoods and along urban commercial corridors. The County has a specific approach and criteria for informing property owners and residents of the planned construction of improvements. The Tetra Tech team will assist the County in drafting notification flyers to the County’s criteria. Typically, the County prints and distributes the flyers to the potentially affected property owners. When preparing presentations for the community meetings, our approach is to clearly present the need for the project so the property owners fully understand the benefits to the community.

Ability to Create Innovative Approaches

We are an industry leader in the development of innovative solutions to meet our clients’ needs, from the identification, modeling, and permitting water sources through construction administration, inspection, and certification. We are committed to evaluating each stage of the project to determine to best possible solution to meet the County’s needs.

Emergency Management Support Services

Emergency Management Plans

Tetra Tech will develop emergency plans and documents following the National Plan Development Process (NPDP), the nation’s standardized methodology to design and develop operational-level emergency plans. For each document, Tetra Tech will form a Collaborative Planning Team (CPT), develop a work plan, conduct research on the plan’s topic, assemble planning resources, and begin to understand the problem addressed in the plan. Tetra Tech and the CPT will then determine the goals and objectives of the plan, and identify potential courses of action (COA) to meet those goals and objectives. Next, Tetra Tech and the CPT will analyze the COAs and determine the best ones to include in the plan. Tetra Tech will then write the plan and supporting documents in the format approved by the CPT, obtain feedback, and submit the final plan to the County for approval. Tetra Tech will then brief key officials identified by the CPT on the content of the plan.

Tetra Tech has used the above planning process to develop debris management plans, COOP/COG plans, EOPs, evacuation and sheltering plans, mass care management plans, logistics and resource management plans, and others. Tetra Tech has developed emergency plans, standard operating guidelines, and policies and procedures for many state and local governments as well as private sector, transit clients, academic and quasi-governmental organizations in both rural and urban environments. Our experience includes developing plans that require extensive outreach to diverse stakeholders to find a common solution that meets all parties’ needs. In each of these efforts, our team has worked with the full spectrum of stakeholders, including non-government organizations/nonprofit entities, faith-based organizations, and the private sector; ensuring a genuine “whole of community” approach to each solution developed. This extensive experience of dynamic engagement has honed our ability to facilitate successful plan development with dozens of multi-disciplinary stakeholders across jurisdictional lines.
Training

Tetra Tech’s instructional design experts will work with a few key stakeholders in developing course objectives, formatting, and creating course materials. Tetra Tech will follow the ADDIE model of instructional design, which includes five phases: analysis, design, development, implementation, evaluation. This process allows for a dynamic, flexible guideline for building effective adult learning training modules. To conduct training, Tetra Tech will call upon its expert trainers in law enforcement, fire, emergency management, public health, medical, or other disciplines. Tetra Tech will conduct the training in-person or develop self-paced training that can be completed online. Tetra Tech has certified training practitioners can provide the County with a wide range of emergency preparedness training course packages.

Exercises

Tetra Tech will follow the Homeland Security Exercise and Evaluation Program methodology for all exercises. Tetra Tech will work with the County to establish an Exercise Planning Team and will work with the Exercise Planning Team to design, develop, conduct, and evaluate the exercise. Tetra Tech will coordinate development of exercise documents (e.g., situation manual, master scenario events list, controller/evaluator handbooks, etc.) and conduct the exercise planning meetings. The documents and meetings will depend on the type of exercise requested by the County. Tetra Tech will conduct follow-up telephone calls and other outreach as necessary. We will conduct a series of pre-exercise briefings and work with the County to ensure that exercise logistics are addressed.

Tetra Tech will support the delivery of each exercise by staffing and managing the exercise control organization; managing exercise control systems, including promoting a common operating picture and situational awareness among all exercise control and evaluation staff; analyzing exercise tools and methodology usage during exercises; and tracking the completion of exercise objectives.

Tetra Tech will develop a draft after action report (AAR) and review it with the County and Exercise Planning Team at an after action meeting. During the meeting, Tetra Tech will develop an improvement plan (IP) that identifies and articulates specific corrective actions, responsible agencies, and key milestones tied to the recommendations identified in the AAR. Tetra Tech will then finalize the AAR and IP matrix as a combined document.

Hazard Mitigation Planning Activities and Community Rating System (CRS) Technical Assistance

Tetra Tech will work with the County to conduct hazard mitigation planning activities, including updating the County’s HMP and providing technical assistance to help the County maintain or improve its Class 8 CRS rating.

Tetra Tech will conduct all hazard mitigation planning processes in accordance with DMA 2000 requirements for HMPs, and in accordance with the CRS Activity 510 process to ensure maximum credit in this fundamental CRS area. Tetra Tech will work with the County to reconvene its HMP Planning Team and augment it with additional stakeholders to increase the number of CRS points earned. Tetra Tech will work with the County to develop a public involvement process, including a project website and targeted outreach program, to maximize public participation in the planning process. Tetra Tech will incorporate available reports, plans, and other documents into the HMP, and will document where each resource was used in updating the HMP. Tetra Tech will then assess the hazards of concern to the County, including the flood hazard, and assess the problems caused by these hazards. Tetra Tech will work with the County and the Planning Team to set mitigation goals and objectives and develop mitigation actions.

Tetra Tech will compile all analysis into the HMP document and will include a jurisdiction-specific annex for the County. This approach has been lauded by FEMA reviewers in multiple FEMA regions. Tetra Tech will submit the
HMP to the State and FEMA for formal review. Tetra Tech will then work with the County and Planning Team to have the plan adopted and formally approved by FEMA.

Tetra Tech is a nationally recognized leader in providing assistance to communities that wish to enter the CRS program and those that are already in the program. Tetra Tech will provide technical assistance to the County, as requested, to help enhance the County's CRS rating.
Financial Stability

Tetra Tech is a financially sound and successful firm with fiscal year 2017 annual revenues of more than $2.7 billion and approximately 16,000 employees. Tetra Tech has a Dun & Bradstreet rating of 5A2. To demonstrate the firm’s solid financial performance, a short version of our most recent 10K Report has been included at the end of this section. However, a complete copy of our financial reports can be provided upon request.

Subcontractor Payment History

Tetra Tech subcontractor/vendor invoice payments are made in accordance with agreed upon terms that are established in written Subcontractor agreements. Accounts Payable process payments twice a week to meet payment terms established in the agreements.

Invoicing Program

Time and Expense (T&E) charges are tracked on a weekly basis using a recording system that requires Tetra Tech employees to record time on the daily basis. Expense reports are entered based on employee travel reimbursement requirements.

All charges that are entered into the T&E system will populate the invoice based on an employee’s allocation of the labor and expense charges through the use of specific project codes.

If sub consultants or temporary employees are required by contract or incorporated to meet staffing needs, the labor and expenses charges are processed via an accounts payable system. The vendor responsible for supplying the non-Tetra Tech employee is paid for their services and the charges also appear on the final invoice with the usual Tetra Tech charges.

Depending on contract requirements, the submission of timesheet and expense reports backup will be copied and submitted along with the invoice.

Tetra Tech will invoice on a monthly basis, based upon our accounting period calendar, unless an alternative invoice schedule has been agreed upon (bi-monthly, etc).

Financial Handling of Multiple Contracts

Tetra Tech was activated for over 60 new and existing contracts following Hurricane Irma for debris monitoring and program management services. Due to the high volume of projects, our local Tetra Tech office utilized the support of several other Tetra Tech divisions to provide the level of support that was needed for all financial aspects of these projects. This included project setup, payroll, Accounts Receivable, Accounts Payable and procurement. Projects were billed in accordance with the contract terms to include the necessary backup documentation to satisfy contract and FEMA reimbursement criteria. Listed below are several of the clients we assisted following Hurricane Irma, along with the total amount invoiced and the point of contact. Additional information can be provided upon request.

5-1: Representative Sample of Financial Handling

<table>
<thead>
<tr>
<th>Client</th>
<th>Client Contact Information</th>
<th>Contract Amount</th>
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<tbody>
<tr>
<td>Miami-Dade County, Florida</td>
<td>Michael Fernandez, Solid Waste</td>
<td>$17,010,000.00</td>
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<td></td>
<td><a href="mailto:Michael.fernandez@miamidade.gov">Michael.fernandez@miamidade.gov</a></td>
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<tr>
<td>Collier County, Florida</td>
<td>Dan Rodriguez, Director</td>
<td>$15,786,154.00</td>
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<tr>
<td></td>
<td><a href="mailto:danrodriguez@colliergov.net">danrodriguez@colliergov.net</a></td>
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<tr>
<td>Miami, City of, Florida</td>
<td>Mario Núñez, Director</td>
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<tr>
<td></td>
<td><a href="mailto:MFNunez@miamigov.com">MFNunez@miamigov.com</a></td>
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<tr>
<td>Client</td>
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<td>Broward County, Florida</td>
<td>Jeff Turpin, Assistant Director</td>
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<td><a href="mailto:Jwaters02@seminolecountyfl.gov">Jwaters02@seminolecountyfl.gov</a></td>
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Section 5: Financial Resources
Form 10-k
TETRA TECH, INC.

Delaware
(State or other jurisdiction of incorporation or organization)  95-4148514
(I.R.S. Employer Identification No.)

3475 East Foothill Boulevard, Pasadena, California 91107
(Address of principal executive offices) (Zip Code)

(626) 351-4664
(Registrant's telephone number, including area code)

Common Stock, $0.01 par value
(Title of class)

The NASDAQ Stock Market LLC
(Name of exchange)

Securities registered pursuant to Section 12(b) of the Act:

Securities registered pursuant to Section 12(g) of the Act:

None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Website, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐

Indicate by check mark whether disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act. Large accelerated filer ☒ Accelerated filer ☐ Non-accelerated filer (Do not check if a smaller reporting company) ☐ Smaller reporting company ☐ Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☒

The aggregate market value of the registrant's common stock held by non-affiliates on April 2, 2017, was $2.3 billion (based upon the closing price of a share of registrant's common stock as reported by the Nasdaq National Market on that date).

On November 1, 2017, 55,722,592 shares of the registrant's common stock were outstanding.

DOCUMENT INCORPORATED BY REFERENCE

Portions of registrant's Proxy Statement for its 2018 Annual Meeting of Stockholders are incorporated by reference in Part III of this report where indicated.
REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of Tetra Tech, Inc.:  

In our opinion, the accompanying consolidated balance sheets and the related consolidated statements of income, comprehensive income (loss), equity and cash flows present fairly, in all material respects, the financial position of Tetra Tech, Inc. and its subsidiaries as of October 1, 2017 and October 2, 2016, and the results of their operations and their cash flows for each of the three years in the period ended October 1, 2017 in conformity with accounting principles generally accepted in the United States of America. In addition, in our opinion, the financial statement schedule listed in the accompanying index presents fairly, in all material respects, the information set forth therein when read in conjunction with the related consolidated financial statements. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of October 1, 2017, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). The Company's management is responsible for these financial statements and financial statement schedule, for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control over Financial Reporting, appearing under Item 9A of this Form 10-K. Our responsibility is to express opinions on these financial statements, on the financial statement schedule, and on the Company's internal control over financial reporting based on our integrated audits. We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions. 

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements. 

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/\ PRICEWATERHOUSECOOPERS LLP

PricewaterhouseCoopers LLP
Los Angeles, California
November 20, 2017
TETRA TECH, INC.
Consolidated Balance Sheets
(in thousands, except par value)

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<th>ASSETS</th>
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<tr>
<td>Income taxes receivable</td>
<td>13,312</td>
<td>14,371</td>
</tr>
<tr>
<td><strong>Total current assets</strong></td>
<td>1,042,023</td>
<td>935,428</td>
</tr>
<tr>
<td>Property and equipment – net</td>
<td>56,835</td>
<td>67,827</td>
</tr>
<tr>
<td>Investments in and advances to unconsolidated joint ventures</td>
<td>2,700</td>
<td>2,064</td>
</tr>
<tr>
<td>Goodwill</td>
<td>740,886</td>
<td>717,988</td>
</tr>
<tr>
<td>Intangible assets – net</td>
<td>26,688</td>
<td>48,962</td>
</tr>
<tr>
<td>Deferred income taxes</td>
<td>1,763</td>
<td>630</td>
</tr>
<tr>
<td>Other long-term assets</td>
<td>31,850</td>
<td>27,880</td>
</tr>
<tr>
<td><strong>Total assets</strong></td>
<td>$1,902,745</td>
<td>$1,800,779</td>
</tr>
</tbody>
</table>

**LIABILITIES AND EQUITY**

<table>
<thead>
<tr>
<th>Current liabilities:</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounts payable</td>
<td>$177,638</td>
<td>$158,773</td>
</tr>
<tr>
<td>Accrued compensation</td>
<td>143,408</td>
<td>129,184</td>
</tr>
<tr>
<td>Billings in excess of costs on uncompleted contracts</td>
<td>117,499</td>
<td>88,223</td>
</tr>
<tr>
<td>Current portion of long-term debt</td>
<td>15,588</td>
<td>15,510</td>
</tr>
<tr>
<td>Current contingent earn-out liabilities</td>
<td>2,024</td>
<td>4,296</td>
</tr>
<tr>
<td>Other current liabilities</td>
<td>81,511</td>
<td>85,100</td>
</tr>
<tr>
<td><strong>Total current liabilities</strong></td>
<td>537,668</td>
<td>481,086</td>
</tr>
<tr>
<td>Deferred income taxes</td>
<td>43,781</td>
<td>60,348</td>
</tr>
<tr>
<td>Long-term debt</td>
<td>341,283</td>
<td>331,501</td>
</tr>
<tr>
<td>Long-term contingent earn-out liabilities</td>
<td>414</td>
<td>4,461</td>
</tr>
<tr>
<td>Other long-term liabilities</td>
<td>50,975</td>
<td>53,980</td>
</tr>
<tr>
<td>Commitments and contingencies (Note 17)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Equity:**

<table>
<thead>
<tr>
<th>Preferred stock – Authorized, 2,000 shares of $0.01 par value; no shares issued and outstanding at October 1, 2017 and October 2, 2016</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Common stock – Authorized, 150,000 shares of $0.01 par value; issued and outstanding, 55,873 and 57,042 shares at October 1, 2017 and October 2, 2016, respectively</td>
<td>559</td>
<td>570</td>
</tr>
<tr>
<td>Additional paid-in capital</td>
<td>193,835</td>
<td>260,340</td>
</tr>
<tr>
<td>Accumulated other comprehensive loss</td>
<td>(98,500)</td>
<td>(128,008)</td>
</tr>
<tr>
<td>Retained earnings</td>
<td>832,559</td>
<td>736,357</td>
</tr>
<tr>
<td>Tetra Tech stockholders' equity</td>
<td>928,453</td>
<td>869,259</td>
</tr>
<tr>
<td>Noncontrolling interests</td>
<td>171</td>
<td>144</td>
</tr>
<tr>
<td><strong>Total equity</strong></td>
<td>$928,624</td>
<td>$869,403</td>
</tr>
<tr>
<td><strong>Total liabilities and equity</strong></td>
<td>$1,902,745</td>
<td>$1,800,779</td>
</tr>
</tbody>
</table>

See accompanying Notes to Consolidated Financial Statements.
**TETRA TECH, INC.**

**Consolidated Statements of Income**

*(In thousands, except per share data)*

<table>
<thead>
<tr>
<th></th>
<th>October 1, 2017</th>
<th>October 2, 2016</th>
<th>September 27, 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>$2,753,360</td>
<td>$2,583,469</td>
<td>$2,299,321</td>
</tr>
<tr>
<td>Subcontractor costs</td>
<td>(719,350)</td>
<td>(654,264)</td>
<td>(580,606)</td>
</tr>
<tr>
<td>Other costs of revenue</td>
<td>(1,680,372)</td>
<td>(1,598,994)</td>
<td>(1,402,925)</td>
</tr>
<tr>
<td>Gross profit</td>
<td>353,638</td>
<td>330,211</td>
<td>315,790</td>
</tr>
<tr>
<td>Selling, general and administrative expenses</td>
<td>(177,219)</td>
<td>(171,985)</td>
<td>(170,456)</td>
</tr>
<tr>
<td>Acquisition and integration expenses</td>
<td>—</td>
<td>(19,548)</td>
<td>—</td>
</tr>
<tr>
<td>Contingent consideration – fair value adjustments</td>
<td>6,923</td>
<td>(2,823)</td>
<td>3,113</td>
</tr>
<tr>
<td>Impairment of goodwill and other intangible assets</td>
<td>—</td>
<td>—</td>
<td>(60,763)</td>
</tr>
<tr>
<td>Operating income</td>
<td>183,342</td>
<td>135,855</td>
<td>87,684</td>
</tr>
<tr>
<td>Interest income</td>
<td>729</td>
<td>996</td>
<td>680</td>
</tr>
<tr>
<td>Interest expense</td>
<td>(12,310)</td>
<td>(12,385)</td>
<td>(8,043)</td>
</tr>
<tr>
<td>Income before income tax expense</td>
<td>171,761</td>
<td>124,466</td>
<td>80,321</td>
</tr>
<tr>
<td>Income tax expense</td>
<td>(53,844)</td>
<td>(40,613)</td>
<td>(41,093)</td>
</tr>
<tr>
<td>Net income including noncontrolling interests</td>
<td>117,917</td>
<td>83,853</td>
<td>39,228</td>
</tr>
<tr>
<td>Net income from noncontrolling interests</td>
<td>(43)</td>
<td>(70)</td>
<td>(154)</td>
</tr>
<tr>
<td>Net income attributable to Tetra Tech</td>
<td>$117,874</td>
<td>$83,783</td>
<td>$39,074</td>
</tr>
<tr>
<td><strong>Earnings per share attributable to Tetra Tech:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic</td>
<td>$0.208</td>
<td>$0.144</td>
<td>$0.064</td>
</tr>
<tr>
<td>Diluted</td>
<td>$0.204</td>
<td>$0.142</td>
<td>$0.064</td>
</tr>
<tr>
<td>Weighted-average common shares outstanding:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic</td>
<td>56,911</td>
<td>58,186</td>
<td>60,913</td>
</tr>
<tr>
<td>Diluted</td>
<td>57,913</td>
<td>58,966</td>
<td>61,532</td>
</tr>
<tr>
<td>Cash dividends paid per share</td>
<td>$0.38</td>
<td>$0.34</td>
<td>$0.30</td>
</tr>
</tbody>
</table>

See accompanying Notes to Consolidated Financial Statements.
TETRA TECH, INC.
Consolidated Statements of Cash Flows
(in thousands)

<table>
<thead>
<tr>
<th></th>
<th>October 1, 2017</th>
<th>October 2, 2016</th>
<th>September 27, 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cash flows from operating activities:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net income including noncontrolling interests</td>
<td>$117,017</td>
<td>$83,853</td>
<td>$39,228</td>
</tr>
<tr>
<td>Adjustments to reconcile net income to net cash from operating activities:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depreciation and amortization</td>
<td>45,756</td>
<td>45,588</td>
<td>44,201</td>
</tr>
<tr>
<td>Equity in income of unconsolidated joint ventures</td>
<td>(4,699)</td>
<td>(1,652)</td>
<td>(5,131)</td>
</tr>
<tr>
<td>Distributions of earnings from unconsolidated joint ventures</td>
<td>4,052</td>
<td>2,796</td>
<td>2,552</td>
</tr>
<tr>
<td>Stock-based compensation</td>
<td>13,450</td>
<td>12,964</td>
<td>10,926</td>
</tr>
<tr>
<td>Excess tax benefits from stock-based compensation</td>
<td>—</td>
<td>(918)</td>
<td>(172)</td>
</tr>
<tr>
<td>Deferred income taxes</td>
<td>(9,957)</td>
<td>6,651</td>
<td>8,412</td>
</tr>
<tr>
<td>Provision (recovery) for doubtful accounts</td>
<td>2,847</td>
<td>8,082</td>
<td>(1,034)</td>
</tr>
<tr>
<td>Impairment of goodwill and other intangible assets</td>
<td>—</td>
<td>—</td>
<td>(60,763)</td>
</tr>
<tr>
<td>Fair value adjustments to contingent consideration</td>
<td>(6,923)</td>
<td>2,823</td>
<td>(3,113)</td>
</tr>
<tr>
<td>Lease termination costs and related asset impairment</td>
<td>—</td>
<td>2,946</td>
<td>342</td>
</tr>
<tr>
<td>Gain on disposal of property and equipment</td>
<td>(103)</td>
<td>(537)</td>
<td>(6,014)</td>
</tr>
<tr>
<td>Changes in operating assets and liabilities, net of effects of business acquisitions:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounts receivable</td>
<td>(64,781)</td>
<td>9,062</td>
<td>40,345</td>
</tr>
<tr>
<td>Prepaid expenses and other assets</td>
<td>(8,317)</td>
<td>2,720</td>
<td>12,970</td>
</tr>
<tr>
<td>Accounts payable</td>
<td>18,597</td>
<td>(5,602)</td>
<td>(26,901)</td>
</tr>
<tr>
<td>Accrued compensation</td>
<td>13,413</td>
<td>8,434</td>
<td>(7,676)</td>
</tr>
<tr>
<td>Billings in excess of costs on uncompleted contracts</td>
<td>28,298</td>
<td>(13,874)</td>
<td>(10,119)</td>
</tr>
<tr>
<td>Other liabilities</td>
<td>2,147</td>
<td>(19,321)</td>
<td>(7,143)</td>
</tr>
<tr>
<td>Income taxes receivable/payable</td>
<td>(13,725)</td>
<td>(4,595)</td>
<td>7,911</td>
</tr>
<tr>
<td>Net cash provided by operating activities</td>
<td>137,992</td>
<td>142,020</td>
<td>162,847</td>
</tr>
<tr>
<td><strong>Cash flows from investing activities:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital expenditures</td>
<td>(9,741)</td>
<td>(11,945)</td>
<td>(24,296)</td>
</tr>
<tr>
<td>Payments for business acquisitions, net of cash acquired</td>
<td>(8,039)</td>
<td>(81,259)</td>
<td>(1,680)</td>
</tr>
<tr>
<td>Changes in restricted cash</td>
<td>—</td>
<td>(2,519)</td>
<td>4,530</td>
</tr>
<tr>
<td>Proceeds from sale of property and equipment</td>
<td>905</td>
<td>3,076</td>
<td>10,426</td>
</tr>
<tr>
<td>Investments in unconsolidated joint ventures</td>
<td>(85)</td>
<td>(1,368)</td>
<td>—</td>
</tr>
<tr>
<td>Net cash used in investing activities</td>
<td>(16,960)</td>
<td>(94,015)</td>
<td>(21,020)</td>
</tr>
<tr>
<td><strong>Cash flows from financing activities:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Payments on long-term debt</td>
<td>(233,865)</td>
<td>(148,485)</td>
<td>(75,459)</td>
</tr>
<tr>
<td>Proceeds from borrowings</td>
<td>243,553</td>
<td>229,049</td>
<td>64,794</td>
</tr>
<tr>
<td>Payments of contingent earn-out liabilities</td>
<td>(1,319)</td>
<td>(3,251)</td>
<td>(3,199)</td>
</tr>
<tr>
<td>Debt pre-payment costs</td>
<td>—</td>
<td>(1,935)</td>
<td>(1,457)</td>
</tr>
<tr>
<td>Distributions paid to noncontrolling interests</td>
<td>(24)</td>
<td>(402)</td>
<td>(515)</td>
</tr>
<tr>
<td>Excess tax benefits from stock-based compensation</td>
<td>—</td>
<td>—</td>
<td>172</td>
</tr>
<tr>
<td>Repurchases of common stock</td>
<td>(100,000)</td>
<td>(99,500)</td>
<td>(100,500)</td>
</tr>
<tr>
<td>Net proceeds from issuance of common stock</td>
<td>18,565</td>
<td>17,953</td>
<td>10,825</td>
</tr>
<tr>
<td>Dividends paid</td>
<td>(21,675)</td>
<td>(19,735)</td>
<td>(18,240)</td>
</tr>
<tr>
<td>Net cash used in financing activities</td>
<td>(94,772)</td>
<td>(25,388)</td>
<td>(122,579)</td>
</tr>
<tr>
<td>Effect of foreign exchange rate changes on cash</td>
<td>3,256</td>
<td>5,166</td>
<td>(5,301)</td>
</tr>
<tr>
<td>Net increase in cash and cash equivalents</td>
<td>29,516</td>
<td>25,133</td>
<td>12,947</td>
</tr>
<tr>
<td>Cash and cash equivalents at beginning of year</td>
<td>160,459</td>
<td>132,326</td>
<td>122,379</td>
</tr>
<tr>
<td>Cash and cash equivalents at end of year</td>
<td>$189,975</td>
<td>$160,459</td>
<td>$135,326</td>
</tr>
<tr>
<td><strong>Supplemental information:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash paid during the year for:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest</td>
<td>$11,504</td>
<td>$12,175</td>
<td>$7,323</td>
</tr>
<tr>
<td>Income taxes, net of refunds of $2.1 million, $3.2 million and $5.4 million</td>
<td>$72,578</td>
<td>$35,273</td>
<td>$23,268</td>
</tr>
</tbody>
</table>

See accompanying Notes to Consolidated Financial Statements.
EXHIBIT 1A: COST PROPOSAL FORM

COUNTY and the JURISDICTION(s)’ intention is to award a contract for services with CONSULTANT to be reimbursed for certain costs and expenses using a mutually agreed upon formula. Prices quoted shall include direct costs, indirect, and overhead costs, and profits. The hourly labor rates shall include all applicable overhead and profit. Non-labor related project costs will be billed to COUNTY or JURISDICTION(s) at cost without mark-up. Proposer may, but is not required to, submit individual cost proposals for each entity. The Proposer must provide:

- Classifications/titles and hourly rates for all proposed key personnel and indicate whether key personnel are CONSULTANT’s or subcontractor’s staff;
- Provide a description of the type of service provided by each labor category and skill class.
- A price breakdown for all tasks required; including labor, job titles, estimated number of hours each job title is required to work on each task.

<table>
<thead>
<tr>
<th>POSITIONS</th>
<th>HOURLY RATES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Manager</td>
<td>$ 85.00</td>
</tr>
<tr>
<td>Operations Managers</td>
<td>$ 65.00</td>
</tr>
<tr>
<td>Scheduler/Expeditors</td>
<td>$ 50.00</td>
</tr>
<tr>
<td>GIS Analyst</td>
<td>$ 59.00</td>
</tr>
<tr>
<td>Field Supervisors</td>
<td>$ 48.00</td>
</tr>
<tr>
<td>Debris Site/Tower Monitors</td>
<td>$ 36.00</td>
</tr>
<tr>
<td>Environmental Specialist</td>
<td>$ 75.00</td>
</tr>
<tr>
<td>Data Manager</td>
<td>$ 55.00</td>
</tr>
<tr>
<td>Field Coordinators (Crew Monitors)</td>
<td>$ 36.00</td>
</tr>
<tr>
<td>Load Ticket Data Entry Clerks (QA/QC)</td>
<td>$ 0.00</td>
</tr>
<tr>
<td>Billing/Invoice Analysts</td>
<td>$ 45.00</td>
</tr>
<tr>
<td>Project Coordinators</td>
<td>$ 34.00</td>
</tr>
<tr>
<td>FEMA Reimbursement Specialists</td>
<td>$ 145.00</td>
</tr>
<tr>
<td>Public Assurance Coordinators</td>
<td>$ 110.00</td>
</tr>
</tbody>
</table>

OTHER REQUIRED POSITIONS

Proposer may include other positions with hourly rates. (See Attached)
EXHIBIT 1A: COST PROPOSAL FORM (CON’T)

PLANNING SERVICES PRIOR TO A DISASTER

<table>
<thead>
<tr>
<th>Planning Services</th>
<th>Job Title</th>
<th># of Hours of Consulting</th>
<th>Total Cost *</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Assistance in securing contractors for debris clearance and removal involving document development, review, and/or selection assistance.</td>
<td>Planner II</td>
<td>20</td>
<td>$ 2,500.00</td>
</tr>
<tr>
<td>2 Disaster Management Planning to include written plan reviews, validation, updating, and recommendations for improvements.</td>
<td>Planner II</td>
<td>60</td>
<td>$ 7,500.00</td>
</tr>
<tr>
<td>3 Participation in annual workshops or planning meetings.</td>
<td>Planner II</td>
<td>Included at no charge</td>
<td>Included at no charge</td>
</tr>
</tbody>
</table>

Proposer may include other consulting services.

<table>
<thead>
<tr>
<th>Training Title</th>
<th>Trainer Title</th>
<th># of Hours of Training</th>
<th>Total Cost *</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Disaster Preparedness Specific to Sacramento County covering multi-agency coordination, public relations, debriseligibility, and FEMA Public Assistance Reimbursement Training</td>
<td>Planner II</td>
<td>24</td>
<td>$ 3,000.00</td>
</tr>
</tbody>
</table>

Proposer may include other training.

* The total costs listed above are estimates only. Total costs will be negotiated once the full scope of work and staffing levels are determined and agreed upon. These estimates are based on a $125 hourly rate for a Planner II.
EXHIBIT 1B

**AGREEMENT DEFAULT:**

**Agreement Default/Early Termination**
Please list all agreement defaults and early terminations within the last 5 years beginning with the most recent.

<table>
<thead>
<tr>
<th>Entity Name</th>
<th>Contact Name &amp; Phone Number</th>
<th>Type of Service Provided</th>
<th>Tons/Year</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td>Tetra Tech has not had any agreement defaults or early terminations related to the services requested in this RFP.</td>
</tr>
</tbody>
</table>
Pricing

Additional Positions

The following exhibits provide a listing of additional positions that may be required to complete the tasks listed in the County’s request for proposal.

### Exhibit 6-1: Environmental Debris Removal Monitoring/Consulting (Wildfires)

<table>
<thead>
<tr>
<th>Positions</th>
<th>Hourly Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Project Manager</td>
<td>$225.00</td>
</tr>
<tr>
<td>Health and Safety Officer</td>
<td>$90.00</td>
</tr>
<tr>
<td>Operations Chief</td>
<td>$99.00</td>
</tr>
<tr>
<td>Division Supervisors</td>
<td>$69.00</td>
</tr>
<tr>
<td>Task Force Leader – Cleanup Site</td>
<td>$55.00</td>
</tr>
<tr>
<td>Task Force Leader – Materials Receiving Facilities</td>
<td>$95.00</td>
</tr>
<tr>
<td>Site Inspector</td>
<td>$85.00</td>
</tr>
<tr>
<td>Planning Chief</td>
<td>$95.00</td>
</tr>
<tr>
<td>Planning Assistant</td>
<td>$45.00</td>
</tr>
<tr>
<td>GIS Professional</td>
<td>$59.00</td>
</tr>
<tr>
<td>Logistic Chief</td>
<td>$85.00</td>
</tr>
<tr>
<td>Financial/Administrative</td>
<td>$95.00</td>
</tr>
<tr>
<td>Accounting and Administrative Staff</td>
<td>$45.00</td>
</tr>
</tbody>
</table>

### Exhibit 6-2: Homeland Security and Emergency Management Planning and Other Consulting Services

<table>
<thead>
<tr>
<th>Positions</th>
<th>Hourly Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative Specialist I</td>
<td>$40.00</td>
</tr>
<tr>
<td>Administrative Specialist II</td>
<td>$48.00</td>
</tr>
<tr>
<td>Research Assistant</td>
<td>$51.00</td>
</tr>
<tr>
<td>Proposal Coordinator</td>
<td>$53.00</td>
</tr>
<tr>
<td>Comm. Technician</td>
<td>$57.00</td>
</tr>
<tr>
<td>Help Desk Operator</td>
<td>$62.00</td>
</tr>
<tr>
<td>Administrative Specialist III</td>
<td>$64.00</td>
</tr>
<tr>
<td>Research Assistant II</td>
<td>$66.00</td>
</tr>
<tr>
<td>Analytical Aide</td>
<td>$75.00</td>
</tr>
<tr>
<td>Planning Aide</td>
<td>$80.00</td>
</tr>
<tr>
<td>Consulting Aide</td>
<td>$85.00</td>
</tr>
<tr>
<td>Engineer I</td>
<td>$85.00</td>
</tr>
<tr>
<td>Positions</td>
<td>Hourly Rate</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Assistant Planner/Scientist/Assessor/Analyst/Environmental Specialist</td>
<td>$95.00</td>
</tr>
<tr>
<td>Program Planner/Scientist/Assessor/Analyst/Environmental Specialist</td>
<td>$100.00</td>
</tr>
<tr>
<td>Consultant Planner/Scientist/Assessor/Analyst/Environmental Specialist</td>
<td>$110.00</td>
</tr>
<tr>
<td>Engineer II</td>
<td>$110.00</td>
</tr>
<tr>
<td>Public Assistance/Grant Management Consultant</td>
<td>$115.00</td>
</tr>
<tr>
<td>Engineer III</td>
<td>$120.00</td>
</tr>
<tr>
<td>Project Manager/Consultant/Planner/Scientist/Assessor/Analyst/</td>
<td>$125.00</td>
</tr>
<tr>
<td>Environmental Specialist II</td>
<td></td>
</tr>
<tr>
<td>Project Manager/Consultant/Planner/Scientist/Assessor/Analyst/Environmental Specialist III</td>
<td>$135.00</td>
</tr>
<tr>
<td>Senior Public Assistance/Grant Management Consultant</td>
<td>$135.00</td>
</tr>
<tr>
<td>Senior Engineer I</td>
<td>$135.00</td>
</tr>
<tr>
<td>Senior Planner/Assessor/Scientist/Analyst</td>
<td>$145.00</td>
</tr>
<tr>
<td>Supervising Public Assistance Consultant</td>
<td>$150.00</td>
</tr>
<tr>
<td>Senior Consultant/Planner/Scientist/Assessor/Analyst/Environmental Specialist</td>
<td>$150.00</td>
</tr>
<tr>
<td>Supervising Consultant/Planner/Scientist/Analyst/Environmental Specialist</td>
<td>$158.00</td>
</tr>
<tr>
<td>Program Manager</td>
<td>$165.00</td>
</tr>
<tr>
<td>Senior Engineer II</td>
<td>$165.00</td>
</tr>
<tr>
<td>Senior Program Manager</td>
<td>$175.00</td>
</tr>
<tr>
<td>Principal Consultant/Planner/Scientist/Assessor/Analyst</td>
<td>$195.00</td>
</tr>
<tr>
<td>Senior Engineer III</td>
<td>$195.00</td>
</tr>
<tr>
<td>Principal in Charge/Executive Consultant/Planner/Scientist/Assessor</td>
<td>$225.00</td>
</tr>
<tr>
<td>Subject Matter Expert</td>
<td>$244.00</td>
</tr>
</tbody>
</table>

Appeals Support: The rates for legal services such as those provided by the renowned Senior FEMA Attorney, Mr. Ernie Abbott and other attorneys shall range from $150/hour to $600/hour.
Price Breakdown

As requested in the County’s pricing form, Exhibit 6-3 provides a price breakdown for all tasks required, including labor, job titles, and an estimated number of hours each job title is required to work on the task. The estimate is based on the most likely threat identified in the County’s disaster debris management plan (DDMP), involving a severe storm with flooding. We based our estimate on 200,000 cubic yards (CY) of debris to be collected within a 30-day period. However, this scenario should only be used as an example since staffing numbers and number of hours will vary greatly depending on the type and severity of the actual disaster.

Exhibit 6-3: Estimate Based on Flooding Scenario

<table>
<thead>
<tr>
<th>Positions</th>
<th>Hours</th>
<th>Hourly Rate</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Manager</td>
<td>300</td>
<td>$85.00</td>
<td>$25,500.00</td>
</tr>
<tr>
<td>Operations Managers</td>
<td>300</td>
<td>$65.00</td>
<td>$19,500.00</td>
</tr>
<tr>
<td>Scheduler/Expeditors</td>
<td>32</td>
<td>$50.00</td>
<td>$1,600.00</td>
</tr>
<tr>
<td>GIS Analyst</td>
<td>8</td>
<td>$59.00</td>
<td>$472.00</td>
</tr>
<tr>
<td>Field Supervisor</td>
<td>720</td>
<td>$48.00</td>
<td>$34,560.00</td>
</tr>
<tr>
<td>Debris Site/Tower Monitors</td>
<td>1,920</td>
<td>$36.00</td>
<td>$69,120.00</td>
</tr>
<tr>
<td>Environmental Specialist</td>
<td>8</td>
<td>$75.00</td>
<td>$600.00</td>
</tr>
<tr>
<td>Data Manager</td>
<td>300</td>
<td>$55.00</td>
<td>$16,500.00</td>
</tr>
<tr>
<td>Field Coordinators (Crew Monitors)</td>
<td>3,120</td>
<td>$36.00</td>
<td>$112,320.00</td>
</tr>
<tr>
<td>Load Ticket Data Entry Clerks</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Billing/Invoice Analysts</td>
<td>40</td>
<td>$45.00</td>
<td>$1,800.00</td>
</tr>
<tr>
<td>Project Coordinators</td>
<td>300</td>
<td>$34.00</td>
<td>$10,200.00</td>
</tr>
<tr>
<td>FEMA Reimbursement Specialist</td>
<td>8</td>
<td>$145.00</td>
<td>$1,160.00</td>
</tr>
<tr>
<td>Public Assistance Coordinators</td>
<td>16</td>
<td>$110.00</td>
<td>$1,760.00</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>$295,092.00</strong></td>
</tr>
</tbody>
</table>

Staffing Assumptions

- Average truckload of debris hauled is 50 CY.
- The average truck-to-loading equipment ratio will be 2:1.
- The average number of loads per day will be five loads. This takes into account locations of the debris management sites and FDS included in the County’s DDMP (NARS, Kiefer Landfill, SATS, Delta).
Commitment to Respond

Clients count on us to respond in their time of need, and we deliver. The firm has never failed to respond to our clients’ deployment and mobilization needs, regardless of location or disaster. Tetra Tech understands the organized chaos of an effective response and recovery. Our team has successfully deployed large-scale mobilizations of hundreds of staff and thousands of dollars’ worth of equipment to multiple clients in a matter of days and on very short notice.

Additionally, we operate our projects with an Incident Command System (ICS) structure, especially for those that include unique or time-sensitive requirements. The Tetra Tech Team has a proven track record of meeting even the most challenging staffing level requirements. We can rapidly provide additional well-trained support in a cost-effective manner by accessing qualified staff, as demonstrated in the additional examples of our staffing for nationally significant events:

- **Hurricane Harvey** – Assisting 40 coastal and inland local governments from Corpus Christi to Orange County, Texas to address short and long-term recovery operations. Communities include the City of Houston, Harris County, Jefferson County, Victoria, Montgomery and Fort Bend Counties.
- **Hurricane Irma** – Activated to 60 communities throughout the State of Florida impacted by storm surge, high winds, and rainfall associated with Hurricane Irma.
- **California Wildfires** – Mobilized over 100 environmental scientists, engineers and responders to the State of California Office of Emergency Services (CalOES) and CalRecycle to manage the cleanup and documentation associated with the wildfires from 2015 - 2018.
- **Hurricane Matthew** – Activated in four states on the east coast over 800 trained responders on behalf of over 40 clients in the aftermath of Hurricane Matthew.
- **Louisiana Great Flood** – Provided PA and IA staff as well as managed flood plain offices following the 2016 flood. This included staff in eight parishes across south Louisiana.
- **Hurricane Sandy** - Provided over 150 trained personnel throughout New York within 48 hours of customer request to support both PA and Hazard Mitigation Grant Program (HMGP) programs. Over 75 of these employees were dedicated to supporting the hazard mitigation program, which included policy advisors, cost estimators, grant managers, and BCA analysts.
- **Hurricane Ike** - **Activated on behalf of 118 cities and counties spanning the Gulf Coast from Brownsville on the southern tip of Texas to the southern tip of Louisiana in response to Hurricane Ike.** We provided more than 3,000 emergency response personnel immediately after the storm to assist with response and recovery. Our firm provided services simultaneously for 85 clients.
- **Hurricane Katrina** - Without relying on subcontractor staff, Tetra Tech supported the START Region 6 prime contractor during the Hurricane Katrina response by providing 130 professional-level and trained responders. At the same time, as prime contractor for Region 4 START, we provided another 100 Tetra Tech staff to support the Katrina response in Region 4 states.

Tetra Tech is committed to respond to the County with the required resources within 24 hours of receipt of a notice to proceed.

Contact Information

Our main point of contact for contractual matters and notifications regarding activations is as follows:

Betty Kamara, Contract Administrator
(407) 803-2251 | betty.kamara@tetratech.com
Proximity of Operations

Tetra Tech's corporate office is located in Pasadena, California. The physical address is 3475 E. Foothill Boulevard, Pasadena, CA 91107.

Additionally, Tetra Tech maintains 28 offices in the State of California, including 3 offices in the County. The following offices are only a short drive from the County:

- Rancho Cordova (23 minutes)
- McClellan (34 minutes)
- Folsom (37 minutes)
- Lafayette (1 hour 34 minutes)
- Dublin, CA (1 hour 47 minutes)
- Oakland (1 hour 48 minutes)
- San Francisco (2 hours)

Extent of Resources Outside of Sacramento County

Since its founding, Tetra Tech has substantially increased the size and scope of its business. Today, Tetra Tech employs 16,000 personnel in 400 offices worldwide, including 28 offices in California. Our workforce includes a broader mix of skill sets and includes engineers, statisticians, accountants, planners, and network and communications specialists. We can also supplement our workforce utilizing several other large federal government contracts that Tetra Tech maintains.

Exhibit 7-1 identifies the personnel resources available for immediate deployment following a debris-generating event and activation. The numbers below represent our staff immediately available to mobilize to the County. Field positions will be back-filled with local residents over the first few days of any engagement at the County’s direction and when available.

Additionally, a list of available equipment resources is included in Exhibit 7-2.

<table>
<thead>
<tr>
<th>Resource</th>
<th>Total Number of Personnel Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Principals</td>
<td>10</td>
</tr>
<tr>
<td>Project Managers</td>
<td>75</td>
</tr>
<tr>
<td>Operations Managers</td>
<td>100</td>
</tr>
<tr>
<td>Collection Monitors</td>
<td>1,500*</td>
</tr>
<tr>
<td>Disposal Monitors</td>
<td>500*</td>
</tr>
<tr>
<td>Field Supervisors (10:1 ratio)</td>
<td>250*</td>
</tr>
<tr>
<td>Project Coordinators (50:1 ratio)</td>
<td>75*</td>
</tr>
<tr>
<td>Data Entry/Clerical</td>
<td>150*</td>
</tr>
</tbody>
</table>

* Indicates available Tetra Tech resources. Tetra Tech will staff positions with locally hired residents whenever possible.
supplies capable of supporting over 100 simultaneous recovery operations for over 90 days. Tetra Tech has consistently deployed large-scale mobilizations of hundreds of staff and thousands of dollars’ worth of equipment to multiple clients in a matter of days and on very short notice. Exhibit 7-2 lists available equipment and facilities readily available upon activation.

Exhibit 7-2: Available Equipment

<table>
<thead>
<tr>
<th>FIELD DOCUMENTS* CURRENTLY IN THE WAREHOUSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADMS Handheld Units</td>
</tr>
<tr>
<td>Time and Materials Forms</td>
</tr>
<tr>
<td>Truck Certification Forms</td>
</tr>
<tr>
<td>ADMS Ticket Stubs</td>
</tr>
<tr>
<td>Haul Out Ticket Stubs</td>
</tr>
<tr>
<td>Placards</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>KITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Manager Kits (1 per 100 monitors)</td>
</tr>
<tr>
<td>Project Coordinator Kits (1 per 100 monitors)</td>
</tr>
<tr>
<td>Human Resources Kits (1 per 100 monitors)</td>
</tr>
<tr>
<td>Collection Monitor Kits (1 per 25 monitors)</td>
</tr>
<tr>
<td>Disposal Monitor Kits (1 kit per disposal site)</td>
</tr>
<tr>
<td>Leaner/Hanger/Stump Kits (1 per 50 monitors)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EQUIPMENT**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laptops</td>
</tr>
<tr>
<td>Mifi (Mobile Wireless)</td>
</tr>
<tr>
<td>High Speed Scanners</td>
</tr>
<tr>
<td>Printers</td>
</tr>
<tr>
<td>Mobile Command Office</td>
</tr>
<tr>
<td>Gas Trucks</td>
</tr>
<tr>
<td>Modular Work Locations</td>
</tr>
<tr>
<td>Generators</td>
</tr>
<tr>
<td>Portable Facilities</td>
</tr>
</tbody>
</table>
Schedule for Debris Monitoring Operations

Based on Tetra Tech's understanding of the County and its jurisdictions' needs, we have developed a draft mobilization schedule for disaster debris monitoring operations with key project management tasks in chronological order. The project schedule is based on a severe storm with flooding as detailed in the County’s Disaster Debris Management Plan as the most likely threat; however, Tetra Tech is prepared to work with the County to adjust the timing of the specific elements below to meet the County’s needs or respond to a different type of disaster such as a wild fire.

**Exhibit 7-3: Disaster Recovery Timeline**

<table>
<thead>
<tr>
<th>Task</th>
<th>Deliverables/Milestone</th>
<th>Tetra Tech Staff</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Preparedness: Pre-Disaster Impact</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coordination and Communication</td>
<td>• Maintain phone or in-person contact with County</td>
<td>Ralph Natale, Tim Quade, Dick Hainje</td>
<td>Update every 4–6 hours or as needed</td>
</tr>
<tr>
<td></td>
<td>• Notify debris hauler</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Participate in County/FEMA/Grants Management conference calls</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-Disaster Mobilization</td>
<td>• Mobilize staff</td>
<td>Ralph Natale, Oliver Yao, Tim Quade</td>
<td>Update every 4–6 hours</td>
</tr>
<tr>
<td></td>
<td>• <strong>Start recruiting process</strong></td>
<td></td>
<td>Recruiting process will continue until staffing levels are stable</td>
</tr>
<tr>
<td></td>
<td>• Develop documentation and provide data collection/updates</td>
<td></td>
<td>(estimated 2 weeks)</td>
</tr>
<tr>
<td></td>
<td>• Project manager reports to the emergency operations center (EOC) (if requested by</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>the County)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disaster Impact</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Response: Week 1-2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management Support</td>
<td>• Issue notice to proceed</td>
<td>Tim Quade, Charles Cabrera</td>
<td>3–48 hours after impact</td>
</tr>
<tr>
<td></td>
<td>• Project managers help assess damages and coordinate with the County</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Reentry passes are distributed when entry is permitted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Debris Estimates</td>
<td>• Conduct windshield survey of debris estimate</td>
<td>Tim Quade, Oliver Yao, Ralph Natale</td>
<td>24–72 hours after impact</td>
</tr>
<tr>
<td></td>
<td>• Develop estimate cost model</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emergency Roadway Clearing</td>
<td>• Log equipment and labor hours of contractor equipment that is mobilized</td>
<td>Tim Quade, Charles Cabrera, field</td>
<td>First 70 working hours after conditions allow</td>
</tr>
<tr>
<td></td>
<td>• Develop map of impacted areas (GIS support)</td>
<td>staff</td>
<td></td>
</tr>
<tr>
<td>Truck Certification</td>
<td>• Measure volumetric capacity of truck</td>
<td>Tim Quade, field staff</td>
<td>Week 1 – project completion</td>
</tr>
<tr>
<td></td>
<td>• Photograph truck</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Certify volumetric capacity</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Apply placard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recovery: Week 1-12</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Sample Forms and Reports

As requested in the County’s RFP, sample field documents and reports have been included at the end of this section. A sample contract has also been included.

<table>
<thead>
<tr>
<th>Task</th>
<th>Deliverables/Milestone</th>
<th>Tetra Tech Staff</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ROW Field Monitoring</strong></td>
<td>• Initiate monitor training program</td>
<td>Tim Quade, field staff</td>
<td>Week 1 – project completion</td>
</tr>
<tr>
<td></td>
<td>• Deploy monitors with contractor assets</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>First Pass Completion</strong></td>
<td>• Complete first pass on all County road segments</td>
<td>Tim Quade, field staff</td>
<td>Week 5</td>
</tr>
<tr>
<td><strong>Special Projects</strong></td>
<td>• Hazardous trees</td>
<td>Tim Quade, field staff</td>
<td>Week 3 – 8 more time will be needed with certain PPDR programs</td>
</tr>
<tr>
<td></td>
<td>• Parks</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• PPDR</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Public/citizen drop-off sites</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Second Pass Completion</strong></td>
<td>• Complete second pass on all County road segments</td>
<td>Tim Quade, field staff</td>
<td>Week 8</td>
</tr>
<tr>
<td><strong>Final Pass Completion</strong></td>
<td>• Complete final pass on all County road segments</td>
<td>Tim Quade, field staff</td>
<td>Week 8-11</td>
</tr>
<tr>
<td><strong>Debris Management Sites</strong></td>
<td>• Help identify sites</td>
<td>Charles Cabrera</td>
<td>Week 1 – project completion</td>
</tr>
<tr>
<td></td>
<td>• Photograph sites</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Permitting</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Contractor operations oversight</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Final disposal</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Site remediation</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Documentation Management</strong></td>
<td>• ADMS reports</td>
<td>Jeff Dickerson, Marcos DoCanto</td>
<td>Week 1 – project completion</td>
</tr>
<tr>
<td><strong>Daily County Reporting</strong></td>
<td>• Produce daily reports</td>
<td>Marcos DoCanto, Jeff Dickerson</td>
<td>Week 1 – project completion</td>
</tr>
<tr>
<td></td>
<td>• Provide GIS updates</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Data Management/Invoice Reconciliation</strong></td>
<td>• Conduct contractor invoice reconciliation</td>
<td>Paris Atkinson</td>
<td>Week 2 – project completion</td>
</tr>
<tr>
<td></td>
<td>• Provide payment recommendations</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Document Turnover</strong></td>
<td>• Provide electronic database</td>
<td>Ralph Natale</td>
<td>Week 11–12</td>
</tr>
<tr>
<td></td>
<td>• Release hardcopy files</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Section 7: Availability, Response Time, and Support Resources
Sample Field Documents and Reports
<table>
<thead>
<tr>
<th>TIME</th>
<th>TICKET #</th>
<th>VOID</th>
<th>DRIVER NAME</th>
<th>TRUCK #</th>
<th>DEBRIS ADDRESS</th>
<th>DEBRIS CLASS</th>
<th>PRE-LOAD / NOTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>P</td>
<td></td>
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</tr>
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<td>A</td>
<td>P</td>
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<td></td>
<td></td>
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<td>A</td>
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<tr>
<td>A</td>
<td>P</td>
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</tbody>
</table>
## DISPOSAL MONITOR LOG

<table>
<thead>
<tr>
<th>Project</th>
<th>Site</th>
<th>Date</th>
<th>QC Monitor</th>
<th>#</th>
</tr>
</thead>
</table>

### COLLECTION MONITOR

<table>
<thead>
<tr>
<th>ARRIVAL</th>
<th>TICKET #</th>
<th>Last Name</th>
<th>TRUCK #</th>
<th>CAP</th>
<th>%</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Project (App./Dis./Prog.)</th>
<th>Truck Number</th>
<th>House Number</th>
<th>Street / Origin</th>
<th>Correct Zone</th>
<th>Debris Class</th>
<th>Correct Dates &amp; Times</th>
<th>Disposal Site</th>
<th>Load Call / Weight</th>
<th>ERROR NOTE</th>
</tr>
</thead>
</table>

### Legend

- ✓ = All Good
- Initials = Fixed
- X = Problem

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<table>
<thead>
<tr>
<th>HAULOUT TICKET #</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicant:</td>
<td>Disaster #</td>
</tr>
<tr>
<td>Program:</td>
<td>Contractor:</td>
</tr>
<tr>
<td>Truck #:</td>
<td>Truck Capacity:</td>
</tr>
<tr>
<td>Driver's Name:</td>
<td></td>
</tr>
<tr>
<td>TDSR Site:</td>
<td></td>
</tr>
</tbody>
</table>

**Haulout Debris Classification:**
- [ ] Vegetative Mulch
- [ ] White Goods
- [ ] Ash
- [ ] Hazardous Materials / Toxic
- [ ] C & D Mulch
- [ ] Household Hazardous Waste
- [ ] C & D Compacted
- [ ] Other:________________________

<table>
<thead>
<tr>
<th>Loading Time:</th>
<th>Loading Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitor Signature:</td>
<td>I.D. #</td>
</tr>
<tr>
<td><strong>Disposal Site Location:</strong></td>
<td><strong>Scale Ticket #:</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Load Call (%):</th>
<th>Weight (tons / lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disposal Time:</td>
<td>Disposal Date:</td>
</tr>
<tr>
<td>Monitor Name (print):</td>
<td>I.D. #</td>
</tr>
<tr>
<td>Contractor Name (print):</td>
<td>I.D. #</td>
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</table>

**Notes:**

©2015 Tetra Tech, Inc All Rights Reserved
<table>
<thead>
<tr>
<th>LOAD TICKET #</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
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<td>Program:</td>
<td>Contractor:</td>
</tr>
<tr>
<td>Truck #:</td>
<td>Truck Capacity:</td>
</tr>
<tr>
<td>Driver's Name:</td>
<td>ROE/WO#:</td>
</tr>
<tr>
<td>House #:</td>
<td>Street / Load Origin:</td>
</tr>
<tr>
<td>Zone #:</td>
<td></td>
</tr>
<tr>
<td>Debris Classification:</td>
<td></td>
</tr>
<tr>
<td>☐ Vegetative/Woody</td>
<td>☐ Mixed</td>
</tr>
<tr>
<td>☐ Construction &amp; Demolition</td>
<td>☐ White Goods</td>
</tr>
<tr>
<td>☐ Household Hazardous Waste</td>
<td>☐ Animal Carcasses</td>
</tr>
<tr>
<td>☐ Hazardous Materials / Toxic</td>
<td>☐ Other: ____________________</td>
</tr>
<tr>
<td>Loading Time:</td>
<td>Loading Date:</td>
</tr>
<tr>
<td>Monitor Name (print):</td>
<td>I.D. #</td>
</tr>
<tr>
<td>TDSRS / Disposal Site Location:</td>
<td>Scale Ticket #</td>
</tr>
<tr>
<td>Load Call (%):</td>
<td>Weight (tons):</td>
</tr>
<tr>
<td>Disposal Time:</td>
<td>Disposal Date:</td>
</tr>
<tr>
<td>Monitor Name (print):</td>
<td>I.D. #</td>
</tr>
<tr>
<td>Contractor Name (print):</td>
<td>I.D. #</td>
</tr>
<tr>
<td>Notes:</td>
<td></td>
</tr>
</tbody>
</table>

White - Applicant  Green and Yellow - Contractor  Pink - Driver  Gold - Site Copy

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## GENERAL INFORMATION

<table>
<thead>
<tr>
<th>Applicant:</th>
<th>Disaster #</th>
<th>Contractor:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Tier Sub:</td>
<td>2nd Tier Sub:</td>
<td>Date:</td>
</tr>
<tr>
<td>Driver Name:</td>
<td>License #:</td>
<td>State:</td>
</tr>
<tr>
<td>Driver Phone:</td>
<td>Tag #:</td>
<td>State:</td>
</tr>
</tbody>
</table>

### Vehicle Type:
- [ ] Dump Truck
- [ ] Hydraulic Dump Trailer
- [ ] Semi-Trailer
- [ ] Self-Loading Truck
- [ ] Non-hydraulic Dump Trailer
- [ ] Tail Gate Extension
- [ ] Dog Box
- [ ] Curved/Angled Sides/Floor
- [ ] Wheel Wells
- [ ] Other: _______________

### Features:
- [ ] Sideboards
- [ ] Dog Box
- [ ] Curved/Angled Sides/Floor
- [ ] Wheel Wells
- [ ] Other: _______________

### MEASUREMENT INFORMATION

#### Primary Interior Dimensions:

\[ V_1 = L_1 \times W_1 \times H_1 \]

#### Modifications to Overall Interior Dimensions

Circle "+" for Addition or "-" for deduction

<table>
<thead>
<tr>
<th>Type Code:</th>
<th>L_2</th>
<th>x W_2</th>
<th>x H_2</th>
<th>= V_2</th>
<th>+ / -</th>
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</thead>
<tbody>
<tr>
<td>Type Code:</td>
<td>L_3</td>
<td>x W_3</td>
<td>x H_3</td>
<td>= V_3</td>
<td>+ / -</td>
</tr>
<tr>
<td>Type Code:</td>
<td>L_4</td>
<td>x W_4</td>
<td>x H_4</td>
<td>= V_4</td>
<td>+ / -</td>
</tr>
</tbody>
</table>

#### Round Bottom Truck:

\[ \frac{\pi \times (D \div 2)^2 \times L_1}{2} \div 2 \]  
\[ \frac{3.14 \times (_______ \div 2)^2 \times _______}{2} \div 2 \]

\[ V_5 = V_1 + / - \]

\[ V_{total} = \text{Primary Interior Cubic Inches} \pm \text{Modification Cubic Inches} \]

\[ \text{CYD} = \frac{V_{total}}{46,656} \text{ (rounded to the nearest whole number)} \]

### VEHICLE SKETCH

**Primary**
- (Side View)
- (End View)

**Type Code2:**
- (if applicable)

**Type Code3:**
- (if applicable)

**Type Code4:**
- (if applicable)

**Round Bottom:**
- (if applicable)

Measured by: I.D. #  Calculated by: I.D. #  Checked by: I.D. #

Applicant Representative (print): I.D. #  Contractor Representative (print): I.D. #

Signature:  Signature:
<table>
<thead>
<tr>
<th><strong>UNIT RATE TICKET</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>#</td>
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</table>

<table>
<thead>
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<th><strong>Applicant:</strong></th>
<th><strong>Disaster #</strong></th>
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<table>
<thead>
<tr>
<th><strong>Program:</strong></th>
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<tbody>
<tr>
<td>Parks</td>
<td></td>
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<tr>
<td>Right-of-Entry</td>
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</tr>
<tr>
<td>Time &amp; Materials</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>ROW Lean/Hanger</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stumps</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>___________</td>
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<table>
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<tr>
<th><strong>Contractor:</strong></th>
<th><strong>Crew # :</strong></th>
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<table>
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<tr>
<th><strong>Survey Item # :</strong></th>
<th><strong>GPS:</strong></th>
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<tr>
<td></td>
<td>N:</td>
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<tr>
<td></td>
<td>W:</td>
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<table>
<thead>
<tr>
<th><strong>House # :</strong></th>
<th><strong>Street Name:</strong></th>
<th><strong>Zone #:</strong></th>
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<table>
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<th><strong>ROE # :</strong></th>
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<th><strong>Contract Rate Code:</strong></th>
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<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>Other: ________</th>
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</table>

<table>
<thead>
<tr>
<th><strong>Contract Rate Sub-Code</strong></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>Other: ________</th>
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<tr>
<th><strong>Unit Count:</strong></th>
<th><strong>Measurement:</strong></th>
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<th><strong>Contractor Name (print):</strong></th>
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White - Applicant  Green and Yellow - Contractor  Pink - Crew Chief  Gold - Site Copy

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SAMPLES OF WRITTEN WORK

Houston, Texas

Memorial Day Flooding  FEMA-DR-4223

Report Summary

The City of Houston is a major metropolitan area and a large area was effected by the Memorial Day flooding event. For this cleanup effort, the City of Houston was divided into 16 zones with multiple subzones in each. Over 250,000 CY of vegetative and C&D debris was collected for this project. The Tetra Tech heat map below shows an overlay of flood debris collection with 311 calls reporting debris to evidence the size of the debris field. In addition this analysis provided support to FEMA that collected debris was a result of the flood.

Written Report Deliverable

The following information was distributed to the client on a daily basis. Tetra Tech provided the City with debris totals and completion statuses per Sub-Zone. The debris collected by the City of Houston and their Contractor (DRC) were both documented and evidenced in the report. An example of the report follows:

Subject: Debris Removal Status Report for 7/17/15

Please find the updated debris removal status report for 7/17/2015. In summary the contractor collected 62 loads for a total 2,319 CY of debris on 07/17/2015.

1.0 Final Pass Status Report

Northeast Sub-Zones Clearance Status (Complete)

<table>
<thead>
<tr>
<th>Sub-Zone</th>
<th>Responsible for clearing</th>
<th>Completed</th>
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</thead>
<tbody>
<tr>
<td>13-D</td>
<td>DRC</td>
<td>Yes - East of 45</td>
</tr>
<tr>
<td>14-A</td>
<td>DRC</td>
<td>Yes</td>
</tr>
<tr>
<td>14-B</td>
<td>DRC</td>
<td>Yes</td>
</tr>
<tr>
<td>16-A</td>
<td>COH</td>
<td>Yes</td>
</tr>
<tr>
<td>16-B</td>
<td>COH</td>
<td>Yes</td>
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</table>
Southeast Sub-Zones Clearance Status

<table>
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<tr>
<th>Sub-Zone</th>
<th>Responsible for clearing</th>
<th>Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-A</td>
<td>DRC</td>
<td>Yes</td>
</tr>
<tr>
<td>6-B</td>
<td>DRC</td>
<td>Yes</td>
</tr>
<tr>
<td>6-C</td>
<td>DRC</td>
<td>Yes</td>
</tr>
<tr>
<td>6-D</td>
<td>DRC</td>
<td>Yes</td>
</tr>
<tr>
<td>6-E</td>
<td>DRC</td>
<td>Yes</td>
</tr>
<tr>
<td>6-F</td>
<td>DRC</td>
<td>Yes</td>
</tr>
<tr>
<td>6-G</td>
<td>DRC</td>
<td>Yes</td>
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<table>
<thead>
<tr>
<th>Sub-Zone</th>
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<th>Completed</th>
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</thead>
<tbody>
<tr>
<td>7-A</td>
<td>DRC</td>
<td>Yes</td>
</tr>
<tr>
<td>7-B</td>
<td>DRC</td>
<td>Yes</td>
</tr>
<tr>
<td>7-C</td>
<td>DRC</td>
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</tr>
<tr>
<td>7-D</td>
<td>DRC</td>
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<td>7-H</td>
<td>DRC</td>
<td>No</td>
</tr>
<tr>
<td>7-I</td>
<td>DRC</td>
<td>Yes</td>
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</table>

2.0 Debris Removal by Subzone

7/17/15 Stats (as of End of Day)

<table>
<thead>
<tr>
<th>Zone</th>
<th>TdyTrks</th>
<th>TdyLds</th>
<th>TdyVol</th>
<th>JtdLds</th>
<th>JtdVol</th>
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<tbody>
<tr>
<td>10-B</td>
<td>0</td>
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<td>2</td>
<td>120</td>
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<td>10-B1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>22.1</td>
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<tr>
<td>10-C1</td>
<td>7</td>
<td>14</td>
<td>547.45</td>
<td>46</td>
<td>1,869.65</td>
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<td>10-D1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>216.1</td>
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<tr>
<td>10-E1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td>278.8</td>
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<td>10-F</td>
<td>0</td>
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<td>0</td>
<td>5</td>
<td>178.45</td>
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<td>10-F1</td>
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<td>0</td>
<td>0</td>
<td>22</td>
<td>700.4</td>
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<td>10-G</td>
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<td>2</td>
<td>119.4</td>
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<td>9-R</td>
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<td>0</td>
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<td>5</td>
<td>187.6</td>
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<td>9-S</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>96.05</td>
</tr>
<tr>
<td>9-T</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>221.50</td>
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<tr>
<td>Total</td>
<td>41</td>
<td>62</td>
<td>2,319.10</td>
<td>5,078.00</td>
<td>223,026.25</td>
</tr>
</tbody>
</table>

Note: Some Trucks have worked more than 1 zone (actual truck count is 36)
Section 6: Samples of Written Work

3.0 City Force Account Debris Removal

As of 7/16, City trucks have a collected a total of 29,810.06 tons of debris*

<table>
<thead>
<tr>
<th>Disposal Site</th>
<th>C&amp;D</th>
<th>Veg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue Ridge</td>
<td>642.23</td>
<td></td>
</tr>
<tr>
<td>Crawford</td>
<td></td>
<td>740.28</td>
</tr>
<tr>
<td>SW Transfer</td>
<td>4,818.03</td>
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<tr>
<td>Living Earth</td>
<td></td>
<td>1,662.40</td>
</tr>
<tr>
<td>McCarty</td>
<td>11,917.07</td>
<td></td>
</tr>
<tr>
<td>NW Transfer</td>
<td>1,877.17</td>
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</tr>
<tr>
<td>Letco Oates Rd</td>
<td></td>
<td>180.50</td>
</tr>
<tr>
<td>SE Transfer</td>
<td>7,972.38</td>
<td></td>
</tr>
<tr>
<td><strong>Project Total</strong></td>
<td><strong>29,810.06</strong></td>
<td></td>
</tr>
</tbody>
</table>

*Please note, reporting for City trucks is for the previous day to allow for data entry

4.0 Truck/Crew Certifications

No additional trucks or crews were certified today

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>COH</td>
<td>159</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td><strong>H-CNTY</strong></td>
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</tbody>
</table>

COH Debris Removal Status

In addition to the daily report shown in Exhibit 1-1, a daily debris removal status report was also provided. This report demonstrates overarching metrics for the project including daily and cumulative debris totals, estimated debris remaining, disposal site job to date statistics, and informative statistics such as average load calls and days operational.
## Section 6: Samples of Written Work

### Debris Removal Status Report

**CITY OF HOUSTON**

**FEMA-4423-DR | TX-SEVERE STORMS AND FLOODING**

**ROW COLLECTION**

**Daily Totals**

<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Total Cubic Yards</strong></td>
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</tr>
<tr>
<td>CONSTRUCTION/DEMOLITION</td>
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<td></td>
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<tr>
<td>VEGETATIVE/WOODY</td>
<td>576</td>
<td></td>
</tr>
<tr>
<td><strong>Total Loads</strong></td>
<td>36</td>
<td></td>
</tr>
<tr>
<td><strong>Total Trucks Operating</strong></td>
<td>28</td>
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</tr>
<tr>
<td><strong>Average CuYds Per Load</strong></td>
<td>37.38</td>
<td></td>
</tr>
<tr>
<td><strong>Average Load Call</strong></td>
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</tr>
<tr>
<td><strong>Disposal Sites in Operation</strong></td>
<td>2</td>
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</table>

*All figures are estimates pending reconciliation*

---

**Job to Date Statistics**

<table>
<thead>
<tr>
<th></th>
<th>Project Totals</th>
<th>Total CuYds Per Day</th>
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<tbody>
<tr>
<td><strong>Total Cubic Yards</strong></td>
<td>221,199</td>
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<td><strong>Total Loads</strong></td>
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<td><strong>Days Operational</strong></td>
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<tr>
<td><strong>Average Cubic Yards Per Load</strong></td>
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<td><strong>Maximum Day Cubic Yards</strong></td>
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<tr>
<td><strong>Average Day Cubic Yards</strong></td>
<td>5,415</td>
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<tr>
<td><strong>Average Load Call</strong></td>
<td>70.55%</td>
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</table>

*All figures are estimates pending reconciliation*
Midday Updates

Midday updates were also provided to give a quick overview of project progression during the day. The reports also included ticket and truck locations for the Geoportal established for the project. Vegetative and C&D ROW debris removal tickets are distinguished by blue and green dots, current monitor/truck status are displayed on the map with the pink truck icon.

- Total Cubic Yards - 1,346
- Total Load - 36
- Disposal Sites in Operation – 2
Section 6: Samples of Written Work

Issue Management Using the Geoportal

The following screenshots and descriptions exemplify some of the Geoportal reporting capabilities we are capable of disseminating to our clients.

HHW Tracking: HHW was identified by field monitors for collection by City contractors. Yellow are open reports, gray are completed reports where HHW was collected.
Section 6: Samples of Written Work

E-waste tracking: E-waste was identified by field monitors. Yellow are open reports, gray are completed reports where E-waste was collected.

Damage Report: Damages identified by monitors were reported for tracking purposes and to be addressed by the contractor. Examples include damages to landscaping, mailboxes, sidewalks, utilities, etc.
Missed Debris: Remaining debris was identified and marked by the monitor for collection by contractors. The missed debris report is vital in helping our clients close out a project in a timely manner.
Materials Receiving Sites: are displayed on the map and can be selected to see totals to date and statistics.

Load Ticket Locations: Plot of all the tickets issued in Houston. Green and blue dots differentiate vegetative and C&D debris respectively.
NEW JERSEY

Hurricane Sandy - New Jersey North Region

Project Summary
The disaster cleanup for Hurricane Sandy was a multifaceted effort centering on the restitution of North New Jersey coastal areas and waterways. Tetra Tech first monitored debris removal efforts from coastal shore and marsh areas within the mean tide line – several environmental sensitive and significant historical archeological sites were in the affected area. Similar to PPDR work, special procedures specific to removal of vessels were performed in unison with the State police and DOT. Tetra Tech then monitored the removal of submerged debris which was prefaced with monitoring of hydrographic surveys to identify debris targets. The final stage of the Hurricane Sandy project was the sediment removal in marinas altered by the storm. This was a multi-stage monitoring process involving sampling the sediment for contaminants, monitoring hydrographic surveys and documenting acreage scanned, documenting barge locations during the removal process, measuring barge capacities of sediment, monitoring the processing of sediment and final disposal of contaminated sediment at approved facilities.

Report Summary
The Hurricane Sandy project in the New Jersey North Region required specialized reporting tailored to the client’s needs. Report examples are evidenced in the following attachments:

Attachment A – Daily Summary Report
The daily summary was a written report which provided the client a convenient summary of the day’s metrics. The Daily Summary included:

- Narrative of the day’s operations
- Table documenting activities performed, tracked by Municipality, Zone, and Subzone
- Truck Certification metrics
- Vessel Removal Tracking
- Hydrographic and Side Scan Sonar metrics
- Sediment Removal metrics
- Tetra Tech (previously SAIC/Leidos) staff labor metrics
- Map of monitor location layer using Google Earth – Monitor location documentation has been upgraded to a real-time Geoportal. See City of Houston Written Report example.
Attachment A

Subject: Daily Summary NJDEP Waterways Debris Removal Project 6.17.13

The following daily reports for June 17th 2013 are attached:
- NJDEP Waterways Daily Summary 6.17.13
- RT ADMS Daily Activity Report 6.17.13

Teams completed the following activities today:
- Monitored the hydrographic survey of waterways in Donjon subzone C6
- Monitored sediment removal operations of waterways in Donjon subzones C6 and F3
- Monitored disposal operations at Berth 36
- Monitored the final disposal at Coplay Quarry
- Measured 5 sediment barges at Berth 36
- Measured 2 sediment barges at Berth 9
- Measured 1 sediment barge at Clean Earth in Jersey City

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Zone</th>
<th>Subzone</th>
<th>Area</th>
<th>Estimated CY</th>
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<tr>
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<td>DJ C6</td>
<td>Smith Creek</td>
<td>Survey</td>
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<td>Sewaren</td>
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<td>6/17/2013</td>
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<tr>
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<td>6/17/2013</td>
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<td>6/17/2013</td>
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<td>Removal</td>
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<tr>
<th>Truck Certification Metrics</th>
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<th>Disposal Metrics</th>
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<td>Ineligible Debris</td>
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Vessel Metrics
### Section 6: Samples of Written Work

#### Zone Number Collected

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<td>38</td>
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#### Side Scan Sonar Metrics

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<th>Estimated Acres Scanned</th>
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<tbody>
<tr>
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<tr>
<td>Subtotal</td>
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<tr>
<td>Total</td>
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#### Hydrographic Survey Metrics

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<tr>
<td>Subtotal</td>
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<tr>
<td>Total</td>
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#### Ocean Side Scan Metrics

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#### Sediment Removal Metrics

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#### Daily Field Monitoring Metrics

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<td>Phil I.</td>
<td>Zone Operations Manager</td>
<td>13</td>
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<tr>
<td>Michael B</td>
<td>Zone Operations Manager</td>
<td>10.5</td>
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<tr>
<td>Scott C.</td>
<td>Field Monitor</td>
<td>11.75</td>
</tr>
<tr>
<td>Ryan P.</td>
<td>Field Monitor</td>
<td>11.5</td>
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14

Mark F.  Field Monitor  11.5
Frank M.  Safety Specialist  13.75
Peter M  Field Monitor  11.5
Gregorio P.  Field Supervisor  13.5
Christian P.  Zone Operations Manager  15
Adam S.  Field Monitor  9.75
Kevin N.  Field Monitor  11
James M.  Field Monitor  9.75
Nancy S  Field Supervisor  12
Amir M.  Field Monitor  11
Douglas B.  Field Monitor  11
Thomas P.  Field Monitor  11

Total  240

1  Estimates are representative of field monitoring hours and are not inclusive of Project Manager, Data Manager, and GIS Analyst, Invoice Analyst, and Project Coordinator time.

** All figures are estimates and pending final reconciliation. **

The following information discusses the attached reports and how they are being used in the field. Please feel free to call me at any time to further discuss.

As monitors complete field reports, their locations are logged and collected. The following map displays locations of monitors as each survey report is generated. Clicking on the waypoints allows the user to review the data that was collected by the field inspector (see example below). The Map of Monitor Locations Report is updated in real time and can be downloaded from the following link: Map of Daily Activity Click here to show an overly on Google Earth. It is also available in KML format which has been attached with this email.
Map of Monitor Locations
Note: you will have to have Google Earth installed on your PC to view the map.

Also attached you will find reports generated by our ADMS application (RTV2 mobile). This is backup documentation being collected in order to support Donjon’s survey and collection invoice during future audits. These reports have been sent in PDF format but may be requested in Excel format. The attached ADMS reports include:

**ADMS Daily Activity Report** – This report is generated real time as field inspectors observe and document the daily activities being performed. Photos are available for review 3 minutes after they have been taken in the field, allowing data managers to review photos throughout the day in order to verify the activity that is being performed is within the contract standards. This report is attached in PDF and Excel format.

- Tetra Tech will use the functionality within this report to alert all critical members of the team by email when there is an immediate need in the field. Photo documentation, location, and issue description will be immediately distributed and reviewed. This will resolve issues (eligibility requirements) quickly as the crew will still be working in the area. Any issues where a timely resolution is not possible will be pushed up to the Project Management Team and the State for further review.
Section 6: Samples of Written Work

**RT ADMS Daily Activity Report**
This documentation will be used to backup sonar reports, or collection eligibility at audit

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**Truck Certification Report**
This is a standard report utilized on most projects will displays the contractor truck and/or crews certified for a project. Measurements are displayed for containers to evidence how the cubic yardage capacity was calculated. Photos may also be shown on the report.

**Truck Certification Audit Report** - As truck capacities are measured and uploaded into our database using the ADMS technology, Tetra Tech uses this attached report to audit the truck certifications and verify the measured capacities are correct. The information is available for review 10 minutes after it is submitted in the field, allowing data managers to quickly review photos and verify the certification(s) being performed is within the contract standards. This report is attached in PDF and Excel format.
Daily Truck Certification Audit Report
This documentation will be used as an audit tool as trucks are certified.

This is all information that can be easily provided and reformatted as needed by the State. All data presented is pending final reconciliation with the contractor. Final statistics will only be available upon the completion of reconciliation. These reports are currently scheduled to be provided by 9am the following morning but can be available at any part of the day as requested.

Attachment B – NJ ADMS Daily Activity Report
In addition, the summary email contained static generic summaries of additional reports that were distributed during this project used on the project.

- Daily Activity Report – This report displayed the daily observations of field monitors, as such it differed from day to day according to activities. It was used to document survey locations of debris, pre-site photos, post-site photos, sediment removal and barge tracking, tide gauge depths, etc. See Attachment
**B – NJ ADMS Daily Activity Report** for an excerpt from the sediment removal portion of the project which contains monitoring of waterway debris removal, sediment removal, and tidal gauges.

**Attachment B**

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### RecoveryTrac ADMS Activity Report

**Project Activity Summary: BDEP WATERWAYS DEBRIS REMOVAL PROGRAM**

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<thead>
<tr>
<th>Activity Type</th>
<th>Total</th>
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<td>COLLECTION SURVEY</td>
<td>15</td>
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<tr>
<td>SEDIMENT REMOVAL</td>
<td>140</td>
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<tr>
<td>SEDIMENT REMOVAL BUCKET DEPTH</td>
<td>71</td>
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<tr>
<td>SEDIMENT REMOVAL TIDE GAUGE</td>
<td>213</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>430</strong></td>
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</table>

**Attachment B (Newspaper article regarding performance/Client Letter)**

**Collection Survey (Page 15)**

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<th>Status</th>
<th>Priority</th>
<th>Date</th>
<th>Site Zone</th>
<th>Truck No.</th>
<th>Location</th>
<th>Reporting/Editor</th>
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<tbody>
<tr>
<td>01/2011-0001</td>
<td>Active</td>
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<td>05/05/2011 2:37 PM</td>
<td>Zone 1: 51-24</td>
<td>RRD</td>
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<td>TURFY ELIOTT (02/17/11)</td>
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<thead>
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<th>Status</th>
<th>Priority</th>
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<th>Site Zone</th>
<th>Truck No.</th>
<th>Location</th>
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<tr>
<td>01/2011-0001</td>
<td>Active</td>
<td>Normal</td>
<td>05/06/2011 3:14 PM</td>
<td>Zone 1: 51-24</td>
<td>RBD</td>
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<td>TURFY ELIOTT (02/17/11)</td>
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<tr>
<th>Activity No.</th>
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<th>Site Zone</th>
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<tbody>
<tr>
<td>01/2011-0001</td>
<td>Active</td>
<td>Normal</td>
<td>05/06/2011 2:15 PM</td>
<td>Zone 1: 51-24</td>
<td>RBD</td>
<td>ATTACHMENT CT</td>
<td>TURFY ELIOTT (02/17/11)</td>
</tr>
</tbody>
</table>

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Attachment C – NJDEP Waterways Summary Report

Whereas the Daily Summary Report provided an overview detail for the daily operations of the project, the NJDEP Waterways Summary was an extensive cumulative report which provided project-to-date data for activities monitored in the NJ North Region. The report commenced with a brief restating of daily operation detail and continued with a comprehensive overview of the project. Some of the metrics detailed in the attached example are:

- Truck Certification Metrics – Summary of cubic yardage capacity of containers certified
- Estimated Marina Sediment Removal Metrics – Evidenced the progress of sediment removal per marina. Note – each marina had a maximum capacity of sediment to be removed, which is the cause for the 102% value in the example.
- Current Equipment in Use
- Total vessels removed
- Debris disposal metrics
- Side Scan and Ocean Scan metrics – scanning was reimbursable per acre for this project
- Monitoring labor metrics
- Zone Summaries – A history of activities performed by location and estimated CY of debris removed
- Hydrographic Survey Metrics – Each marina potentially eligible for sediment removal must have had a pre-work hydrographic survey performed. If the marina was deemed eligible a post-hydrographic survey was required after work was completed.
- Sediment Removal per Marina – Estimated cubic yardage of sediment removed per marina
Attachment C

North Region

June 17, 2013

- Monitored the hydrographic survey of waterways in Donjon subzone C6
- Monitored sediment removal operations of waterways in Donjon subzones C6 and F3
- Monitored disposal operations at Berth 36
- Monitored the final disposal at Coplay Quarry
- Measured 5 sediment barges at Berth 36
- Measured 2 sediment barges at Berth 9
- Measured 1 sediment barge at Clean Earth in Jersey City

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Zone</th>
<th>Subzone</th>
<th>Area</th>
<th>Estimated CY</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sewaren</td>
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<td>D</td>
<td>C6</td>
<td>Smith Creek</td>
<td>Survey</td>
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<td>Sewaren</td>
<td>1</td>
<td>D</td>
<td>C6</td>
<td>Smith Creek</td>
<td>Sediment Removal</td>
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<tr>
<td>Edgewater</td>
<td>1</td>
<td>D</td>
<td>F3</td>
<td>Von Dohlin Marina</td>
<td>Sediment Removal</td>
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<tr>
<td>Edgewater</td>
<td>1</td>
<td>D</td>
<td>F3</td>
<td>Edgewater Marina</td>
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<th>Disposal Metrics</th>
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<th>Vessel Metrics</th>
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### North Region

#### Side Scan Sonar Metrics

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#### Hydrographic Survey Metrics

<table>
<thead>
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<tbody>
<tr>
<td>Subtotal 1</td>
<td>92</td>
</tr>
<tr>
<td>Subtotal 2</td>
<td>329</td>
</tr>
<tr>
<td>Total</td>
<td>421</td>
</tr>
</tbody>
</table>

#### Ocean Side Scan Metrics

<table>
<thead>
<tr>
<th>Zone</th>
<th>Estimated Acres Scanned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subtotal 1</td>
<td>0</td>
</tr>
<tr>
<td>Subtotal 2</td>
<td>662</td>
</tr>
<tr>
<td>Total</td>
<td>662</td>
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</tbody>
</table>

#### Sediment Removal Metrics

<table>
<thead>
<tr>
<th>Zone</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Daily 1</td>
<td>3.731</td>
</tr>
<tr>
<td>Subtotal 1</td>
<td>55,065</td>
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<tr>
<td>Subtotal 2</td>
<td>0.00</td>
</tr>
<tr>
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</tr>
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### Daily Field Monitoring Metrics

<table>
<thead>
<tr>
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<th>Hours</th>
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<tbody>
<tr>
<td>Rick M.</td>
<td>Zone Operations Manager</td>
<td>14</td>
</tr>
<tr>
<td>Phil L.</td>
<td>Zone Operations Manager</td>
<td>13</td>
</tr>
<tr>
<td>Michael B</td>
<td>Zone Operations Manager</td>
<td>10.5</td>
</tr>
<tr>
<td>Scott C.</td>
<td>Field Monitor</td>
<td>11.75</td>
</tr>
<tr>
<td>Ryan P.</td>
<td>Field Monitor</td>
<td>11.5</td>
</tr>
<tr>
<td>Mark F.</td>
<td>Field Monitor</td>
<td>11.5</td>
</tr>
<tr>
<td>Frank M.</td>
<td>Safety Specialist</td>
<td>13.75</td>
</tr>
<tr>
<td>Peter M.</td>
<td>Field Monitor</td>
<td>11.5</td>
</tr>
<tr>
<td>Gregorio P.</td>
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<tr>
<td>Christian P.</td>
<td>Zone Operations Manager</td>
<td>15</td>
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<td>Adam S.</td>
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</tr>
<tr>
<td>Kevin N.</td>
<td>Field Monitor</td>
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<tr>
<td>James M.</td>
<td>Field Monitor</td>
<td>9.75</td>
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<td>Nancy S.</td>
<td>Field Supervisor</td>
<td>12</td>
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<tr>
<td>Amir M.</td>
<td>Field Monitor</td>
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### North Region

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<tr>
<td>Sewaren</td>
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<td>D1 C6</td>
<td>Smith Creek</td>
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<tr>
<td>Edgewater</td>
<td>1</td>
<td>D1 F3</td>
<td>Von Doblin Marina</td>
<td>Sediment</td>
<td>6/16/2013</td>
</tr>
<tr>
<td>Edgewater</td>
<td>1</td>
<td>D1 F3</td>
<td>Edgewater Marina</td>
<td>Sediment</td>
<td>6/16/2013</td>
</tr>
<tr>
<td>Sewaren</td>
<td>1</td>
<td>D1 C6</td>
<td>Smith Creek</td>
<td>Sediment</td>
<td>6/15/2013</td>
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<tr>
<td>Edgewater</td>
<td>1</td>
<td>D1 F3</td>
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<td>Sediment</td>
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</tr>
<tr>
<td>Sewaren</td>
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<tr>
<td>Secaucus</td>
<td>1</td>
<td>D1 E3</td>
<td>River Barge Park Marina</td>
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<td>6/13/2013</td>
</tr>
<tr>
<td>Secaucus</td>
<td>1</td>
<td>D1 E3</td>
<td>Snipe Boat Club</td>
<td>Sediment</td>
<td>6/13/2013</td>
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<tr>
<td>Edgewater</td>
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<td>D1 F3</td>
<td>Edgewater Marina</td>
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<tr>
<td>Edgewater</td>
<td>2</td>
<td>D1 E7</td>
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<td>D1 F3</td>
<td>Edgewater Marina</td>
<td>Sediment</td>
<td>6/12/2013</td>
</tr>
<tr>
<td>Secaucus</td>
<td>1</td>
<td>D1 E3</td>
<td>Snipe Boat Club</td>
<td>Sediment</td>
<td>6/12/2013</td>
</tr>
<tr>
<td>Secaucus</td>
<td>1</td>
<td>D1 E3</td>
<td>Majestic Boat Club</td>
<td>Sediment</td>
<td>6/12/2013</td>
</tr>
<tr>
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<td>D1 E3</td>
<td>Hackensack River</td>
<td>Survey</td>
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<td>Edgewater Marina</td>
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<td>6/11/2013</td>
</tr>
<tr>
<td>Secaucus</td>
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<td>D1 E3</td>
<td>Snipe Boat Club</td>
<td>Sediment</td>
<td>6/11/2013</td>
</tr>
<tr>
<td>Secaucus</td>
<td>1</td>
<td>D1 E3</td>
<td>River Barge Park Marina</td>
<td>Survey</td>
<td>6/11/2013</td>
</tr>
<tr>
<td>Edgewater</td>
<td>1</td>
<td>D1 F3</td>
<td>Edgewater Marina</td>
<td>Sediment</td>
<td>6/10/2013</td>
</tr>
<tr>
<td>Secaucus</td>
<td>1</td>
<td>D1 E3</td>
<td>Snipe Boat Club</td>
<td>Sediment</td>
<td>6/10/2013</td>
</tr>
<tr>
<td>Secaucus</td>
<td>1</td>
<td>D1 E3</td>
<td>Majestic Boat Club</td>
<td>Sediment</td>
<td>6/10/2013</td>
</tr>
<tr>
<td>Keyport</td>
<td>2</td>
<td>D1 F7</td>
<td>Keyport Yacht Club</td>
<td>Survey</td>
<td>6/10/2013</td>
</tr>
<tr>
<td>Edgewater</td>
<td>1</td>
<td>D1 F3</td>
<td>Edgewater Marina</td>
<td>Sediment</td>
<td>6/9/2013</td>
</tr>
<tr>
<td>Secaucus</td>
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<td>D1 E3</td>
<td>Majestic Boat Club</td>
<td>Sediment</td>
<td>6/9/2013</td>
</tr>
<tr>
<td>Edgewater</td>
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<td>D1 F3</td>
<td>Edgewater Marina</td>
<td>Sediment</td>
<td>6/8/2013</td>
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<td>Secaucus</td>
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<td>D1 E3</td>
<td>Majestic Boat Club</td>
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<tr>
<td>Secaucus</td>
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<td>D1 E3</td>
<td>Snipe Boat Club</td>
<td>Sediment</td>
<td>6/8/2013</td>
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<td>Edgewater</td>
<td>1</td>
<td>D1 F3</td>
<td>Von Doblin Marina</td>
<td>Sediment</td>
<td>6/7/2013</td>
</tr>
</tbody>
</table>
Section 6: Samples of Written Work

Attachment D – Sediment Removal Worksheet

For the sediment removal monitoring portion of the project, Tetra Tech derived the attached worksheet in order to properly document sediment barge capacities. Due to the viscosity of the sediment, when the barge was emptied the container was not void of sediment – the worksheet accounted for that residual amount and assures an improper cubic yardage and payment was not issued.

Attachment D
NEW ORLEANS, LOUISIANA

City of New Orleans Demolition Program

Tetra Tech is currently managing a third demolition program for the City of New Orleans. This program consists of the packet management and demolition monitoring for 383 properties damaged by Hurricane Katrina and eligible for demolition through the FEMA Public Assistance Program. Client deliverables for this project include site surveys, packet management, contractor coordination, and FEMA reimbursement documentation.

Site Surveys

Tetra Tech was tasked by the City to complete site surveys of 383 properties and develop required Survey Photo Sheets to document the current status of damages to a structure that would warrant the need for demolition. See below for a sample Survey Photo Sheet deliverable.

Sample Survey Photo Sheet (Page 1 of 2)

<table>
<thead>
<tr>
<th>Description: Front View</th>
<th>Description: Front View from Left Corner</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.jpg" alt="Survey Photo 1" /></td>
<td><img src="image2.jpg" alt="Survey Photo 2" /></td>
</tr>
<tr>
<td><img src="image3.jpg" alt="Survey Photo 3" /></td>
<td><img src="image4.jpg" alt="Survey Photo 4" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description: Left Side</th>
<th>Description: Front View from Right Corner</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image5.jpg" alt="Survey Photo 5" /></td>
<td><img src="image6.jpg" alt="Survey Photo 6" /></td>
</tr>
<tr>
<td><img src="image7.jpg" alt="Survey Photo 7" /></td>
<td><img src="image8.jpg" alt="Survey Photo 8" /></td>
</tr>
</tbody>
</table>
During the survey process, Tetra Tech used ESRI geographic information system (GIS) tools to document, report, and provide visibility into the status of surveys. In addition to collecting data such as GPS locations, supporting photographs, and descriptions, Tetra Tech was also able to provide the City with access to the real-time locations of surveyors as they were out in the field. Lastly, the application of GIS tools also allowed our field staff to verify they were at the correct address prior to beginning the survey. This was essential since in some cases all that remained of a structure was a pile of debris. See the following page for sample images of the geoportal developed for the City. Note, each survey point could be selected to view survey details and photographs.
Demolition Monitoring

The FEMA PA program requires the documentation of materials and quantities removed as part of a structural demolition. Tetra Tech monitored the removal of debris from demolished structures using Automated Debris Management System (ADMS) technology. ADMS technology allowed Tetra Tech to provide the City with real-time debris removal metrics and the ability to identify costs per property. See Exhibit 1-4 for an example of the daily report provided to the City and other project stakeholders. The daily report from Tetra Tech includes the following:

- A summary of work completed by the demolition contractor for the previous day
- Program statistics for demolitions complete and debris removed for the previous day
- Cumulative program statistics for demolitions complete and volume of debris removed
- A list of properties that are ready for the contractor to schedule for demolition

Other tools provided to the City

See page 6-28 for an example of cost tracking by property or work order number.

See page 6-29 for a screenshot of the GIS demolition layer which provided the City with that status of a property and whether a demolition was completed or pending.
Section 6: Samples of Written Work

City of New Orleans Daily Report

Please find attached the daily debris removal report for the City of New Orleans Demolition Program. All totals are pending final reconciliation with the demolition contractor. Also attached is a summary of demolitions that have been completed but are pending LDEQ approval for closeout. The summary will be updated as work orders are approved by LDEQ.

Work Completed on December 3, 2015

- WO 3247 1526 Marigny St was cleared by LDEQ.
- WO 3324 1215-17 Andry St was cleared by LDEQ.
- There are 5 properties that are demolished pending post-demo abatement activities and LDEQ clearance.

![Site Clearing WO 3247](image1)
![Site Clearing WO 3324](image2)

<table>
<thead>
<tr>
<th>Program Statistics</th>
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<tr>
<td>Demolitions Completed</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>C&amp;D Volume Hauled</td>
<td>11 CY</td>
</tr>
<tr>
<td>RACM Volume Hauled</td>
<td>5 CY</td>
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</table>

<table>
<thead>
<tr>
<th>Cumulative Totals</th>
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</thead>
<tbody>
<tr>
<td>Program Statistics</td>
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</tr>
<tr>
<td>RACM Demolitions Completed to Date</td>
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<tr>
<td>C&amp;D Demolitions Completed to Date</td>
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<td>SSD Demolitions Completed to Date</td>
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</tr>
<tr>
<td>Pending Completion</td>
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</tr>
<tr>
<td>WO Pending LDEQ Approval</td>
<td>5</td>
</tr>
<tr>
<td></td>
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<tr>
<td>C&amp;D Volume Hauled to Date</td>
<td>2,906</td>
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<tr>
<td>RACM Volume Hauled to Date</td>
<td>8,474</td>
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Properties to be Demolished:

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<tr>
<th>Transmitted Properties Pending Demolition</th>
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<tbody>
<tr>
<td>WO</td>
<td>Property</td>
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<tr>
<td>----</td>
<td>-------------------</td>
</tr>
<tr>
<td>3003</td>
<td>2300 Gallier St</td>
</tr>
<tr>
<td>3297</td>
<td>3914 3rd St</td>
</tr>
<tr>
<td>3299</td>
<td>2703-03 S Liberty St</td>
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<tr>
<td>3421</td>
<td>8721 Apricot St</td>
</tr>
<tr>
<td>3598</td>
<td>5818 N Claiborne Ave</td>
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<tr>
<td>3681</td>
<td>1712 N Robertson St</td>
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<td>3007</td>
<td>1117-19 S Gerolt St</td>
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<td>3247</td>
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<td>2941-43 N Galvez St</td>
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</table>
Section 6: Samples of Written Work

City of New Orleans Daily Report (Continued)

City of New Orleans Cost Tracking by Work Order (Property)

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<thead>
<tr>
<th>ROE/WO</th>
<th>Ticket Date</th>
<th>Ticket Number</th>
<th>Trans</th>
<th>Code</th>
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<th>UOM</th>
<th>Qty</th>
<th>Rate</th>
<th>Total Value</th>
<th>Work Location</th>
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<td>8C</td>
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<td>1</td>
<td>12A</td>
<td>Removal and Disposal of Floor Tile/Mastic</td>
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<td>2290</td>
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<td></td>
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<td>$12,139.46</td>
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</tbody>
</table>
City of New Orleans Demolition View
### Packet Management

In addition to meeting the City’s ordinances for demolition, each property must also adhere to FEMA PA program requirements for demolition (FEMA 19 Point Demolition Checklist). Below is a sample Tetra Tech Notice to Proceed Checklist. This is the customized checklist used by Tetra Tech that is compliant with City ordinances and FEMA guidelines.

#### Notice to Proceed Checklist

<table>
<thead>
<tr>
<th>Verification Documents</th>
<th>Initials</th>
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<tbody>
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<td>FEMA 19-point checklist</td>
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<tr>
<td>FEMA PA approval</td>
<td></td>
</tr>
<tr>
<td>FEMA HP approval</td>
<td></td>
</tr>
<tr>
<td>SSD Assessment (if applicable)</td>
<td></td>
</tr>
<tr>
<td>Tetra Tech Survey</td>
<td></td>
</tr>
<tr>
<td>Tax assessor / Parcel Map</td>
<td></td>
</tr>
<tr>
<td>Code Enforcement Structural Assessment</td>
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</tr>
<tr>
<td>Notice of Judgment</td>
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<tr>
<td>Letter of Intent</td>
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<td>TP Advertisement</td>
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<td>Chapter 28 Ordinance</td>
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<td>Archaeological monitor requirement</td>
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<tr>
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<tr>
<td>Gas Disconnect</td>
<td></td>
</tr>
<tr>
<td>Buffer map</td>
<td></td>
</tr>
<tr>
<td>Tetra Tech ACM inspection log (if applicable)</td>
<td></td>
</tr>
<tr>
<td>ACM lab report (if applicable)</td>
<td></td>
</tr>
<tr>
<td>Abatement confirmation (if applicable)</td>
<td></td>
</tr>
</tbody>
</table>

All documents are accounted for and the structure is ready for demolition. This serves as a notice to proceed from Tetra Tech to DURR Heavy Construction LLC.

---

Due to the significant number of tasks and supporting documentation that must be managed, Tetra Tech developed a demolition database for the City of New Orleans to organize and manage supporting documentation. Additionally, the database was designed to follow the City’s demolition workflow process. As a result, reports can be run from the Tetra Tech database to identify the status of all properties within the program.
See the below for a sample Demolition Packet Status Report. Using the Demolition Packet Status Report the City and project team can readily identify if a phase or task is delaying demolitions and make adjustments to increase project efficiency and effectiveness.

Demolition Packet Status Report

<table>
<thead>
<tr>
<th>Demolition Packet Status Breakdown</th>
<th>12/7/15</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I. Adjudicated In Process</strong></td>
<td>101</td>
</tr>
<tr>
<td>C. Waiting Local Historic</td>
<td>10</td>
</tr>
<tr>
<td>E. Selective Salvage</td>
<td>4</td>
</tr>
<tr>
<td>F. ACM/Utilities/Permitting</td>
<td>28</td>
</tr>
<tr>
<td>H. Demolished</td>
<td>59</td>
</tr>
<tr>
<td><strong>II. Non-Adjudicated In Process</strong></td>
<td>143</td>
</tr>
<tr>
<td>H. Demolished</td>
<td>1</td>
</tr>
<tr>
<td>I. Waiting Inspection</td>
<td>7</td>
</tr>
<tr>
<td>J. Hearing Scheduled</td>
<td>135</td>
</tr>
<tr>
<td><strong>III. Other Funding Source</strong></td>
<td>65</td>
</tr>
<tr>
<td>L. Sheriff Sale</td>
<td>64</td>
</tr>
<tr>
<td>M. HMGF / SRPP / RH</td>
<td>1</td>
</tr>
<tr>
<td><strong>IV. In Compliance</strong></td>
<td>74</td>
</tr>
<tr>
<td>N. In Compliance</td>
<td>74</td>
</tr>
</tbody>
</table>

Total Properties in FEMA-Funded Demolition Program: 383
The sample below provides a sample of the detail that can be expanded from the Demolition Packet Status Report. The detail information provides the status of each individual property in the program. As a result, the City and project team coordinate required tasks at the property level to increase project efficiency. Examples include coordinating asbestos testing, utility disconnect, 24-hour demolition postings, and demolition permit acquisition.

Below detail, the image provides screenshots of the customized database developed for the City to better manage supporting documentation and demolition operations.

**Demolition Packet Status Detail**

![Demolition Packet Status Detail](image)

**Demolition Database**

![Demolition Database](image)
Section 7: Availability, Response Time, and Support Resources
Sample Contract
THIS AGREEMENT is made by and between the COUNTY OF SACRAMENTO, CALIFORNIA located at 9850 Goethe Road, Sacramento, CA 95827, hereinafter referred to as (“Client”) and TETRA TECH, INC., hereinafter referred to as (“Contractor”), located at 2301 Lucien Way, Suite 120, Maitland, Florida 32751.

WHEREAS, The County of Sacramento, California has issued a Request for Proposals dated October 2018, for Disaster Debris Planning, Monitoring, Consulting, and Recovery Services; and

WHEREAS, Tetra Tech, Inc. was selected to provide these services following the Request for Proposal issued by County of Sacramento, California through a competitive bidding process; and

WHEREAS, Contractor must comply with all applicable federal regulations from Title 2 Code of Federal Regulations Part 200 Appendix II as specified in Exhibit C and D, attached hereto and incorporated herein.

NOW THEREFORE, the parties hereby agree as follows:

1. **Scope of Services**: Contractor and Client agree Contractor will perform services associated with disaster recovery consultant services as described in Exhibit A1 and A2. Task Orders shall be issued for specific deliverables under this Agreement. Such deliverables to be provided by Contractor will be determined by Client and specified in writing on each Task Order.

2. **Term**: The term of this Agreement shall begin on _________________ and shall continue in full force for five (5) years with the option to extend for one (1) additional three (3) year period.

3. **Independent Contractor**: Contractor is an independent contractor and is not an employee of Client. Services performed by Contractor under this Agreement are solely for the benefit of the Client. Nothing contained in this Agreement creates any duties on the part of Contractor toward any person not a party to this Agreement.

4. **Standard of Care**: Contractor will perform services under this Agreement with the degree of skill and diligence normally practiced by professional Contractors performing the same or similar services. No other warranty or guarantee, expressed or implied, is made with respect to the services furnished under this Agreement and all implied warranties are disclaimed.

5. **Changes/Amendments**: This Agreement and its exhibits constitute the entire agreement between the Parties and together with its exhibits supersedes any prior written or oral agreements. This Agreement may not be amended, modified or changed except by written amendment executed by both Parties. The estimate of the level of effort, schedule and payment required to complete the Scope of Services, as Contractor understands it, is reflected herein. Services not expressly set forth in this Agreement or its exhibits are excluded. Contractor shall promptly notify Client if changes to the Scope of Services affect the schedule, level of effort or payment to Contractor and the schedule and payment shall be equitably adjusted.

6. **Uncontrollable Forces**: Neither the Client nor Contractor shall be considered to be in default of this Agreement if delays in or failure of performance shall be due to Uncontrollable Forces, the effect of which, by the exercise of reasonable diligence, the non-performing party could not avoid. The term "Uncontrollable Forces" shall mean any event which results in the prevention or delay of performance by a party of its obligations under this Agreement and which is beyond the reasonable control of the nonperforming party. It includes, but is not limited to fire, flood, earthquakes, explosion, strike, transportation, or equipment delays, act of war, Act of God, lightning, epidemic, war, riot, civil disturbance, sabotage, acts of terrorism and governmental actions outside the control
of the Client. The schedule or payment under the Agreement shall be equitably adjusted, if necessary, to compensate Contractor for any additional costs due to the delay.

Neither party shall, however, be excused from performance if nonperformance is due to forces which are foreseeable, preventable, removable, or remediable, and which the nonperforming party could have, with the exercise of reasonable diligence, prevented, removed or remedied with reasonable dispatch. The nonperforming party shall, within a reasonable time of being prevented or delayed from performance by an uncontrollable force, give written notice to the other party describing the circumstances and uncontrollable forces preventing continued performance of the obligations of this Agreement.

7. **Fee for Services**: The fee for the services under this Agreement will be based on the actual hours of services furnished multiplied by Contractor's Billing Rates plus all reasonable non-labor expenses as set forth in Exhibit B.

8. **Compensation**: Contractor shall bear the costs of performing all services under this Agreement, as directed by the Client, plus applicable permit and license fees and all maintenance costs required to maintain its vehicles and other equipment in a condition and manner adequate to accomplish and perform all services under this Agreement.

Contractor shall submit monthly invoice for services rendered.

Client shall pay Contractor in U.S. dollars within thirty (30) days of receipt of invoices less any disputed amounts. Client will review invoices for acceptance within ten (10) calendar days of the date of the invoice to which Client shall immediately notify Contractor of any invoice discrepancies. Contractor and Client will work in good faith to resolve any such discrepancies within ten (10) days after notification. Should a discrepancy result in a partial rejection of any item(s) invoiced, Client shall proceed with partial payment within Net 30 days of the date of the invoice. If Client fails to make payment within thirty (30) days of the date of such invoice, interest compounded at the rate of two percent (2%) per month (retroactive to the first month outstanding) shall be charged and payable by Client on all amounts unpaid and outstanding (less any discrepant amount identified within the ten (10) day review period noted above). Under no circumstances shall payment of Contractor’s invoices be contingent on reimbursement of Client by any third-party authority or funding source.

All invoices shall be delivered to:
County of Sacramento
Department of Waste Management and Recycling
9850 Goethe Road, Sacramento, CA 95827

Payment shall be made to the following address:
Tetra Tech, Inc., P.O. Box 911642, Denver, CO 80291-1642

In order for both parties herein to close their books and records, the Contractor will clearly state "Final Invoice" on the Contractor’s final/last billing to the Client. Such statement shall serve as certification that all services have been properly performed and all charges and costs have been invoiced to the Client. Upon submission of the Final Invoice, Client’s account with Contractor will be closed and any and other further charges if not properly included on the Final Invoice shall be considered waived by the Contractor.

9. **Indemnity**: Contractor shall save harmless the Client from all claims and liability due to activities of himself, his agents, or employees, performed under this contract and which to the extent result
from a negligent act, error or omission of the Contractor or of any person employed by the Contractor. Contractor shall also save harmless the Client from all expenses, including attorney fees which might be incurred by the Client in litigation or otherwise resisting said claims or liabilities which might be imposed on the Client as result of such activities by the Contractor, his agents, or employees.

10. **Insurance**: During the performance of the Services under this Agreement, Contractor shall maintain the following insurance policies:

- Worker's Compensation: Statutory
- Employer's Liability: U.S. $1,000,000
- Commercial General Liability: U.S. $1,000,000 per occurrence
- Comprehensive General Automobile: U.S. $1,000,000 aggregate
- Professional Liability: U.S. $1,000,000 combined single limit
- Professional Liability: U.S. $1,000,000 per claim and in the aggregate

11. **Work Product**: Client shall have the unrestricted right to use the documents, analyses and other data prepared by Contractor under this Agreement ("Work Products"); provided, however Client shall not rely on or use the Work Products for any purpose other than the purposes under this Agreement and the Work Products shall not be changed without the prior written approval of Contractor. If Client releases the Work Products to a third party without Contractor's prior written consent, or changes or uses the Work Products other than as intended hereunder, (a) Client does so at its sole risk and discretion, (b) Contractor shall not be liable for any claims or damages resulting from the change or use or connected with the release or any third party's use of the Work Products and (c) Client shall indemnify, defend and hold Contractor harmless from any and all claims or damages related to the release, change or reuse.

12. **Limitation of Liability**: No employee of Contractor shall have individual liability to Client. To the extent permitted by law, the total liability of Contractor, its officers, directors, shareholders, employees and Subcontractors for any and all claims arising out of this Agreement, including attorneys’ fees, and whether caused by negligence, errors, omissions, strict liability, breach of contract or contribution, or indemnity claims based on third party claims, shall not exceed one million dollars (U.S. $1,000,000).

13. **No Consequential Damages**: In no event and under no circumstances shall Contractor be liable to Client for any principal, interest, loss of anticipated revenues, earnings, profits, increased expense of operation or construction, loss by reason of shutdown or non-operation due to late completion or otherwise or for any other economic, consequential, indirect or special damages.

14. **Information Provided by Others**: Client shall provide to Contractor in a timely manner any information Contractor indicates is needed to perform the services hereunder. Contractor may reasonably rely on the accuracy of information provided by Client and its representatives.

15. **Safety and Security**: Contractor has established and maintains programs and procedures for the safety of its employees. Unless specially included as a service to be provided under this Agreement, Contractor specially disclaims any authority or responsibility for job site safety and safety of persons other than Contractor's or Subcontractor's employees.

16. **Termination**: Either party may terminate this Agreement upon thirty (30) days prior written notice to the other party. Client shall pay Contractor for all services rendered to the date of termination plus reasonable expenses for winding down the services. If either party defaults in its obligations hereunder, the non-defaulting party, after giving seven (7) days written notice of its intention to
terminate or suspend performance under this Agreement, may, if cure of the default is not
commenced and diligently continued, terminate this Agreement or suspend performance under this
Agreement.

17. **Dispute Resolution**: Each party shall attempt to resolve conflicts or disputes under the Agreement in
a fair and reasonable manner and agree that if resolution cannot be made to attempt to mediate
the conflict by a professional mediator. If mediation does not settle any dispute or action which
arises under the Agreement or which relates in any way to the Agreement or the subject matter of
the Agreement, either party may pursue litigation after notifying the other party of their intentions.

18. **Successors and Assigns**: This Agreement is binding upon and will inure to the benefit of Client and
Contractor and their respective successors and assigns. Neither party may assign its rights or
obligations hereunder without the prior written consent of the other party.

19. **Notices**: Any notice required or permitted by this Agreement to be given shall be deemed to have
been duly given if in writing and delivered personally or five (5) days after mailing by first-class,
registered, or certified mail, return receipt requested, postage prepaid and addressed as follows:

**Client**:  
Name: __________________________  
Title: __________________________  
County of Sacramento, California  
9850 Goethe Road  
Sacramento, CA 95827  
Phone: __________________________  
Email: __________________________

**Contractor**:  
Betty Kamara  
Contracts Administrator  
Tetra Tech, Inc.  
2301 Lucien Way, Suite 120  
Maitland, FL 32751  
Phone: 321-441-8518 | 407-803-2551  
betty.kamara@tetratech.com

20. **Severability**: The invalidity, illegality, or unenforceability of any provision of this Agreement, or the
occurrence of any event rendering any portion or provision of this Agreement void, shall in no way
affect the validity or enforceability of any other portion or provision of the Agreement. Any void
provision shall be deemed severed from the Agreement and the balance of the Agreement shall be
construed and enforced as if the Agreement did not contain the particular portion or provision held
to be void. The parties further agree to reform the Agreement to replace any stricken provision with
a valid provision that comes as close as possible to the intent of the stricken provision. The
provisions of this section shall not prevent the entire Agreement from being void should a provision
which is of the essence of the Agreement be determined to be void.

21. **Governing Law and Venue**: This Agreement shall be governed by and interpreted according to the
laws of the State of California. The venue for any and all legal action necessary to enforce the
Agreement shall be the County of Sacramento.

22. **Access and Audits**: Contractor shall maintain adequate financial and program records to justify all
charges, expenses, and costs incurred in estimating and performing the work under this Agreement
for at least three (3) years following final payment to the Client as Federal Emergency Management
Agency sub-grantee as required by FEMA’s 322 Public Assistance Guide, page 114, as amended, or
any similar regulation, policy, or document adopted by FEMA subsequent to the execution of this
Agreement. The Client shall have access to all records, documents and information collected and/or
maintained by others in the course of the administration of the Agreement. This information shall
be made accessible at the Contractor’s place of business to the Client, including the Comptroller’s
Office and/or its designees, for purposes of inspection, reproduction, and audit without restriction.

23. **Compliance with Laws**: In performance of the Services, Contractor will comply with applicable
regulatory requirements including federal, state, special district, and local laws, rules, regulations, orders, codes, criteria and standards, and shall obtain all permits and licenses necessary to perform the Services under this Agreement at Contractor’s own expense.

24. **Non-Discrimination**: The Contractor warrants and represents that all of its employees are treated equally during employment without regard to race, color, religion, gender, age or national origin.

25. **Waiver**: A waiver by either the Client or Contractor of any breach of this Agreement shall not be binding upon the waiving party unless such waiver is in writing. In the event of a written waiver, such a waiver shall not affect the waiving party’s rights with respect to any other or further breach. The making or acceptance of a payment by either party with knowledge of the existence of a default or breach shall not operate or be construed to operate as a waiver of any subsequent default or breach.

26. **Entirety of Agreement**: The Client and the Contractor agree that this Agreement sets forth the entire agreement between the parties, and that there are no promises or understandings other than those stated herein. This Agreement supersedes all prior agreements, contracts, proposals, representations, negotiations, letters or other communications between the Client and Contractor pertaining to the Services, whether written or oral. None of the provisions, terms and conditions contained in this Agreement may be added to, modified, superseded or otherwise altered except by written instrument executed by the parties hereto.

27. **Modification**: The Agreement may not be modified unless such modifications are evidenced in writing and signed by both the Client and Contractor. Such modifications shall be in the form of a written Amendment executed by both parties.

28. **Contingent Fees**: The Contractor warrants that it has not employed or retained any company or person, other than a bona fide employee working solely for the Contractor to solicit or secure this Agreement and that it has not paid or agreed to pay any person, company, corporation, individual or firm, other than a bona fide employee working solely for the Contractor, any fee, commission, percentage, gift or any other consideration contingent upon or resulting from the award or making of this Agreement.

29. **Truth-in-Negotiation Certificate**: Execution of this Agreement by the Contractor shall act as the execution of a truth-in-negotiation certificate certifying that the wage rates and costs used to determine the compensation provided for in this Agreement are accurate, complete, and current as of the date of the Agreement.

30. **Confidentiality**: No reports, information, computer programs, documentation, and/or data given to, or prepared or assembled by the Contractor under this Agreement shall be made available to any individual or organization by the Contractor without prior written approval of the Client.

31. **Miscellaneous**: Client expressly agrees that all provisions of the Agreement, including the clause limiting the liability of Contractor, were mutually negotiated and that but for the inclusion of the limitation of liability clause in the Agreement, Contractor’s compensation for services would otherwise be greater and/or Contractor would not have entered into the Agreement.

In any action to enforce or interpret this Agreement, the prevailing party shall be entitled to recover, as part of its judgment, reasonable attorneys' fees and costs from the other party.

32. **Counterparts**: This Agreement may be executed in multiple counterparts, each of which shall be deemed to be an original instrument, but all of which taken together shall constitute one instrument.
IN WITNESS WHEREOF, the Contractor has caused this Agreement to be signed in its corporate name by its authorized representative, and the Client has caused this Agreement to be signed in its legal corporate name by persons authorized to execute this Agreement.

**CONTRACTOR:** TETRA TECH, INC.  

By: Jonathan Burgiel  
Title: Business Unit President  
Date: ________________

**CLIENT:** COUNTY OF SACRAMENTO, CALIFORNIA  

By:  
Title:  
Date: ________________

**ATTEST:**  

Betty Kamara, Contracts Administrator  

**ATTEST:**
EXHIBIT B
NONPROFESSIONAL SERVICES AGREEMENT

FEE SCHEDULE/MANNER OF PAYMENT

1. **CONTRACTOR’s Compensation.** The total of all fees paid to the CONTRACTOR for the performance of all services set forth in Exhibit A, including normal revisions (hereafter the “Services”), and for all authorized Reimbursable Expenses, shall not exceed the total sum of $250,000.00.

2. **Billable Rates.** CONTRACTOR shall be paid for the performance of Services on an hourly rate, daily rate, flat fee, lump sum or other basis, as set forth in Attachment 1 to Exhibit B, attached hereto and incorporated herein.

3. **CONTRACTOR’s Reimbursable Expenses.** Reimbursable Expenses shall be limited to actual expenditures of CONTRACTOR for expenses that are necessary for the proper completion of the Services and shall only be payable if specifically authorized in advance by CITY. In the event of a disaster, CONTRACTOR will provide CITY with a cost estimate to provide necessary services, as set forth in Attachment 1 to Exhibit A. CITY will then provide necessary authorization to allow CONTRACTOR to proceed.

4. **Payments to CONTRACTOR.**

   A. Payments to CONTRACTOR shall be made within a reasonable time after receipt of CONTRACTOR’s invoice, in proportion to services performed or as otherwise specified in Attachment 1 to Exhibit B. CONTRACTOR may request payment on a monthly basis. CONTRACTOR shall be responsible for the cost of supplying all documentation necessary to verify the monthly billings to the satisfaction of CITY.

   B. All invoices submitted by CONTRACTOR shall contain the following information:

   (1) Job/Project Name
   (2) CITY’s current Purchase Order Number
   (3) CONTRACTOR’s Invoice Number
   (4) Date of Invoice Issuance
   (5) Work Order Number (if applicable)
   (6) CITY representative identified on the Purchase Order
   (7) CONTRACTOR’s remit address for payment
   (8) Description of services billed under Invoice
   (9) Amount of Invoice (itemize all authorized Reimbursable Expenses)
   (10) Total Billed to Date under Agreement

   C. Items shall be separated into Services and Reimbursable Expenses. Billings that do not conform to the format outlined above shall be returned to CONTRACTOR for correction. CITY shall not be responsible for delays in payment to CONTRACTOR resulting from CONTRACTOR’s failure to comply with the invoice format described above.
D. Submitting Invoices:

(1) **Email.** Submit email invoices and any attachments to:

   apinvoices@cityofsacramento.org

(2) **Postal mail.** If emailing invoices and attachments is not an option, mail to:

   A/P PROCESSING CENTER
   CITY OF SACRAMENTO
   915 I ST FL 4
   SACRAMENTO CA 95814-2608

5. **Additional Services.** Additional Services are those services related to the scope of services of CONTRACTOR set forth in Exhibit A but not anticipated at the time of execution of this Agreement. Additional Services shall be provided only when a Supplemental Agreement authorizing the Additional Services is approved by CITY in accordance with CITY’s Supplemental Agreement procedures. CITY reserves the right to perform any Additional Services with its own staff or to retain other contractors to perform the Additional Services.

6. **Accounting Records of CONTRACTOR.** During performance of this Agreement and for a period of three (3) years after completing all Services and Additional Services hereunder, CONTRACTOR shall maintain all accounting and financial records related to this Agreement, including, but not limited to, records of CONTRACTOR’s costs for all Services and Additional Services performed under this Agreement and records of CONTRACTOR’s Reimbursable Expenses, in accordance with generally accepted accounting practices, and shall keep and make the records available for inspection and audit by representatives of the CITY upon reasonable written notice.

7. **Taxes.** CONTRACTOR shall pay, when and as due, any and all taxes incurred as a result of CONTRACTOR’s compensation hereunder, including estimated taxes, and shall provide CITY with proof of the payment upon request. CONTRACTOR hereby agrees to indemnify CITY for any claims, losses, costs, fees, liabilities, damages or injuries suffered by CITY arising out of CONTRACTOR’s breach of this Section 7.
Attachment 1 to Exhibit B
Fee Schedule

Introduction
This Attachment 1 to Exhibit B supplements and incorporates by this reference the Nonprofessional Services Agreement between Tetra Tech, Inc. (“CONTRACTOR”) and the City of Sacramento (“CITY”), (collectively referred to herein as the “parties”), for disaster debris planning, monitoring, consulting, and recovery services. This attachment provides the Fee Schedule for the Agreement. In the event of a conflict between this attachment and the Agreement, the terms of the attachment shall prevail.
EXHIBIT 1A: COST PROPOSAL FORM

COUNTY and the JURISDICTION(s)’ intention is to award a contract for services with CONSULTANT to be reimbursed for certain costs and expenses using a mutually agreed upon formula. Prices quoted shall include direct costs, indirect, and overhead costs, and profits. The hourly labor rates shall include all applicable overhead and profit. Non-labor related project costs will be billed to COUNTY or JURISDICTION(s) at cost without mark-up. Proposer may, but is not required to, submit individual cost proposals for each entity. The Proposer must provide:

- Classifications/titles and hourly rates for all proposed key personnel and indicate whether key personnel are CONSULTANT’s or subcontractor’s staff;
- Provide a description of the type of service provided by each labor category and skill class.
- A price breakdown for all tasks required; including labor, job titles, estimated number of hours each job title is required to work on each task.

<table>
<thead>
<tr>
<th>POSITIONS</th>
<th>HOURLY RATES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Manager</td>
<td>$85.00</td>
</tr>
<tr>
<td>Operations Managers</td>
<td>$65.00</td>
</tr>
<tr>
<td>Scheduler/Expeditors</td>
<td>$50.00</td>
</tr>
<tr>
<td>GIS Analyst</td>
<td>$59.00</td>
</tr>
<tr>
<td>Field Supervisors</td>
<td>$48.00</td>
</tr>
<tr>
<td>Debris Site/Tower Monitors</td>
<td>$36.00</td>
</tr>
<tr>
<td>Environmental Specialist</td>
<td>$75.00</td>
</tr>
<tr>
<td>Data Manager</td>
<td>$55.00</td>
</tr>
<tr>
<td>Field Coordinators (Crew Monitors)</td>
<td>$36.00</td>
</tr>
<tr>
<td>Load Ticket Data Entry Clerks (QA/QC)</td>
<td>$0.00</td>
</tr>
<tr>
<td>Billing/Invoice Analysts</td>
<td>$45.00</td>
</tr>
<tr>
<td>Project Coordinators</td>
<td>$34.00</td>
</tr>
<tr>
<td>FEMA Reimbursement Specialists</td>
<td>$145.00</td>
</tr>
<tr>
<td>Public Assurance Coordinators</td>
<td>$110.00</td>
</tr>
</tbody>
</table>

OTHER REQUIRED POSITIONS
Proposer may include other positions with hourly rates. (See Attached)
EXHIBIT 1A: COST PROPOSAL FORM (CON’T)

PLANNING SERVICES PRIOR TO A DISASTER

<table>
<thead>
<tr>
<th>Planning Services</th>
<th>Job Title</th>
<th># of Hours of Consulting</th>
<th>Total Cost *</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Assistance in securing contractors for debris clearance and removal involving</td>
<td>Planner II</td>
<td>20</td>
<td>$ 2,500.00</td>
</tr>
<tr>
<td>document development, review, and/or selection assistance.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Disaster Management Planning to include written plan reviews, validation,</td>
<td>Planner II</td>
<td>60</td>
<td>$ 7,500.00</td>
</tr>
<tr>
<td>updating, and recommendations for improvements.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Participation in annual workshops or planning meetings.</td>
<td>Planner II</td>
<td>Included at no charge</td>
<td>Included at no charge</td>
</tr>
<tr>
<td>Proposer may include other consulting services.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Training Title</th>
<th>Trainer Title</th>
<th># of Hours of Training</th>
<th>Total Cost *</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Disaster Preparedness Specific to Sacramento County covering multi-agency</td>
<td>Planner II</td>
<td>24</td>
<td>$ 3,000.00</td>
</tr>
<tr>
<td>coordination, public relations, debris eligibility, and FEMA Public Assistance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reimbursement Training</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proposer may include other training.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* The total costs listed above are estimates only. Total costs will be negotiated once the full scope of work and staffing levels are determined and agreed upon. These estimates are based on a $125 hourly rate for a Planner II.
## Pricing
### Additional Positions

The following exhibits provide a listing of additional positions that may be required to complete the tasks listed in the County’s request for proposal.

### Exhibit 6-1: Environmental Debris Removal Monitoring/Consulting (Wildfires)

<table>
<thead>
<tr>
<th>Positions</th>
<th>Hourly Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Project Manager</td>
<td>$225.00</td>
</tr>
<tr>
<td>Health and Safety Officer</td>
<td>$90.00</td>
</tr>
<tr>
<td>Operations Chief</td>
<td>$99.00</td>
</tr>
<tr>
<td>Division Supervisors</td>
<td>$69.00</td>
</tr>
<tr>
<td>Task Force Leader – Cleanup Site</td>
<td>$55.00</td>
</tr>
<tr>
<td>Task Force Leader – Materials Receiving Facilities</td>
<td>$95.00</td>
</tr>
<tr>
<td>Site Inspector</td>
<td>$85.00</td>
</tr>
<tr>
<td>Planning Chief</td>
<td>$95.00</td>
</tr>
<tr>
<td>Planning Assistant</td>
<td>$45.00</td>
</tr>
<tr>
<td>GIS Professional</td>
<td>$59.00</td>
</tr>
<tr>
<td>Logistic Chief</td>
<td>$85.00</td>
</tr>
<tr>
<td>Financial/Administrative</td>
<td>$95.00</td>
</tr>
<tr>
<td>Accounting and Administrative Staff</td>
<td>$45.00</td>
</tr>
</tbody>
</table>

### Exhibit 6-2: Homeland Security and Emergency Management Planning and Other Consulting Services

<table>
<thead>
<tr>
<th>Positions</th>
<th>Hourly Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative Specialist I</td>
<td>$40.00</td>
</tr>
<tr>
<td>Administrative Specialist II</td>
<td>$48.00</td>
</tr>
<tr>
<td>Research Assistant</td>
<td>$51.00</td>
</tr>
<tr>
<td>Proposal Coordinator</td>
<td>$53.00</td>
</tr>
<tr>
<td>Comm. Technician</td>
<td>$57.00</td>
</tr>
<tr>
<td>Help Desk Operator</td>
<td>$62.00</td>
</tr>
<tr>
<td>Administrative Specialist III</td>
<td>$64.00</td>
</tr>
<tr>
<td>Research Assistant II</td>
<td>$66.00</td>
</tr>
<tr>
<td>Analytical Aide</td>
<td>$75.00</td>
</tr>
<tr>
<td>Planning Aide</td>
<td>$80.00</td>
</tr>
<tr>
<td>Consulting Aide</td>
<td>$85.00</td>
</tr>
<tr>
<td>Engineer I</td>
<td>$85.00</td>
</tr>
<tr>
<td>Positions</td>
<td>Hourly Rate</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Assistant Planner/Scientist/Assessor/Analyst/Environmental Specialist</td>
<td>$95.00</td>
</tr>
<tr>
<td>Program Planner/Scientist/Assessor/Analyst/Environmental Specialist</td>
<td>$100.00</td>
</tr>
<tr>
<td>Consultant Planner/Scientist/Assessor/Analyst/Environmental Specialist</td>
<td>$110.00</td>
</tr>
<tr>
<td>Engineer II</td>
<td>$110.00</td>
</tr>
<tr>
<td>Public Assistance/Grant Management Consultant</td>
<td>$115.00</td>
</tr>
<tr>
<td>Engineer III</td>
<td>$120.00</td>
</tr>
<tr>
<td>Project Manager/Consultant/Planner/Scientist/Assessor/Analyst/Environmental Specialist II</td>
<td>$125.00</td>
</tr>
<tr>
<td>Project Manager/Consultant/Planner/Scientist/Assessor/Analyst/Environmental Specialist III</td>
<td>$135.00</td>
</tr>
<tr>
<td>Senior Public Assistance/Grant Management Consultant</td>
<td>$135.00</td>
</tr>
<tr>
<td>Senior Engineer I</td>
<td>$135.00</td>
</tr>
<tr>
<td>Senior Planner/Assessor/Scientist/Analyst</td>
<td>$145.00</td>
</tr>
<tr>
<td>Supervising Public Assistance Consultant</td>
<td>$150.00</td>
</tr>
<tr>
<td>Senior Consultant/Planner/Scientist/Assessor/Environmental Specialist</td>
<td>$150.00</td>
</tr>
<tr>
<td>Supervising Consultant/Planner/Scientist/Assessor/Environmental Specialist</td>
<td>$158.00</td>
</tr>
<tr>
<td>Program Manager</td>
<td>$165.00</td>
</tr>
<tr>
<td>Senior Engineer II</td>
<td>$165.00</td>
</tr>
<tr>
<td>Senior Program Manager</td>
<td>$175.00</td>
</tr>
<tr>
<td>Principal Consultant/Planner/Scientist/Assessor/Analyst</td>
<td>$195.00</td>
</tr>
<tr>
<td>Senior Engineer III</td>
<td>$195.00</td>
</tr>
<tr>
<td>Principal in Charge/Executive Consultant/Planner/Scientist/Assessor</td>
<td>$225.00</td>
</tr>
<tr>
<td>Subject Matter Expert</td>
<td>$244.00</td>
</tr>
</tbody>
</table>

Appeals Support: The rates for legal services such as those provided by the renowned Senior FEMA Attorney, Mr. Ernie Abbott and other attorneys shall range from $150/hour to $600/hour.
Price Breakdown

As requested in the County’s pricing form, Exhibit 6-3 provides a price breakdown for all tasks required, including labor, job titles, and an estimated number of hours each job title is required to work on the task. The estimate is based on a the most likely threat identified in the County’s disaster debris management plan (DDMP), involving a severe storm with flooding. We based our estimate on 200,000 cubic yards (CY) of debris to be collected within a 30-day period. However, this scenario should only be used as an example since staffing numbers and number of hours will vary greatly depending on the type and severity of the actual disaster.

Exhibit 6-3: Estimate Based on Flooding Scenario

<table>
<thead>
<tr>
<th>Positions</th>
<th>Hours</th>
<th>Hourly Rate</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Manager</td>
<td>300</td>
<td>$85.00</td>
<td>$25,500.00</td>
</tr>
<tr>
<td>Operations Managers</td>
<td>300</td>
<td>$65.00</td>
<td>$19,500.00</td>
</tr>
<tr>
<td>Scheduler/Expeditors</td>
<td>32</td>
<td>$50.00</td>
<td>$1,600.00</td>
</tr>
<tr>
<td>GIS Analyst</td>
<td>8</td>
<td>$59.00</td>
<td>$472.00</td>
</tr>
<tr>
<td>Field Supervisor</td>
<td>720</td>
<td>$48.00</td>
<td>$34,560.00</td>
</tr>
<tr>
<td>Debris Site/Tower Monitors</td>
<td>1,920</td>
<td>$36.00</td>
<td>$69,120.00</td>
</tr>
<tr>
<td>Environmental Specialist</td>
<td>8</td>
<td>$75.00</td>
<td>$600.00</td>
</tr>
<tr>
<td>Data Manager</td>
<td>300</td>
<td>$55.00</td>
<td>$16,500.00</td>
</tr>
<tr>
<td>Field Coordinators (Crew Monitors)</td>
<td>3,120</td>
<td>$36.00</td>
<td>$112,320.00</td>
</tr>
<tr>
<td>Load Ticket Data Entry Clerks</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Billing/Invoice Analysts</td>
<td>40</td>
<td>$45.00</td>
<td>$1,800.00</td>
</tr>
<tr>
<td>Project Coordinators</td>
<td>300</td>
<td>$34.00</td>
<td>$10,200.00</td>
</tr>
<tr>
<td>FEMA Reimbursement Specialist</td>
<td>8</td>
<td>$145.00</td>
<td>$1,160.00</td>
</tr>
<tr>
<td>Public Assistance Coordinators</td>
<td>16</td>
<td>$110.00</td>
<td>$1,760.00</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>$295,092.00</strong></td>
</tr>
</tbody>
</table>

**Staffing Assumptions**

- Average truckload of debris hauled is 50 CY.
- The average truck-to-loading equipment ratio will be 2:1.
- The average number of loads per day will be five loads. This takes into account locations of the debris management sites and FDS included in the County’s DDMP (NARS, Kiefer Landfill, SATS, Delta).
EXHIBIT C
NONPROFESSIONAL SERVICES AGREEMENT

FACILITIES AND EQUIPMENT TO BE PROVIDED BY CITY

CITY shall [check one]  

X  Not furnish any facilities or equipment for this Agreement;

or

_  Furnish the following facilities or equipment for the Agreement [list, if applicable]:


EXHIBIT D
NONPROFESSIONAL SERVICES AGREEMENT

GENERAL PROVISIONS

1. Independent Contractor.

A. It is understood and agreed that CONTRACTOR (including CONTRACTOR’s employees) is an independent contractor and that no relationship of employer-employee exists between the parties hereto for any purpose whatsoever. Neither CONTRACTOR nor CONTRACTOR’s assigned personnel shall be entitled to any benefits payable to employees of CITY. CITY is not required to make any deductions or withholdings from the compensation payable to CONTRACTOR under the provisions of this Agreement, and CONTRACTOR shall be issued a Form 1099 for its services hereunder. As an independent contractor, CONTRACTOR hereby agrees to indemnify and hold CITY harmless from any and all claims that may be made against CITY based upon any contention by any of CONTRACTOR’s employees or by any third party, including but not limited to any state or federal agency, that an employer-employee relationship or a substitute therefor exists for any purpose whatsoever by reason of this Agreement or by reason of the nature and/or performance of any Services under this Agreement. (As used in this Exhibit D, the term “Services” shall include both Services and Additional Services as such terms are defined elsewhere in this Agreement.)

B. It is further understood and agreed by the parties hereto that CONTRACTOR, in the performance of its obligations hereunder, is subject to the control and direction of CITY as to the designation of tasks to be performed and the results to be accomplished under this Agreement, but not as to the means, methods, or sequence used by CONTRACTOR for accomplishing such results. To the extent that CONTRACTOR obtains permission to, and does, use CITY facilities, space, equipment or support services in the performance of this Agreement, this use shall be at the CONTRACTOR’s sole discretion based on the CONTRACTOR’s determination that such use will promote CONTRACTOR’s efficiency and effectiveness. Except as may be specifically provided elsewhere in this Agreement, the CITY does not require that CONTRACTOR use CITY facilities, equipment or support services or work in CITY locations in the performance of this Agreement.

C. If, in the performance of this Agreement, any third persons are employed by CONTRACTOR, such persons shall be entirely and exclusively under the direction, supervision, and control of CONTRACTOR. Except as may be specifically provided elsewhere in this Agreement, all terms of employment, including hours, wages, working conditions, discipline, hiring, and discharging, or any other terms of employment or requirements of law, shall be determined by CONTRACTOR. It is further understood and agreed that CONTRACTOR shall issue W-2 or 1099 Forms for income and employment tax purposes, for all of CONTRACTOR’s assigned personnel and subcontractors.

D. The provisions of this Section 1 shall survive any expiration or termination of this Agreement. Nothing in this Agreement shall be construed to create an exclusive relationship between CITY and CONTRACTOR. CONTRACTOR may represent, perform
2. Licenses; Permits, Etc. CONTRACTOR represents and warrants that CONTRACTOR has all licenses, permits, City Business Operations Tax Certificate, qualifications, and approvals of whatsoever nature that are legally required for CONTRACTOR to practice its profession or provide any services under the Agreement. CONTRACTOR represents and warrants that CONTRACTOR shall, at its sole cost and expense, keep in effect or obtain at all times during the term of this Agreement any licenses, permits, and approvals that are legally required for CONTRACTOR to practice its profession or provide such Services. Without limiting the generality of the foregoing, if CONTRACTOR is an out-of-state corporation, CONTRACTOR warrants and represents that it possesses a valid certificate of qualification to transact business in the State of California issued by the California Secretary of State pursuant to Section 2105 of the California Corporations Code.

3. Time. CONTRACTOR shall devote such time and effort to the performance of Services pursuant to this Agreement as is necessary for the satisfactory and timely performance of CONTRACTOR’s obligations under this Agreement. Neither party shall be considered in default of this Agreement, to the extent that party’s performance is prevented or delayed by any cause, present or future, that is beyond the reasonable control of that party.

4. CONTRACTOR Not Agent. Except as CITY may specify in writing, CONTRACTOR and CONTRACTOR’s personnel shall have no authority, express or implied, to act on behalf of CITY in any capacity whatsoever as an agent. CONTRACTOR and CONTRACTOR’s personnel shall have no authority, express or implied, to bind CITY to any obligations whatsoever.

5. Conflicts of Interest. CONTRACTOR covenants that neither it, nor any officer or principal of its firm, has or shall acquire any interest, directly or indirectly, that would conflict in any manner with the interests of CITY or that would in any way hinder CONTRACTOR’s performance of Services under this Agreement. CONTRACTOR further covenants that in the performance of this Agreement, no person having any such interest shall be employed by it as an officer, employee, agent or subcontractor, without the written consent of CITY. CONTRACTOR agrees to avoid conflicts of interest or the appearance of any conflicts of interest with the interests of CITY at all times during the performance of this Agreement. If CONTRACTOR is or employs a former officer or employee of the CITY, CONTRACTOR and any such employee(s) shall comply with the provisions of Sacramento City Code Section 2.16.090 pertaining to appearances before the City Council or any CITY department, board, commission or committee.

6. Confidentiality of CITY Information. During performance of this Agreement, CONTRACTOR may gain access to and use CITY information regarding inventions, machinery, products, prices, apparatus, costs, discounts, future plans, business affairs, governmental affairs, processes, trade secrets, technical matters, systems, facilities, customer lists, product design, copyright, data, and other vital information (hereafter collectively referred to as “City Information”) that are valuable, special and unique assets of the CITY. CONTRACTOR agrees to protect all City Information and treat it as strictly confidential, and further agrees that CONTRACTOR shall not at any time, either directly or indirectly, divulge, disclose or communicate in any manner any City Information to any third party without the prior written consent of CITY. In addition, CONTRACTOR shall comply with all CITY policies governing the use of the CITY network and technology systems, as set forth in applicable provisions of the City of Sacramento Administrative Policy Instructions # 30.
violation by CONTRACTOR of this Section 6 shall be a material violation of this Agreement and shall justify legal and/or equitable relief.

7. CONTRACTOR Information.

A. CITY shall have full ownership and control, including ownership of any copyrights, of all information prepared, produced, or provided by CONTRACTOR pursuant to this Agreement. In this Agreement, the term “information” shall be construed to mean and include: any and all work product, submittals, reports, plans, specifications, and other deliverables consisting of documents, writings, handwritings, typewriting, printing, photostatting, photographing, computer models, and any other computerized data and every other means of recording any form of information, communications, or representation, including letters, works, pictures, drawings, sounds, or symbols, or any combination thereof. CONTRACTOR shall not be responsible for any unauthorized modification or use of such information for other than its intended purpose by CITY.

B. CONTRACTOR shall fully defend, indemnify and hold harmless CITY, its officers and employees, and each and every one of them, from and against any and all claims, actions, lawsuits or other proceedings alleging that all or any part of the information prepared, produced, or provided by CONTRACTOR pursuant to this Agreement infringes upon any third party’s trademark, trade name, copyright, patent or other intellectual property rights. CITY shall make reasonable efforts to notify CONTRACTOR not later than ten (10) days after CITY is served with any such claim, action, lawsuit or other proceeding, provided that CITY’s failure to provide such notice within such time period shall not relieve CONTRACTOR of its obligations hereunder, which shall survive any termination or expiration of this Agreement.

C. All proprietary and other information received from CONTRACTOR by CITY, whether received in connection with CONTRACTOR’s proposal to CITY or in connection with any Services performed by CONTRACTOR, will be disclosed upon receipt of a request for disclosure, pursuant to the California Public Records Act; provided, however, that, if any information is set apart and clearly marked “trade secret” when it is provided to CITY, CITY shall give notice to CONTRACTOR of any request for the disclosure of such information. The CONTRACTOR shall then have five (5) days from the date it receives such notice to enter into an agreement with the CITY, satisfactory to the City Attorney, providing for the defense of, and complete indemnification and reimbursement for all costs (including plaintiff’s attorney fees) incurred by CITY in any legal action to compel the disclosure of such information under the California Public Records Act. The CONTRACTOR shall have sole responsibility for defense of the actual “trade secret” designation of such information.

D. The parties understand and agree that any failure by CONTRACTOR to respond to the notice provided by CITY and/or to enter into an agreement with CITY, in accordance with the provisions of subsection C, above, shall constitute a complete waiver by CONTRACTOR of any rights regarding the information designated “trade secret” by CONTRACTOR, and such information shall be disclosed by CITY pursuant to applicable procedures required by the Public Records Act.
8. **Standard of Performance.** CONTRACTOR shall perform all Services required pursuant to this Agreement in the manner and according to the standards currently observed by a competent practitioner of CONTRACTOR’s profession in California. All products of whatsoever nature that CONTRACTOR delivers to CITY pursuant to this Agreement shall be prepared in a professional manner and conform to the standards of quality normally observed by a person currently practicing in CONTRACTOR’s profession, and shall be provided in accordance with any schedule of performance specified in Exhibit A. CONTRACTOR shall assign only competent personnel to perform Services pursuant to this Agreement. CONTRACTOR shall notify CITY in writing of any changes in CONTRACTOR’s staff assigned to perform the Services required under this Agreement, prior to any such performance. In the event that CITY, at any time during the term of this Agreement, desires the removal of any person assigned by CONTRACTOR to perform Services pursuant to this Agreement, because CITY, in its sole discretion, determines that such person is not performing in accordance with the standards required herein, CONTRACTOR shall remove such person immediately upon receiving notice from CITY of the desire of CITY for the removal of such person.

9. **Term; Suspension; Termination.**

A. This Agreement shall become effective on the date that it is approved by both parties, set forth on the first page of the Agreement, and shall continue in effect until both parties have fully performed their respective obligations under this Agreement, unless sooner terminated as provided herein.

B. CITY shall have the right at any time to temporarily suspend CONTRACTOR’s performance hereunder, in whole or in part, by giving a written notice of suspension to CONTRACTOR. If CITY gives such notice of suspension, CONTRACTOR shall immediately suspend its activities under this Agreement, as specified in such notice.

C. CITY shall have the right to terminate this Agreement at any time by giving a written notice of termination to CONTRACTOR. If CITY gives such notice of termination, CONTRACTOR shall immediately cease rendering Services pursuant to this Agreement. If CITY terminates this Agreement:

1. CONTRACTOR shall, not later than five days after such notice of termination, deliver to CITY copies of all information prepared pursuant to this Agreement.

2. CITY shall pay CONTRACTOR the reasonable value of Services rendered by CONTRACTOR prior to termination; provided, however, CITY shall not in any manner be liable for lost profits that might have been made by CONTRACTOR had the Agreement not been terminated or had CONTRACTOR completed the Services required by this Agreement. In this regard, CONTRACTOR shall furnish to CITY such financial information as in the judgment of the CITY is necessary for CITY to determine the reasonable value of the Services render by CONTRACTOR. The foregoing is cumulative and does not affect any right or remedy that CITY may have in law or equity.
10. **Indemnity.**

A. **Indemnity:** CONTRACTOR shall defend, hold harmless and indemnify CITY, its officers and employees, and each and every one of them, from and against any and all actions, damages, costs, liabilities, claims, demands, losses, judgments, penalties, costs and expenses of every type and description, including, but not limited to, any fees and/or costs reasonably incurred by CITY’s staff attorneys or outside attorneys and any fees and expenses incurred in enforcing this provision (hereafter collectively referred to as “Liabilities”), including but not limited to Liabilities arising from personal injury or death, damage to personal, real or intellectual property or the environment, contractual or other economic damages, or regulatory penalties, arising out of or in any way connected with performance of or failure to perform this Agreement by CONTRACTOR, any subcontractor or agent, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, whether or not (i) such Liabilities are caused in part by a party indemnified hereunder or (ii) such Liabilities are litigated, settled or reduced to judgment; provided that the foregoing indemnity does not apply to liability for any damage or expense for death or bodily injury to persons or damage to property to the extent arising from the sole negligence or willful misconduct of CITY, its agents, servants, or independent contractors who are directly responsible to CITY, except when such agents, servants, or independent contractors are under the direct supervision and control of CONTRACTOR.

B. **Insurance Policies; Intellectual Property Claims:** The existence or acceptance by CITY of any of the insurance policies or coverages described in this Agreement shall not affect or limit any of CITY’s rights under this Section 10, nor shall the limits of such insurance limit the liability of CONTRACTOR hereunder. This Section 10 shall not apply to any intellectual property claims, actions, lawsuits or other proceedings subject to the provisions of Section 7.B., above. The provisions of this Section 10 shall survive any expiration or termination of this Agreement.

11. **Insurance Requirements.** During the entire term of this Agreement, CONTRACTOR shall maintain the insurance coverage described in this Section 11.

Full compensation for all premiums that CONTRACTOR is required to pay for the insurance coverage described herein shall be included in the compensation specified for the Services provided by CONTRACTOR under this Agreement. No additional compensation will be provided for CONTRACTOR’s insurance premiums. Any available insurance proceeds in excess of the specified minimum limits and coverages shall be available to the CITY.

It is understood and agreed by the CONTRACTOR that its liability to the CITY shall not in any way be limited to or affected by the amount of insurance coverage required or carried by the CONTRACTOR in connection with this Agreement.

A. **Minimum Scope & Limits of Insurance Coverage**

1. **Commercial General Liability Insurance** providing coverage at least as broad as ISO CGL Form 00 01 on an occurrence basis for bodily injury, including death, of one or more persons, property damage, and personal injury, arising out of activities...
performed by or on behalf of CONTRACTOR, its sub-consultants, and subcontractors, products and completed operations of CONTRACTOR, its sub-consultants, and subcontractors, and premises owned, leased, or used by CONTRACTOR, its sub-consultants, and subcontractors, with limits of not less than one million dollars ($1,000,000) per occurrence. The policy shall provide contractual liability and products and completed operations coverage for the term of the policy.

(2) **Automobile Liability Insurance** providing coverage at least as broad as ISO Form CA 00 01 for bodily injury, including death, of one or more persons, property damage, and personal injury, with limits of not less than one million dollars ($1,000,000) per accident. The policy shall provide coverage for owned, non-owned, and/or hired autos as appropriate to the operations of the CONTRACTOR.

No automobile liability insurance shall be required if CONTRACTOR completes the following certification:

“I certify that a motor vehicle will not be used in the performance of any work or services under this agreement.” ________ (CONTRACTOR initials)

(3) **Excess Insurance**: The minimum limits of insurance required above may be satisfied by a combination of primary and umbrella or excess insurance coverage; provided that any umbrella or excess insurance shall contain, or be endorsed to contain, a provision that it shall apply on a primary basis for the benefit of the CITY, and any insurance or self-insurance maintained by CITY, its officials, employees, or volunteers shall be in excess of such umbrella or excess coverage and shall not contribute with it.

No Workers' Compensation insurance shall be required if CONTRACTOR completes the following certification:

“I certify that my business has no employees, and that I do not employ anyone. I am exempt from the legal requirements to provide Workers' Compensation insurance.” ________ (CONTRACTOR initials)
B. Additional Insured Coverage

1. **Commercial General Liability Insurance:** The CITY, its officials, employees, and volunteers shall be covered by policy terms or endorsement as additional insureds as respects general liability arising out of: activities performed by or on behalf of CONTRACTOR, its sub-consultants, and subcontractors; products and completed operations of CONTRACTOR, its sub-consultants, and subcontractors; and premises owned, leased, or used by CONTRACTOR, its sub-consultants, and subcontractors.

2. **Automobile Liability Insurance:** The CITY, its officials, employees, and volunteers shall be covered by policy terms or endorsement as additional insureds as respects auto liability.

C. Other Insurance Provisions

The policies are to contain, or be endorsed to contain, the following provisions:

1. CONTRACTOR’s insurance coverage, including excess insurance, shall be primary insurance as respects CITY, its officials, employees, and volunteers. Any insurance or self-insurance maintained by CITY, its officials, employees, or volunteers shall be in excess of CONTRACTOR’s insurance and shall not contribute with it.

2. Any failure to comply with reporting provisions of the policies shall not affect coverage provided to CITY, its officials, employees, or volunteers.

3. Coverage shall state that CONTRACTOR’s insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer’s liability.

4. CITY will be provided with thirty (30) days written notice of cancellation or material change in the policy language or terms.

D. Acceptability of Insurance

Insurance shall be placed with insurers with a Bests’ rating of not less than A:VI. Self-insured retentions, policy terms or other variations that do not comply with the requirements of this Section 11 must be declared to and approved by the CITY in writing prior to execution of this Agreement.

E. Verification of Coverage

1. CONTRACTOR shall furnish CITY with certificates and required endorsements evidencing the insurance required. The certificates and endorsements shall be forwarded to the CITY representative named in Exhibit A. Copies of policies shall be delivered to the CITY on demand. Certificates of insurance shall be signed by an authorized representative of the insurance carrier.
(2) For all insurance policy renewals during the term of this Agreement, CONTRACTOR shall send insurance certificates reflecting the policy renewals directly to:

City of Sacramento
c/o EXIGIS LLC
P.O. Box 4668 ECM- #35050
New York, NY 10168-4668

Insurance certificates also may be faxed to (888) 355-3599, or e-mailed to: certificates-sacramento@riskworks.com

(3) The CITY may withdraw its offer of contract or cancel this Agreement if the certificates of insurance and endorsements required have not been provided prior to execution of this Agreement. The CITY may withhold payments to CONTRACTOR or cancel the Agreement if the insurance is canceled or CONTRACTOR otherwise ceases to be insured as required herein.

F. Subcontractors

CONTRACTOR shall require and verify that all sub-consultants and subcontractors maintain insurance coverage that meets the minimum scope and limits of insurance coverage specified in subsection A, above.

12. Equal Employment Opportunity. During the performance of this Agreement, CONTRACTOR, for itself, its assignees and successors in interest, agrees as follows:

A. Compliance With Regulations: CONTRACTOR shall comply with the Executive Order 11246 entitled “Equal Opportunity in Federal Employment”, as amended by Executive Order 11375 and 12086, and as supplemented in Department of Labor regulations (41 CFR Chapter 60), hereinafter collectively referred to as the “Regulations”.

B. Nondiscrimination: CONTRACTOR, with regards to the work performed by it after award and prior to completion of the work pursuant to this Agreement, shall not discriminate on the ground of race, color, religion, sex, national origin, age, marital status, physical handicap or sexual orientation in selection and retention of subcontractors, including procurement of materials and leases of equipment. CONTRACTOR shall not participate either directly or indirectly in discrimination prohibited by the Regulations.

C. Solicitations for Subcontractors, Including Procurement of Materials and Equipment: In all solicitations either by competitive bidding or negotiations made by CONTRACTOR for work to be performed under any subcontract, including all procurement of materials or equipment, each potential subcontractor or supplier shall be notified by CONTRACTOR of CONTRACTOR’s obligation under this Agreement and the Regulations relative to nondiscrimination on the ground of race, color, religion, sex, national origin, age, marital status, physical handicap or sexual orientation.

D. Information and Reports: CONTRACTOR shall provide all information and reports required by the Regulations, or by any orders or instructions issued pursuant thereto, and shall
permit access to its books, records, accounts, other sources of information and its facilities as may be determined by the CITY to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of CONTRACTOR is in the exclusive possession of another who fails or refuses to furnish this information, CONTRACTOR shall so certify to the CITY, and shall set forth what efforts it has made to obtain the information.

E. Sanctions for Noncompliance: In the event of noncompliance by CONTRACTOR with the nondiscrimination provisions of this Agreement, the CITY shall impose such sanctions as it may determine to be appropriate including, but not limited to:

(1) Withholding of payments to CONTRACTOR under this Agreement until CONTRACTOR complies;

(2) Cancellation, termination, or suspension of the Agreement, in whole or in part.

F. Incorporation of Provisions: CONTRACTOR shall include the provisions of subsections A through E, above, in every subcontract, including procurement of materials and leases of equipment, unless exempted by the Regulations, or by any order or instructions issued pursuant thereto. CONTRACTOR shall take such action with respect to any subcontract or procurement as the CITY may direct as a means of enforcing such provisions including sanctions for noncompliance; provided, however, that in the event CONTRACTOR becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, CONTRACTOR may request CITY to enter such litigation to protect the interests of CITY.

13. Entire Agreement. This document, including all Exhibits, contains the entire agreement between the parties and supersedes whatever oral or written understanding they may have had prior to the execution of this Agreement. No alteration to the terms of this Agreement shall be valid unless approved in writing by CONTRACTOR, and by CITY, in accordance with applicable provisions of the Sacramento City Code.

14. Severability. If any portion of this Agreement or the application thereof to any person or circumstance shall be held invalid or unenforceable, the remainder of this Agreement shall not be affected thereby and shall be enforced to the greatest extent permitted by law.

15. Waiver. Neither CITY acceptance of, or payment for, any Service or Additional Service performed by CONTRACTOR, nor any waiver by either party of any default, breach or condition precedent, shall be construed as a waiver of any provision of this Agreement, nor as a waiver of any other default, breach or condition precedent or any other right hereunder.

16. Enforcement of Agreement. This Agreement shall be governed, construed and enforced in accordance with the laws of the State of California. Venue of any litigation arising out of or connected with this Agreement shall lie exclusively in the state trial court or Federal District Court located in Sacramento County in the State of California, and the parties consent to jurisdiction over their persons and over the subject matter of any such litigation in such courts, and consent to service of process issued by such courts.

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17. **Assignment Prohibited.** The expertise and experience of CONTRACTOR are material considerations for this Agreement. CITY has a strong interest in the qualifications and capability of the persons and entities that will fulfill the obligations imposed on CONTRACTOR under this Agreement. In recognition of this interest, CONTRACTOR shall not assign any right or obligation pursuant to this Agreement without the written consent of the CITY. Any attempted or purported assignment without CITY’s written consent shall be void and of no effect.

18. **Binding Effect.** This Agreement shall be binding on the heirs, executors, administrators, successors and assigns of the parties, subject to the provisions of Section 17, above.

19. **Use Tax Requirements.** During the performance of this Agreement, CONTRACTOR, for itself, its assignees and successors in interest, agrees as follows:

A. **Use Tax Direct Payment Permit:** For all leases and purchases of materials, equipment, supplies, or other tangible personal property used to perform the Contract or Agreement and shipped from outside California, the Contractor and any subcontractors leasing or purchasing such materials, equipment, supplies or other tangible personal property shall obtain a Use Tax Direct Payment Permit from the California State Board of Equalization (“SBE”) in accordance with the applicable SBE criteria and requirements.

B. **Sellers Permit:** For any construction contract and any construction subcontract in the amount of $5,000,000 or more, Contractor and the subcontractor(s) shall obtain sellers permits from the SBE and shall register the jobsite as the place of business for the purpose of allocating local sales and use tax to the City. Contractor and its subcontractors shall remit the self-accrued use tax to the SBE, and shall provide a copy of each remittance to the City.

C. The above provisions shall apply in all instances unless prohibited by the funding source for the Contract or Agreement.