PROPOSAL FOR Disaster Debris Monitoring Services

Franklin County, Florida





CLEAR SOLUTIONS"

Copy - September 2018

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September 14, 2018



Franklin County Clerk of Clerks Attn: Lori Hines 33 Market Street, Suite 203 Apalachicola, FL 32320

Subject: Disaster Debris Monitoring Services

Dear Ms. Hines and Members of the Evaluation Committee,

Tetra Tech is pleased to submit the enclosed proposal in response to Franklin County's (County) request for proposals for emergency disaster debris removal monitoring services. Our team of disaster recovery experts offers a unique integration of mitigation, emergency preparedness and planning, and disaster response and recovery management services, providing end-to-end solutions for the County. We are one of the leading firms in the nation in the field of disaster response and recovery and are well suited to assist the County for the following reasons:

- Nationally Recognized Leader in Disaster Recovery. Our team has successfully assisted over 300 local and state government clients across the nation with planning for and recovering from natural and human-caused disasters and has extensive experience successfully managing multiple disaster response and recovery operations across the United States simultaneously. Our team has overseen and managed the recovery of over 103 million cubic yards (CYs) of debris, resulting in excess of \$6 billion in reimbursable costs to our clients. We have served as the ground-zero debris monitoring consultant for many clients affected by our nation's most catastrophic natural disasters, including communities in Florida (Hurricane Irma and Matthew); Texas (Hurricane Harvey); California (Wildfires); North Carolina and Virginia (Hurricane Irene); New Jersey (Hurricane Sandy); and Colorado (Flooding).
- Extensive Experience Throughout the State of Florida. Since 2004, our team has monitored collection and removal of nearly 60 million CYs of debris in Florida. Our team has assisted numerous communities in Florida with response and recovery efforts after Hurricanes Charley, Frances, Jeanne, Ivan, Dennis, Katrina, Wilma, and most recently, Matthew and Irma. In addition, our team has assisted communities after a variety of other disasters, including tropical storms, tornadoes, fires, and floods. Tetra Tech is proud of our experience in Florida and is committed to successfully managing all phases of debris monitoring for our clients after a debris-generating event.
- Immediate Response Capability. With disaster response and recovery experts located throughout the state, Tetra Tech can stage a full-scale mobilization in Franklin County within hours of a disaster. Our team has never failed to respond to a client's needs, providing each community with a dedicated project team. In 2017, *Tetra Tech successfully deployed 6,000 field staff throughout the country* to respond to clients affected by Hurricane Irma in Florida, Hurricane Harvey in Texas, Hurricane Maria in Puerto Rico, and multiple wildfires in California. Our simultaneous response to several disasters is proof that we have the staff, resources, and expertise to respond to the County's post-disaster needs. Tetra Tech stands ready to work with the County as a trusted partner who will respond immediately and provide high-quality services throughout the engagement.
- Dedicated Project Management Team. To provide the County with the most experienced management team assigned to its disaster management mission, we have assembled a team of nationally recognized experts in the field of response and recovery. Leading Tetra Tech Disaster Recovery is Mr. Jonathan Burgiel, a 30+-year veteran of the industry who is one of the nation's leading experts in disaster debris monitoring and Federal Emergency Management Agency (FEMA) reimbursement. Mr. Burgiel has helped hundreds of

communities throughout Florida and the nation with preparing for and responding to hurricanes and other natural disasters. Additionally, Mr. Phil Ivey, our proposed project manager, is an industry expert in large-scale mobilizations, project staffing, and debris monitoring operations and has extensive experience in disaster debris project management support under the FEMA's Public Assistance (PA) Grant Program.

- Automated Debris Management System (ADMS) Technology. RecoveryTrac[™] allows our staff to monitor and manage a recovery effort electronically, increasing productivity while decreasing fraud, human error, and cost to the County. RecoveryTrac[™] will give the County real-time debris collection tracking that provides accurate and timely reporting to County stakeholders. *RecoveryTrac[™] is one of only three systems validated by the United States Army Corps of Engineers (USACE) and is the ADMS preferred by the USACE debris contractors.* The specifications set forth by the USACE are designed to support the largest and most devastating disasters. In fact, *Tetra Tech's USACE response to the California wildfires is the largest ADMS activation in U.S. history.*
- FEMA Reimbursement Experts. Tetra Tech maintains a staff of reimbursement experts who have recovered millions of dollars of eligible FEMA PA reimbursement costs incurred by our clients. A key member of our team is *Mr. Dick Hainje, former regional administrator of FEMA Region VII.* As regional administrator of Region VII, Mr. Hainje led Region VII through 60 presidentially declared disasters in Kansas, Iowa, Nebraska, and Missouri and assisted Region IV with the 2004 Florida hurricane FEMA response. Another vital member of the Tetra Tech team is *Mr. Donald Kunish, a Certified Emergency Manager with 19 years of experience.* As the former Deputy Bureau Chief for the Florida Division of Emergency Management, he was responsible for managing Florida's Hazard Mitigation Planning and Grant Programs, Statewide Emergency Management All-hazards Planning and Training and Exercise Programs.
- Experienced Staff with a Proven Track Record and Real-World Understanding of Emergency
 Preparedness and Response Organizations. The Tetra Tech team has been involved in nearly every major
 response and recovery effort in the United States, including response to the devastating effects of Hurricanes
 Harvey, Irma, and Maria. Our preparedness expertise comes from our real-world response experience.
 Because of our active involvement in response and recovery efforts, our emergency planners develop
 informed, realistic plans that can be effectively implemented during a response.

Tetra Tech would be honored to continue to serve as the County's debris monitoring services provider. We are fully prepared to provide the high-quality service the County expects. For questions regarding this response, please contact the representatives listed below. As an authorized representative of the firm, I am authorized and empowered to sign this proposal and bind the firm in contractual commitments.

Technical representative: Ms. Anne Cabrera

2301 Lucien Way, Suite 120, Maitland, FL 32751 954-559-4951 | 321-441-8501 (f) anne.cabrera@tetratech.com

Sincerely,

Tetra Tech, Inc.

Jonathan Burgiel Business Unit President - Tetra Tech Disaster Recovery

Contractual representative: Ms. Betty Kamara

2301 Lucien Way, Suite 120, Maitland, FL 32751 407-803-2551 | 321-441-8501 (f) betty.kamara@tetratech.com



Key Features

Years in Disaster Recovery

300+

Clients Assisted

Qualifications of the Firm

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 guickly 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 Franklin County's (County) request for proposal,

- as evidenced by our staff's extensive experience responding to many of the nation's most catastrophic disasters and our team's experience providing disaster recovery services in Florida over the past 14 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 TORNADOES of debris, as evidenced by our team's detailed scope of work and significant work history in the disaster response marketplace and within Florida.
- 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.

Office Locations

In the aftermath of a disaster, time is critical. Each crucial minute that slips by could result in higher costs and longer down times. Minimizing the impact of a disaster calls for an emergency management partner with the resources to mobilize a swift, efficient response in hours, not days.

The Tetra Tech team can utilize the Florida local offices shown in the map as necessary to immediately respond to the County's need for personnel and resources following a debris-generating event or other disaster. These local offices may be used for office space, on-site IT personnel, communication resources (e.g., a debris hotline call center if deemed necessary by the County), or staging of mobile trailers and equipment. Due to our diverse experience and multiple office locations within the state, our team has a thorough understanding of Florida's emergency response framework and state standards. With our primary Response and Recovery Division based at 2301 Lucien Way, Suite 120, Maitland, Florida, and recovery experts located throughout the state, Tetra Tech can stage a full-scale mobilization in the County within hours of a disaster. Our Tallahassee office will be the primary office location responsible for this project. This office is located at: 3175 W. Tharpe St. Tallahassee, FL 32303.

Tetra Tech also maintains a warehouse located in Central Florida with over 120 fully stocked bays of debris monitoring supplies capable of supporting over 50 simultaneous recovery operations for over 90 days. In addition to our warehouse, Tetra Tech owns a fleet of project-ready supply and satellite trailers that can be mobilized at a moment's notice. 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.



Exhibit B-1: Florida Office Locations

Knowledge and Expertise in 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 B-2 provides an abbreviated experience matrix for projects conducted since 2001. *Profiles and references from specific projects are featured in Tab D: References of our proposal. Tetra Tech can provide additional projects and information upon request.*

Exhibit B-2: Experience Matrix (2001–2018)

58 EVENTS 2001 - 2018

2017

WILDFIRES - 2 Clients HURRICANE MARIA - 1 Client HURRICANE IRMA - 67 Clients HURRICANE HARVEY - 38 Clients TX TORNADOES - 1 Client GA TORNADOES - 1 Client

2016

HURRICANE MATTHEW - 34 Clients SEVERE STORMS & FLOODING -2 Clients

WILDFIRES - 2 Clients FLOODING - 6 Clients

2015

WILDFIRES - 2 Clients SEVERE STORMS - 3 Clients FLOODING - 10 Clients

2014

FLOODING - 1 Client TORNADOES - 2 Clients ICE STORM - 7 Clients 2013 ICE STORM - 2 Clients

FLOODING - 1 Cli<mark>ent</mark> 2012

HURRICANE SANDY - 13 Clients HURRICANE ISAAC - 5 Clients TROPICAL STORM DEBBY - 3 Clients

2011

NOR'EASTER WINTER STORMS - 19 Clients TEXAS DROUGHT - 1 Client TEXAS WILDFIRES - 1 Client HURRICANE IRENE - 22 Clients TORNADOES - 4 Clients

2010

FLOODING - 2 Clients TORNADOES - 1 Client ICE STORMS - 1 Client

2009 ICE STORMS - 1 Client SNOW STORMS - 2 Clients 2008

HURRICANE IKE - 78 Clients

HURRICANE GUSTAV - 7 Clients TROPICAL STORM FAY - 3 Clients HURRICANE DOLLY - 30 Clients MIDWEST FLOODING - 2 Clients

2007

MIDWEST ICE STORM - 2 Clients GROUNDHOG DAY TORNADOES - 2 Clients MIDWEST SNOW STORMS - 3 Clients

2006

BUFFALO SNOW STORMS - 6 Clients 2005 HURRICANE WILMA - 17 Clients HURRICANE RITA - 3 Clients HURRICANE KATRINA - 11 Clients HURRICANE DENNIS - 5 Clients 2004

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HURRICANE JEANNE - 2 Clients HURRICANE IVAN - 3 Clients HURRICANE FRANCES - 2 Clients HURRICANE CHARLEY - 2 Clients 2002

HURRICANE LILI - 1 Client 2001

TROPICAL STORM GABRIELLE - 1 Client

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 548,895 TOTAL CUBIC YARDS OF DEBRIS 1,300,000 TOTAL CUBIC YARDS OF DEBRIS

- 21 HURRICANES
- 9 SNOW/ICE WINTER STORMS
- 4 TORNADOES
- 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, debris management sites (DMS) monitoring, contractor invoice reconciliation, and federal grant reimbursement support.



Summary of Projects Over 1 Million (M) Cubic Yards



Houston, TX Hurricane Ike, 08



Bolivar Peninsula, TX Hurricane Ike, '08



Houston, TX Hurricane Harvey, '17



Escambia County, FL Hurricane Dennis, '05

Photo Source | FEMA.gov



Escambia County & Pensacola, FL Hurricane Ivan, '04



Miami-Dade County, FL Hurricane Wilma, '05



Galveston, TX Hurricane Ike, '08



Jefferson County, TX Hurricane Rita, '05



Collier County, FL Hurricane Irma, '17



Harrison County, MS Hurricane Katrina, '05



Polk County, FL Hurricane Irma, '17



Springfield, MO Snowstorms, '07



Miami-Dade County, FL Hurricane Irma, '17



Harris County, TX Hurricane Ike, '08



Santa Rosa County, FL Hurricane Dennis, '05



Harris County, TX Hurricane Harvey, '17



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Gulfport, MS Hurricane Katrina, '05



Hilton Head Island, SC Hurricane Matthew, '16



Beaufort County, SC Hurricane Matthew, '16



Volusia County, FL Hurricane Matthew, '16



Florida Debris Monitoring Experience

Our team has assisted numerous communities in Florida with response and recovery efforts following Hurricanes Charley, Frances, Jeanne, Ivan, Dennis, Katrina, Wilma, and most recently Matthew and Irma. Exhibit B-4 summarizes our team's past debris monitoring experience in the State of Florida.

Exhibit B-4: Florida Debris Monitoring Experience



Tropical Storm Fay (2008) Total CY of Debris – 50,000 | 3 Clients | Representative Clients: St. Johns County | 30,000 CY Leon County | 20,000 CY

Tropical Storm Debby (2012)

Total CY of Debris – 7,253 | 3 Clients | Representative Clients: Clay County | 3,777 CY Pasco County | 2,583 CY Total CY of Debris – 18,773,000 | 59 Clients | Representative Clients: City of Cape Coral | 363,207 CY Collier County | 3,122,681 CY Highlands County | 891,782 CY City of Hollywood | 335,368 CY City of Miami | 540,305 CY Maimi-Dade County | 3,559,582 CY Monroe County | 1,075,134 CY Polk County | 2,237,547 CY Seminole County | 821,470 CY

Previous Five (5) Years' Experience

In compliance with Franklin County's request for proposals, Exhibit B-5 provides an abbreviated list of projects completed in the past five (5) years, with associated reference and contact information. *Profiles and references from specific projects are featured in Tab D: References. Tetra Tech can provide additional projects and information upon request.*

EXHIBIT D J. EXPERICE MULTIX (2015 2010)
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Location (Client Name)	Contact Name	Phone Number	Value	Type of Services/Cubic Yards
Hurricane Irma – 2017				
Miami-Dade County, FL	Stacey McDuffie- Brewster	(305) 375-1354	\$13,134,576 (Ongoing)	Disaster Debris Monitoring 1,891,207 CY
Polk County, FL	Jay M. Jarvis, P.E.	(863) 581-0163	\$6,190,877	Disaster Debris Monitoring 1,316,993 CY
Collier County, FL	Dan Rodriguez	(239)252-2504	\$5,130,000	Disaster Debris Monitoring 801,438 CY
City of Miami, FL	Mario Nunez	(786) 479-4097	\$3,911,307	Disaster Debris Monitoring 486,515 CY
Seminole County, FL	Jeff Waters	(407) 665-2253	\$2,250,000	Disaster Debris Monitoring 404,223 CY
Brevard County, FL	Euripides Rodriguez	(321) 633-2042	\$1,300,000	Disaster Debris Program Management 653,953 CY
Charlotte County, FL	John Elias	(941) 575-646	\$412,000	Disaster Debris Program Management 6,208 tons of debris
Hurricane Harvey – 2017				
Dickinson, City of, TX	Connie Nicholson	(281) 337-2489 ext. 224	\$678,086 (Ongoing)	Disaster Debris Monitoring 180,683 CY
Harris County, TX	Danielle Cioce	(551) 427-6581	3,700,000 (Ongoing)	Disaster Debris Program Management 1,100,000 CY
City of Houston, TX	Joanne Song Yu	(832) 393-0484	\$7,964,528 (Ongoing)	Disaster Debris Monitoring 825,6811 CY
Fort Bend County, TX	Jeff Braun	(281) 342-6185	\$830,000 (Ongoing)	Disaster Debris Monitoring 382,3971 CY
City of Corpus Christi, TX	Gabriel Maldonado	(361) 826-3165	\$1,037,930	Disaster Debris Monitoring 352,4601 CY
City of Katy, TX	Jason Rivera	(281) 391-4796	127,583 (Ongoing)	Disaster Debris Monitoring 24,000 CY

FRANKLIN COUNTY, FLORIDA

TAB B: EXPERIENCE

Location (Client Name)	Contact Name	Phone Number	Value	Type of Services/Cubic Yards
Montgomery County, TX	Darren Hess	(936) 523-3910	\$902,000 (Ongoing)	Disaster Debris Monitoring 130,000 CY
Georgia Tornadoes – 20 [°]	17			
Albany County, GA	Phil Roberson	(229) 357-0667	\$2,008,025	Disaster Debris Monitoring 380,000 CY
Dougherty County, GA	Michael McCoy	(229) 431-2193	\$2,008,025	Disaster Debris Monitoring 540,000 CY
Hurricane Matthew – 20	16			
Brevard County, FL	Euripides Rodriguez	(321) 633-2042	\$1,267,272	Disaster Debris Monitoring 820,779 CY
St. Johns County, FL	Greg Caldwell	(904) 669-5221	\$1,303,000	Disaster Debris Monitoring /C&D Monitoring 712,705 CY
Volusia County, FL	John Angiulli	(386) 736-5965 x. 2712	\$1,969,756	Disaster Debris Monitoring /PA 1,058,334 CY
Beaufort County, SC	Pamela Cobb	(843) 255-2721	\$2,486,000	Disaster Response Monitoring 1,609,243 CY
Hilton Head Island, SC	Jeffrey S. Buckalew	(843) 341-4772	\$2,845,353	Disaster Debris Monitoring 2,187,080 CY
City of Port Orange	Alexandra Torrent	(386) 506-5573	\$872,394	Disaster Debris Monitoring/ Comprehensive Program Management 428,244 CY
City of New Smyrna Beach, FL	Faith G. Miller	(386) 424-2202	\$364,730.39	Disaster Debris Monitoring 203,981CY
City of Holly Hill, FL	Mark Juliano	(386) 248-9463	\$254,479.75	Disaster Debris Monitoring 137,094 CY
City of South Daytona, FL	Les Gillis, P.E.	(386) 322-3080	\$157,950	Disaster Debris Monitoring 93,120 CY
Liberty County, GA	Mike Hodges	(912) 368-2201	\$631,754.21	Disaster Debris Monitoring 182,468 CY
Severe Storms and Floor	ding – 2016			
Ascension Parish, LA	Jerome Fournier	(225) 450-1371	\$1,000,000	Disaster Debris Monitoring/ Financial Recovery 390,000 CY
Iberville Parish, LA	Randall Dunn	(225) 776-1109	\$1,903,106	Disaster Debris Monitoring 46,264 CY
Severe Storms and Floor	ding – 2016			
Montgomery County, TX	Miranda Hahs	(936) 523-3903	\$93,138	Disaster Debris Monitoring 53,208 CY
Wildfires – 2015				
Lake County, CA	Lars Ewing	(707) 263-2341	\$1,000,000	Disaster Debris Monitoring /PPDR

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FRANKLIN COUNTY, FLORIDA

TAB B: EXPERIENCE

Location (Client Name)	Contact Name	Phone Number	Value	Type of Services/Cubic Yards
				38,000 CY
Severe Storms – 2015				
Friendswood, TX	Brian Mansfield	(281) 996-3335	\$19,330	Disaster Debris Monitoring
Flooding – 2015				
City of Houston, TX	Joanne Song Yu	(832) 393-0484	>\$33 Million	Disaster Debris Monitoring /C&D 8,800 CY
Hays County, TX	Mark Kennedy	(512) 393-2219	\$475,000	Disaster Debris Monitoring/PA 132,100 CY
Caldwell County, TX	Jordan Powell	(512) 934-4549	\$50,000	Disaster Debris Monitoring /PA 58,678 CY
Flooding – 2014				
Escambia County, FL	Jim Howes	(850) 937-2160	\$53,726	Disaster Debris Monitoring /PPDR Monitoring 10,000 CY
Tornado – 2014				
Blount County, AL	Don Roybal	(205) 625-4121	\$259,183	Debris/Leaner/Hanger Removal/C&D Monitoring 75,595 CY
Limestone County, AL	Richard Sanders	(256) 233-6681	\$232,645	Debris/Leaner/Hanger Removal/C&D Monitoring 104,256 CY
Flooding – 2013				
Boulder County, CO	Brian Graham	(720) 564-2667	\$4,590,765	Demolition Monitoring, PPDR Monitoring

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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 disasterspecific 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

WHAT DO OUR CLIENTS SAY?

"Your team assisted us with FEMA PA Grant Program application and administration, FHWA ER technical assistance, FEMA HMGP 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 your team 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, Colorado

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 handloaded 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 B-6 provides a summary of our experience providing FEMA PA services to local and state governments.

Exhibit B-6:	Recent	Grant	Funding	Experience
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Year	Client	Event	Program	Value (\$)	Preliminary Damage Request	Develop Request for Public Assistance	Applicant Briefing	Applicant Kickoff Meeting	Site Visits/Inspections	Project Scoping	Project Cost Estimation & Documentation	PW/Application Development	Alternate/Improved/Pilot Program Projects	Project Cost Reconciliation	Interim Inspections	Funding Disbursement	Grant Closeout
2017	City of Houston, TX	DR 4332	PA	2,400,000,000													
2017	City of South Daytona, FL	DR 4337	PA	6,000,000				•		•	•	•	•				
2017	Fort Bend County, TX	DR 4332	PA	50,000,000				•									
2017	Albany, Georgia	DR 4294 DR 4297	PA	14,000,000		•	•	•	•		•	•	•	•			
2017	Dougherty, Georgia	DR 4297	PA	12,500,000		•	•	•		•	•	•	•				
2016	South Daytona, FL	DR 4283	PA	1,600,000													
2016	Volusia County, FL	DR 4283	PA	28,000,000													
2016	Port Orange, FL	DR 4283	PA	16,000,000													
2016	Beaufort County, SC	DR 4284	PA	56,000,000								•					
2015	Richland County, SC	DR 4241	PA HMGP CDBG- DR	4,000,000 8,700,000 23,500,000			•										
2015	City of Sumter, SC	DR 4241	Pa HMGP	13,000,000	•	•	•	•	•	•	•	•					
2015	Lexington County, SC	DR 4241	PA HMGP	1,600,000						•	•	•					
2015	Dorchester County, SC	DR 4241	PA	3,500,000													
2015	Montgomery County, TX	DR 4269 DR 4272	HMGP	15,000,000						•	•	•					
2015	Austin County, TX	DR 4269 DR 4272	PA	4,000,000		•	•	•		•	•	•	•	•			
2015	Waller County, TX	DR 4269 DR 4272	PA	4,000,000		•	•	•	•		•	•	•	•			
2015	Ascension Parish, LA	DR 4277	PA	20,000,000													
2015	Walton County, FL	N/A	FMA	522,000													
2015	Fayette County, GA	DR 4259	PA	3,800,000													
2014	City of Napa, CA	DR 4193	PA	2,000,000													
2014 2015	City of Houston, TX	DR 4223 DR 4269 DR 4272	PA	60,000,000			•										



Year	Client	Event	Program	Value (\$)	Preliminary Damage Request	Develop Request for Public Assistance	Applicant Briefing	Applicant Kickoff Meeting	Site Visits/Inspections	Project Scoping	Project Cost Estimation & Documentation	PW/Application Development	Alternate/Improved/Pilot Program Projects	Project Cost Reconciliation	Interim Inspections	Funding Disbursement	Grant Closeout
2013	Boulder County, CO	DR 4193	PA,	2,000,000			•										
2012	State of New Jersey Department of Environmental Protection	DR 4086	PA	30,500,000		•	•	•	•				•	•			
2011	Virginia DOT	DR 4023	PA	3,000,000													
2011	State of Vermont	DR 4022	pa, Hmgp	23,000,000					•			•		•			
2011	State of Connecticut	DR 4023	PA	500,000													
2010	Hidalgo County, TX	DR 1931	PA	318,000													
2009	City of Daytona Beach, FL	DR 1840	HMGP	1,200,000		•			•	•	•	•	•	•	•		
2009	Volusia County, FL	DR 1840	PA	890,000													
2009	City of Austell, GA	DR 1858	PA	7,900,000													
2009	Clark Energy Co-op, KY	DR 1818	HMGP	500,000													
2009	City of Newport News, VA	DR 1862	PA	280,000	•	•	•	-	•	•	•	•		•			
2009	City of Virginia Beach, VA	DR 1862	PA/SRL	2,000,000					•		•	•					
2008	City of Cocoa, FL	DR 1785	PA	200,000													
2008	City of Cocoa Beach, FL	DR 1785	PA	15,000													
2008	Leon County/ City of Tallahassee, FL	DR 1785	PA	580,000							•	•		•			
2008	St. Johns County, FL	DR 1785	PA	870,000													
2008	Plaquemines Parish, LA	DR 1786	PA	10,000													
2008	Ashburnham Municipal Light Plant, MA	DR 1813	PA	645,000			•		•		•	•		•			
2008	Paxton Light Dept., MA	DR 1813	PA	150,000													
2008	Princeton Municipal Light Department, MA	DR 1813	PA	9,300,000					•					•			
2008	Sterling Municipal Light Dept.	DR 1813	PA	3,900,000								•					
2008	City of Alvin, TX	DR 1791	PA	2,100,000													
2008	City of Angleton, TX	DR 1791	PA	6,000,000													
2008	Cameron County, TX	DR 1780	PA	27,000,000													
2008	Fort Bend County, TX	DR 1791	PA	15,300,000													



B-12

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

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

- Oversight of DMS
- Final debris disposal at a landfill or other end use
- Conflict and damage resolution
- Truck certification
- Right-of-entry (ROE) administration

- 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 B-7 is a representative list of our experience in assisting clients with PPDR activities and demolition program management.



		ement	ninistration	onmental Review			erty Debris Tracking	jram Management	Monitoring	osal Monitoring	Out	ant
Client	Disaster/Year	Public Advertise	Application Adr	Historical/Envir	Property Survey	Scheduling	Individual Prope	Demolition Prog	Debris Removal	Reduction/Disp	Property Close	Data Manageme
CalRecycle / CALOES Ventura County	Wildfire (2018)	•	•	•	•	•	•	•	•	•	•	•
USACE – Napa County, CA	Wildfire (2017)											
USACE – Mendocino County, CA	Wildfire (2017)		•	•	•	•	•	•	•	•	•	-
USACE – Lake County, CA	Wildfire (2017)											
USACE – Sonoma County, CA	Wildfire (2017)		•				•	•	•			•
Dougherty County, GA	Tornado (2017)									•		
Lake County, CA	Wildfires (2015)											•
Hays County, TX	Flooding (2014)			•						•		
Boulder County, CO	Flooding (2013)		•	•		•		•	•	•	•	•
Middletown, Township of, NJ	Hurricane Sandy (2012)											
St. John the Baptist Parish, LA	Hurricane Isaac (2012)											
Bastrop County, TX	Wildfires (2011)											
Comanche Nation, OK	Ice Storm (2009)								•			
Cedar Rapids, City of, IA	Flooding (2008)											
University of Iowa	Flooding (2008)											•
Galveston, City of, TX	Hurricane Ike (2008)											
Terrebonne Parish, LA	Hurricanes Ike (2008)			•						•		•
Iberville Parish, LA	Hurricane Gustav (2008)											
New Orleans, City of, LA	Hurricane Katrina (2005)		•	•		•	•	•	•	•		
Waveland, City of, MS	Hurricane Katrina (2005)											
Naples, City of, FL	Hurricane Wilma (2005)											

Exhibit B-7: PPDR and Demolition Program Management

Beach Remediation

Critical to the recovery of any coastal community following a disaster is the remediation of its beaches. The County is no exception to this. Following Hurricane Katrina and the Deep Water Horizon oil spill, millions of federal grant dollars were made available to the Louisiana and Mississippi Gulf Coast for post-event restoration projects. Tetra Tech understands how important those funds are to an economy that is recovering from disasters. A loss in tourism and visitors to the County's beaches could reset the local economy to immediate post-hurricane conditions. Tetra



Tech is prepared to assist in evaluating damages, working with FEMA and Florida Department of Environmental Protection (FDEP) to determine eligibility, and overseeing recovery efforts on the County's beaches. If tasked, Tetra Tech will employ proven displaced sand removal and beach remediation protocols to create a program in an effort to reopen the beaches as soon as possible and minimize the impact that a beach closure could have on the County's economy.

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 FDEP, 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.*





A cleanup crew clears an inland

waterway of debris.



TETRA TECH

Exhibit B-8 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.

Exhibit B-8: Previous Leaner/Hanger/Stump Removal Programs

Client	Event	Total Leaners/Hangers/ Stumps Removed
Miami-Dade County Parks (Florida)	2017 Hurricane Irma	70,908
City of Miami, Florida	2017 Hurricane Irma	29,366
Polk County, Florida	2017 Hurricane Irma	27,267
Seminole County, Florida	2017 Hurricane Irma	25,348
Beaufort County, South Carolina	2016 Hurricane Matthew	67,581
Town of Hilton Head, South Carolina	2016 Hurricane Matthew	48,589
Horry County, South Carolina	2016 Hurricane Matthew	33,661
Flagler County, Florida	2016 Hurricane Matthew	15,151
City of Port Orange, Florida	2016 Hurricane Matthew	6,098
City of Myrtle Beach, South Carolina	2016 Hurricane Matthew	4,076
Lake County, California	2015 Valley Wildfire	7,544
Calaveras County, California	2015 Wildfire	8,158
City of Augusta, Georgia	2014 Winter Storm Pax	26,800
City of Rapid City, South Dakota	2013 Ice Storm	8,000
City of Sioux Falls, South Dakota	2013 Ice Storm	26,700
State of Connecticut	2011 Winter Storm Alfred	57,200
Henrico County, Virginia	2011 Hurricane Irene	15,500
Texas Department of Transportation	2011 Texas Drought and Wildfires	5,800
City of Raleigh, North Carolina	2011 Tornado	7,500
Arkansas Game and Fish Commission	2009 Ice Storm	48,900
City of Houston, Texas	2008 Hurricane Ike	212,500
Terrebonne Parish, Louisiana	2008 Hurricane Gustav	14,500
City of Norman, Oklahoma	2007 Midwest Ice Storm	26,800
Greene County, Missouri	2007 Midwest Snow Storm	53,900
Genesee County, New York	2006 Ice Storm	9,100
Town of Amherst, New York	2006 Ice Storm	32,700
City of Fort Lauderdale, Florida	2005 Hurricane Wilma	20,400
Santa Rosa County, Florida	2005 Hurricane Dennis	13,700
Escambia County, Florida	2004 Hurricane Ivan	15,100

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,

FRANKLIN COUNTY, FLORIDA TAB B: EXPERIENCE

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 DMS 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.*

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.



TETRA TECH



FEMA Appeal Assistance and Support

Our staff has an outstanding track record of getting our clients reimbursed, with more than 200 major disaster recovery mobilizations over the past 10 years. Given the nature and scrutiny of FEMA reimbursement, it is not unusual for a local government to have one or more project worksheets questioned by FEMA/Office of Inspector General (OIG) during the audit process. We routinely work with our clients in these matters—oftentimes for years following an event—to support and defend their reimbursement.

Furthermore, due to our staff's in-depth knowledge of FEMA reimbursement policies, we are often hired by applicants to assist them during FEMA/OIG audits and support them during FEMA appeals even when we have had no involvement with the applicant during the recovery period. Our team of recovery experts is currently working with the Port of Galveston, Texas, to close out Hurricane Ike-related projects. To date, we have been able to identify and capture over \$80 million in previously unidentified or deobligated funding. The following are a few examples of areas in which our staff has successfully supported the appeals effort of our clients with FEMA:

- South Broward Drainage District. Following Hurricane Wilma, our team prepared an appeal in support of \$4 million in reimbursement associated with lake erosion repairs made by the South Broward Drainage District. With our team's support, the South Broward Drainage District was fully reimbursed.
- Lake County, Florida. Our team supported the successful appeal of over \$400,000 of previously deobligated funds in response to the 2004 Hurricanes Charley, Frances, and Jeanne. These funds were associated with debris collected on private roads and gated communities. Our team did a comprehensive geographic information system (GIS) analysis of all of the debris collected on the roads in question and was able to appeal the decision and obtain reimbursement from FEMA for these County-incurred costs.
- Port of Galveston, Texas. The Port of Galveston experienced extensive damage due to storm-induced erosion caused by Hurricane Ike surge that reached heights upward of 20 feet. The pier was not designed to withstand the water weight and rapid draw down of the water. As a result, the concrete sheet pile was damaged and caused the fill underneath the warehouse slab to wash out, thus compromising the support of the warehouse floor. The floor collapsed near the most significant voids underneath the base. FEMA deemed the damage ineligible due to subtle erosion that happened over time. The Port of Galveston, with the assistance of our team of experts, submitted an appeal for eligibility and won the appeal resulting in an approval of a \$1.5 million for Pier 15. More importantly, the appeal approval has established precedence for the Port of Galveston's remaining Ike-damaged piers, enabling the Port of Galveston to apply for an additional \$80 million of funding due to damage caused by Hurricane Ike previously deemed ineligible.

Ability to Secure Subcontractors

Tetra Tech does not discriminate on the basis of social and economic disadvantage, race, color, sex, gender, disability, or national origin. In addition, Tetra Tech conscientiously looks for opportunities to work with small, women-owned, minority-owned, and disadvantaged business enterprises where specific and individual capabilities complement our own for the successful completion of a project. We have established working relationships with a number of subcontractors located in Florida. We maintain a comprehensive file of the qualifications and experience of these firms to aid us in selecting appropriate subcontractors for specific project tasks.

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



Overview of Staff Experience

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 FEMA, FHWA, U.S. Department of Housing and Urban Development (HUD), NRCS, and other federal agency reimbursement programs.

Our staff members have successfully managed the removal of and reimbursement for over 103 million 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 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.

The established working relationship shared by the County and Tetra Tech provides our team with an in-depth understanding of the services the County will require following a disaster event. **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
- Intermediate Workzone Traffic Control (FDOT)



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 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.
- Mr. Ralph Natale has overseen response to some of the country's largest debris-generating disasters. He is an expert in FEMA PA Grant Program reimbursement policies and has administered nearly 230 projects in his 13-year career. This includes managing and documenting the removal of over 46 million CYs of debris and over 1.3 million hazardous trees and the program management of over 9,600 demolitions totaling over \$2.5 billion dollars of reimbursed invoices. He has served as a debris specialist and grant consultant for state and local governments, including for the State of Connecticut Emergency Operations Debris Task Force following Hurricane Irene and Winter Storm Alfred and the City of New Orleans, Louisiana, following Hurricane Isaac. 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.
- 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. Jeff Dickerson, GIS Specialist has more than 20 years of experience in program management and information technology and is the principal system architect of our 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' DMS locations. 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.*

Name	Summary of Qualifications
Phil Ivey Project Manager	 12+ years of experience in disaster debris management, ROW debris removal, disposal operations, private property programs, hazardous tree removal, and FEMA PA Category A documentation and eligibility requirements. Has worked in communities in the Gulf Coast region providing disaster recovery operations to ensure compliance with all FEMA and other reimbursement agency regulations. Served on the USACE mission as a QA Roving Monitor, providing quality assurance by inspecting debris loading activities, monitoring site safety, and verifying ineligible debris was not collected.
Owen Chen Data Manager	 Experienced quality control and data manager with over 4 years of experience. Areas of expertise include geographic information systems, documentation management, QA/QC, database management, and reporting. Supports QA/QC checks of ROW load collection and all hazardous tree and hanger removal. He manages the accuracy and organization for all project documents.



	 Has also provided financial recovery support in assisting with completion of FEMA PA PWs.
Donald Kunish, CEM Cost Recovery Specialist	 Certified Emergency Manager with 19 years of experience responding to over 45 disasters. Provides multiple communities with support to utilize U.S. Government grants to respond, recover and mitigate to natural and manmade disasters across the country. Programmatic and implementation support for the FEMA PA Grant Program, Hazard Mitigation Grant Program (HMGP), and the Community Development Block Grant Program. Programs include management of applications and awarded funding to elevate and buy out residences, build back damaged infrastructure to be more disaster resilient, and work for reimbursement of local governments for response and recovery efforts.
Chris Burns Environmental Specialist	 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.
Paris Atkinson Billing/Invoice Analyst	 Over 12 years of 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.

Exhibit B-9 shows our proposed project team organizational structure. Résumés have been included at the end of this section.

Exhibit B-9: Organizational Structure



TETRA TECH

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Resumes







EXPERIENCE SUMMARY

Mr. Phil Ivey has overseen recovery operations in response to some the of country's largest debris-generating disasters, including Hurricanes Sandy, Irene, Ike, Katrina, Wilma, Dennis, and Ivan; the 2013 Boulder County, Colorado floods; the 2006 ice storms in Buffalo, New York; and the Groundhog Day tornadoes that swept through Central Florida in February 2007. He has worked in communities stretching from the Gulf Coast region to upstate New York providing disaster recovery operations to ensure compliance with all Federal Emergency Management Agency (FEMA) and other reimbursement agency regulations. He provides FEMA-related guidance during times of activation based on his extensive experience managing disaster recovery efforts. This includes debris collection and disposal and developing project worksheets to accurately record the data to ensure proper reimbursement, payment reconciliation, and guidance on adhering to local, state, and federal regulations and policies governing debris collection and disposal.

FEATURED RELEVANT EXPERIENCE

Project Manager, (February 2017 – Ongoing)

City of Houston, Texas | Hurricane Harvey

Mr. Ivey currently serves as project manager for the parks department overseeing the removal of sand silt from the floods, due to Hurricane Harvey.

Regional Program Manager (September 2017 – January 2018)

Cities of West Palm Beach, Boca Raton and Jupiter, Florida | Hurricane Irma Debris Removal Program Management

Following Hurricane Irma in the fall of 2017, Mr. Ivey served as regional program manager for the Cities of West Palm Beach, Boca Raton and Jupiter Florida. Mr. Ivey oversaw the deployment and training of over 200 monitors in the first 10 days of operations. Mr. Ivey closely coordinated the use of shared disposal facilities with City officials, County officials and multiple debris hauling contractors. In additional, Mr. Ivey worked closely with officials in all 3 Cities to apply for and subsequently receive approval for Private Property Debris Removal Programs.

Project Manager, (September 2017–February 2018)

Cape Coral, Florida | Hurricane Irma,

Hurricane Irma's strong winds downed trees and left debris throughout the City and caused major damage to the City's canal system and seawall. Mr. Ivey served as the project manager for the waterways disaster debris monitoring operations, where he oversaw the removal of approximately 164,000 cubic yards of debris from the City's canals.

Project Manager, (January 2017 – July 2017)

City of Albany, Georgia | Severe Storm, Tornadoes, and Straight-Line Winds

Phil Ivey Project Manager

YEARS OF EXPERIENCE

12 Years

AREA OF EXPERTISE

- Disaster Debris Management
- Right-of-Way Debris Removal
- Disposal Operations
- Private Property Programs
- Hazardous Tree Removal
- FEMA PA Category A documentation and eligibility requirements

DISASTERS

- 4337 FL Hurricane Irma
- 4332 TX Hurricane Harvey
- 4297 Georgia Tornadoes
- 4283 FL Hurricane Matthew
- 4277 Louisiana Floods
- 4245 Texas severe storms
- 4155 SD Winter Storm
- 4145 Colorado Floods
- 4086 Hurricane Sandy
- 4084 Hurricane Isaac
- 4024 Hurricane Irene
- 1791 Hurricane Ike
- 1780 Hurricane Dolly
- 1735 OK Winter Storms
- 1679 FL Tornadoes
- 1609 Hurricane Wilma
- 1602 Hurricane Katrina
- 1595 Hurricane Dennis
- 1551 Hurricane Ivan

TRAINING/CERTIFICATIONS

- OSHA 510: 40-Hour Construction Safety
- OSHA 40-Hour HAZWOPER
- OSHA 7600 Disaster Site
 Worker
- OSHA 10-Hour Construction Safety
- NIMS IS-00700

Mr. Ivey served as the project manager for the City of Albany following severe storms, tornadoes, and straight-line winds. His responsibilities included project setup, health and safety, and training of field management staff.

Project Manager, (August 2016 – December 2016)

Ascension Parish, LA | Severe Storms and Flooding

Mr. Ivey served as the project manager for the Ascension Parish following severe storms and flooding. His responsibilities included project setup, health and safety, and training of field management staff.

Project Manager (October 2016–May 2017)

Volusia County, FL | Hurricane Program Management

Mr. Ivey was the Senior Project manager and oversaw all debris removal monitoring field operations following Hurricane Mathew in 2016. Having previously served as project manager in Volusia County following the Groundhog Day tornadoes in 2007, Mr. Ivey's working knowledge of the County eliminated the need for a learning curve and allowed Mr. Ivey to expeditiously implement Tetra Tech's monitoring protocols. Mr. Ivey's staff (over 210 Monitors at peak) managed the successful monitoring of over 2,000,000cyds of debris in 7 municipalities using 9 shared disposal locations. Mr. Ivey also worked closely with County and Federal officials to design and implement a Private Property Debris Removal (PPDR) program based on the unique needs of Volusia County.

Deputy Project Manager (March 2014–July 2014)

Boulder County, Colorado | Flooding Disaster Debris Program Management

Mr. Ivey served as deputy project manager for Boulder County, Colorado, following the September 2013 flooding. As deputy project manager, he oversaw the recovery of nearly 10,000 tons of debris. Also unique to this project was the fact that Tetra Tech was contracted by the County to take over monitoring operations from another firm mid-project. Mr. Ivey also assisted in identifying eligible debris in the streams for reimbursement and administrating the program management for the County's demolition project, including filling out all paperwork.

Operations Manager (February 2013–January 2014)

New Jersey Department of Environmental Protection | Hurricane Sandy Waterways Debris Removal Program Management

Mr. Ivey served as operations manager for the New Jersey Department of Environmental Protection (NJDEP) following Hurricane Sandy, where he managed the NJDEP's vessel recovery operations throughout the state as well as water debris removal for the northern part of the state.

Project Manager (October 2013–December 2013)

City of Rapid City, South Dakota | Winter Storm Atlas Debris Program Management

Mr. Ivey served as project manager during our team's response to the City of Rapid City, South Dakota, following the severe winter storm that crippled the entire western half of the state for nearly two weeks. Mr. Ivey managed the monitoring of the removal of over 100,000 cubic yards of debris and the mitigation of hazards caused by 8,020 hanging limbs or leaning trees.

Operations Manager (November 2007-November 2013)

City of New Orleans, Louisiana | Hurricane Katrina Residential Demolition Program

Mr. Ivey's responsibilities included documenting legal authority to demolish properties, which included surveying each structure, securing the legal ownership of nearly 2,000 properties, advising the legal owners of the impending demolition, and documenting the entire process from survey to demolition.

The unique demolition project required the identification and tracking of items with archeological significance to the surrounding area. Mr. Ivey's eye for detail for all aspects of the fast-paced demolition project ensured maximum reimbursement from FEMA for the City of New Orleans.

Project Manager (August 2012–November 2012)

St. John the Baptist Parish, Louisiana | Hurricane Isaac Disaster Debris Program Management

Following Hurricane Isaac, Mr. Ivey served as the project manager and implemented our automated debris management system (ADMS) for the debris removal project. Mr. Ivey was responsible for oversight of household hazardous waste and supervised the private property debris removal program. This project resulted in the monitoring and removal of approximately 225,000 cubic yards of debris for the Parish.

Project Manager (August 2011–December 2011)

Henrico County, Virginia | Hurricane Irene Disaster Debris Program Management

Following Hurricane Irene, Mr. Ivey was responsible for supervising the debris and tower monitors, verifying truck certification, creating schedules for supervisors, and meeting with clients daily for updates on the progress of the debris management program.

Quality Assurance (June 2011–July 2011)

City of Tuscaloosa, Alabama | United States Army Corps of Engineers (USACE) Debris Removal Mission In 2011, Alabama was impacted by an unprecedented amount of tornadoes during the incident period of April 15, 2011 to May 31, 2011. The historic number of tornadoes and resulting damage resulted in FEMA tasking the USACE with debris removal for 61 local governments within Alabama. Mr. Ivey served on the USACE mission as a Quality Assurance Roving Monitor assigned to the City of Tuscaloosa. His responsibilities included providing quality assurance by inspecting debris loading activities, monitoring site safety, and verifying ineligible debris was not collected.

Deputy Project Manager (September 2008–September 2011)

City of Houston, Texas | Hurricane Ike Disaster Debris Program Management

Mr. Ivey was instrumental in helping the firm to quickly establish debris removal protocols, assign and direct debris haulers to zones, and keep city residents informed of the progress of the debris effort. The debris removal operation was a monumental effort involving approximately 1,000 personnel and the daily removal of 250,000 cubic yards of debris from the city.

Project Manager (April 2011–June 2011)

City of Raleigh, North Carolina | Tornado Disaster Program Management

Following the tornadoes in 2011, Mr. Ivey trained City of Raleigh staff members on debris removal, leaners and hangers, and truck certification. Mr. Ivey also tracked the work completed for FEMA eligibility and updated the client daily on training progress.

Project Manager (December 2007–May 2008, May 2010–July 2010)

City of Norman, Oklahoma | Winter Storm Disaster Debris Program Management and Tornado Disaster Debris Program Management

Following severe winter storms in December 2007, Mr. Ivey assisted with debris contractor procurement, overall program management, and overseeing the debris removal monitoring for the collection and disposal of approximately 750,000 cubic yards of debris. He was responsible for training nearly 120 monitors and supervisory personnel as well as holding daily safety and operational meetings with them. Mr. Ivey was able to add FEMA reimbursable projects for the city, which included the removal of hazardous trees, branches, and stumps from the right-of-way and the removal of hazardous trees, stumps, and debris from over 40 city parks.

Following the tornadoes in 2010, Mr. Ivey provided training on debris removal, leaners and hangers, and tower and truck certification. He also monitored hazardous waste removal and right-of-way debris removal from parks in the City of Norman.

Project Manager (March 2010–May 2010)

Comanche Nation, Oklahoma | Winter Storm Disaster Debris Program Management

Mr. Ivey trained Comanche Nation tribal members on debris removal, leaners and hangers, and tower and truck certification. Mr. Ivey also reported daily to the chief of the tribe on the progress of the project.

Project Manager (November 2009–December 2009)

Arkansas Game and Fish Commission | Ice Storm Disaster Debris Program Management

Mr. Ivey was responsible for the removal of hazardous leaners and hangers over two mountains (totaling 63 miles). Mr. Ivey mapped every tree over this 63-mile span and informed the Arkansas Game and Fish Commission about future replanting.

Project Manager (June–October 2009)

Towns of Spencer and Sterling, Massachusetts | Winter Storm Disaster Debris Program Management Following the snowstorms in 2009, Mr. Ivey monitored right-of-way debris removal and trained staff members on debris removal, leaners and hangers, and tower and truck certification.

Project Manager (July–November 2008)

Hidalgo County, Texas | Hurricane Dolly Debris and Grant Management Services

Mr. Ivey oversaw all project-related activities for Hidalgo County and its 16 cities and maintained a high level of communication between the various county, city, and FEMA officials. Through those relationships and diligent oversight, Mr. Ivey was able to add the removal of hazardous trees, branches, and stumps from many of the Hidalgo County parks. Mr. Ivey was also able to help get most of the vegetative debris recycled rather than burned or taken to a local landfill.

Data Manager and Collection and Disposal Supervisor (September 2005–September 2008)

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

Following Hurricane Ivan, Mr. Ivey oversaw disaster recovery efforts for the City of Pensacola, including the proper collection and disposal of over 1.3 million cubic yards of debris. He was responsible for the database management of load tickets, approval of debris contractor invoices, and assisting the City of Pensacola with preparing project worksheets for FEMA reimbursement.

Project Manager (June 2008–September 2008)

City of Cedar Rapids, Iowa | Sinclair Property Flood Demolition Monitoring Management Following the flooding in 2008, Mr. Ivey was responsible for monitoring the daily operations of removing hazardous material from the Sinclair Plant.

Collection and Disposal Operations Manager (September 2004–October 2007)

Escambia County, Florida | Hurricane Ivan Comprehensive Disaster Program Management Mr. Ivey was responsible for truck certification, hanger/leaner identification, tracking and monitoring debris removal, data entry, contractor invoice reconciliation, and appeals support. He was also responsible for training field debris monitoring crews.

Project Manager (February 2007–April 2007)

Volusia County, Florida | Groundhog Day Tornado Disaster Recovery and Storm Debris Removal Mr. Ivey was responsible for overseeing the teams monitoring the collection and disposal of approximately 135,000 cubic yards of debris. Mr. Ivey also coordinated the data management process to ensure maximum reimbursement from FEMA.

Operations Manager (October 2006–January 2007)

Genesee County, New York | Winter Storm Disaster Debris Program Management

Mr. Ivey provided logistics support, truck certifications, training for collection and disposal monitoring crews, and data entry and management services. He worked closely with Genesee County to identify critical debris removal areas and mark hazardous trees and hanging limbs for removal.

Project Manager (October 2006–January 2007)

Town of North Tonawanda, New York | Winter Storm Disaster Debris Program Management

Mr. Ivey was a member of the first response team and was deployed to the western portion of upstate New York following a devastating early season snowstorm that buried the Town of North Tonawanda under nearly two feet of snow. Mr. Ivey was responsible for truck certification, collection and disposal monitoring, and preparation of project worksheets to document eligible debris estimates for approximately 80,000 cubic yards of debris. He also provided fleet management services to ensure operations ran efficiently and effectively.

Project Manager (March 2006–May 2006)

Collier County, Florida | Hurricane Wilma Disaster Debris Program Management

Mr. Ivey and other key members of the project team provided Collier County with daily progress reports, including maps showing beginning global positioning system (GPS) coordinates with pre-photos, daily progress, ending GPS coordinates, and post-event photos. The daily reports included documentation supporting daily debris removal quantities and documentation of the proper disposal of that debris. These reports were discussed at a weekly meeting with representatives from the Natural Resources Conservation Service (NRCS) and Collier County. Mr. Ivey also instructed team members on how to accurately measure work completed in order to ensure maximum reimbursement.



Donald Kunish, CEM Cost Recovery Specialist

EXPERIENCE SUMMARY

Mr. Kunish is a Certified Emergency Manager with 19 years of experience and has worked on 47 disasters throughout his career. Currently he provides multiple communities with support to utilize U.S. Government grants to respond, recover and mitigate to natural and manmade disasters across the country. These programs include the management of applications and awarded funding to elevate and buy out residences, build back damaged infrastructure to be more disaster resilient, and work for reimbursement of local governments for response and recovery efforts. In addition to his disaster grant management and response work, Mr. Kunish has been a project manager on numerous disaster debris removal and debris removal monitoring projects and supports communities as they evaluate flooded properties to make substantial damage estimations under the National Flood Insurance Program. He began his career with the State of Florida Division of Emergency Management and worked there for thirteen years serving as the State's Planning Section Chief, Incident Management Team Commander, and Hazardous Material Auditor. Over the past nineteen years Mr. Kunish has responded to disasters from the private and public sector emergency management perspective including hurricanes, floods, ice storms, fires, emergency repatriations, tornadoes, public health epidemics, hazardous material releases and earthquakes.

RELEVANT EXPERIENCE

Technical Expert (March 2018–Ongoing)

Commonwealth of Puerto Rico | Public Assistance Program Implementation

With the devastating damage following Hurricane Maria's impact to Puerto Rico, Mr. Kunish has been supporting Puerto Rico's Governor's Authorized Representative to implement FEMA's as the grantee for the Public Assistance program. His support included advising and implantation of a Section 428 Alternate Procedure that is required for all permanent work in Puerto Rico, setup of an island wide private property debris removal program, focused support for grant work for the Island of Vieques, and project formulation strategy for replacement of flood public housing projects. Mr. Kunish also administers over a hundred field inspectors and grant managers.

Project Manager (October 2015–Ongoing)

Richland County, South Carolina | Post Flood Disaster Flood Assistance

Following the flood disaster that impacted Richland County in October 2015, Mr. Kunish supported the management of the county's claims development and administration. Mr. Kunish is currently providing programmatic and implementation support for the FEMA Public Assistance (PA) Grant Program, Hazard Mitigation Grant Program (HMGP), and the Community Development Block Grant Program.

EDUCATION

University of Florida Bachelor of Arts, Sociology, Minor in Education

AREA OF EXPERTISE

- Project Management
- Disaster Response
- Disaster Recovery
- Hazard Mitigation
- Emergency Operations
- Hazardous Material Planning
- Duplication of Benefits Recovery

TRAINING/CERTIFICATIONS

- Certified Emergency Manager
- FEMA Professional Development Series
- OSHA 40 Hour Construction Safety
- O-400 Incident Commander
- ICS-100 through ICS-400
 Incident Command System
- G-202 Debris Management
- G-137 Exercise Program Manager
- Homeland Security Exercise and Evaluation Program (HSEEP) Exercise Evaluation
- Construction Quality
 Management (CQM)

YEARS OF EXPERIENCE

19 years

Project Manager (June 2016–December 2016) and Principal-In-Charge (August 2017 – Ongoing) Fort Bend County, Texas | Substantial Damage Estimation and HMGP Application

In 2016, Fort Bend County experienced flooding of over 1,500 homes as a result of an historic rain event. Mr. Kunish supported the County's efforts to identify, inspect and issue notices for Substantial Damage Estimation (SDE) determination as required to maintain compliance with the National Flood Insurance Program. He also assisted with the County's application process to elevate or buyout 76 properties that were damaged during the flooding event. In 2017, Hurricane Harvey causes another historic flood where many homes that flooded in 2016 were also damaged where Mr. Kunish once again provided support to the County's SDE efforts.

Project Manager (April 2016–June 2016) Project Manager (August 2017-Ongoing)

Harris County, Texas | Disaster Debris Removal

Following a record breaking rain event in 2016, Harris County experienced significant residential flooding in which over a 1,000 flooded homes generated over 40,000 cubic yards of debris. The following year the County experience a historical flood caused by Hurricane Harvey where over 30,000 homes were flooded and over 1,500,000 cubic yards of debris removed by the County's contractors, mutual aid and force account forces. In both events Mr. Kunish and his team (50 personnel in 2016 and over 300 personnel in 2017) assisted Harris County to monitor and manage the removal of disaster debris. The County's efforts included the removal of construction and demolition debris, vegetative debris, e-waste, household hazardous waste and white goods. Mr. Kunish also ensured that all activities were done in compliance with Federal and State regulations and documented removal from debris from cradle to grave for invoicing and auditing efforts.

Project/Readiness Manager (October 2016 – January 2017)

Flagler County, Florida | Hurricane Mathew Debris Removal

Mr. Kunish rapidly deployed over 50 personnel to consisting of fulltime Tetra Tech staff, subcontractors and local hires to monitor the County's debris removal operations. Mr. Kunish provided extensive debris planning and programmatic support as the County initiated their operations. Coordination with FEMA and the State environmental agency on debris disposal sites became a significant part of the operational planning Mr. Kunish provided.

Project Manager (December 2013–Ongoing)

Galveston County, Texas | HMGP and SRL Assistance

Mr. Kunish assisted Galveston County with its HMGP and Severe Repetitive Loss (SRL) programs following Hurricanes Ike and Gustav, which devastated the county with storm surge. Mr. Kunish served as the project manager in the implementation of the SRL Program, where 121 houses were elevated to mitigate their risk to future flooding. Mr. Kunish also managed the closeout of 150 properties that were bought with funding under the HMGP.

Project Control Specialist (October 2013-August 2016)

Boulder County, CO | Public Assistance Consulting

Following the flood disaster that impacted Boulder County in September 2013, our team was selected to manage the county's claims development and administration of \$100 Million. Mr. Kunish is currently providing programmatic and application support for the FEMA Public Assistance (PA) Grant Program, Hazard Mitigation Grant Program (HMGP), and the Community Development Block Grant Program.

Senior PA Specialist (September 2014 – September 2015)

Napa County, California | South Napa Earthquake (FEMA-4193-DR-CA)

As the deputy director of post disaster programs, Mr. Kunish directly supports project operations on the Napa County public assistance (PA) project. Of particular importance is his implementation of Tetra Tech's RecoveryTrac[™] system, which provides real-time information regarding project worksheet (PW) formulation, development, and obligation, and serves as the data backbone of Tetra Tech's PA projects.

Project Manager (December 2013–September 2014)

Terrebonne Parrish, LA | Hurricane Katrina CDBG Buyout and Demolition

The Parrish utilized CDBG-DR funding to buyout and demolish 30 homes in order to redeveloped neighborhoods and eliminate blight that they were experiencing, Mr. Kunish was involved in ensuring compliance CDGB regulations, supporting participant outreach and monitored reporting requirements.

Project Manager (August-September 2012)

Livingston Parish, Louisiana | Hurricane Isaac Debris Removal

Mr. Kunish served as project manager, where he oversaw and managed the debris collection, segregation, and final disposal to include management of burn pits and coordination with recycling and landfill disposal options.

Project Manager (August-September 2011)

City of Minot, North Dakota | Souris River Flooding - Emergency Levee Removal

The Souris River flooding displaced over 2,100 households in the City of Minot, North Dakota. To combat the flood waters, emergency levees were placed in strategic locations throughout Ward County. Mr. Kunish oversaw this project, which consisted of removing the emergency levees and returning the material used to borrow locations for future use. This was completed with over 150 trucks and multiple loading and cleanup crews.

Project Manager (April–July 2011)

Lamar and Limestone Counties, Alabama | Tornadoes Private Property Debris Removal Program Management

The devastation of the 2011 Alabama tornadoes required the activation of the private property debris removal program in Lamar and Limestone Counties. Mr. Kunish served as project manager, where he managed and oversaw the verification of the amount and type of debris to be removed from private property, assigned and managed debris removal crews, and managed final disposal of debris.

Deputy Bureau Chief and various other positions (February 1998 – February 2011)

State of Florida – Division of Emergency Management | Day to Day Emergency Management Operations Over the span of 13 year, Mr. Kunish's career with the Division covered many emergency management practice areas. Prominent experience during his State of Florida tenure included; administration of the Florida Hazardous Materials Program, administration of the State's Mitigation Bureau that encompassed the hazard mitigation planning program, the State's Hazard Mitigation Plan, the Hazard Mitigation Grant Program and the Hazard Mitigation Assistance (formerly RL, SRL and PDM) Program. Mr. Kunish also worked with the State's growth management programs (including CDBG) to represent the emergency management perspective. This interaction help support Mr. Kunish's involvement in the production of Florida's Regional Evacuation Studies.

Plans Section Chief (April-August 2010)

State of Florida – State Emergency Response Team | Deepwater Horizon Oil Spill

The State Emergency Response Team was activated for a record of 120 days in response to the Deepwater Horizon Oil Spill. Mr. Kunish was instrumental in ensuring Florida maintained a current common operating picture, planned for future operations, and instituted the battle rhythm of the State Emergency Operations Center. At the height of the response, Florida's reconnaissance mission utilized 2 fixed wing aircraft, 5 helicopters, 35 ground teams, and 30 water teams to identify the impacts of the spill.

Plans Section Chief (May–December 2009)

State of Florida – State Emergency Response Team | H1N1 Pandemic

The H1N1 pandemic presented the emergency management community with significant challenges and required contingency planning to prepare for the effects of a pandemic flu event. The Plans Section provided multiple platforms for sharing information with the public and the emergency management community. As one of the platforms, Mr. Kunish coordinated a weekly conference call and webinar that included hundreds of local

emergency managers, health officials, and the State Surgeon General to facilitate information sharing across all levels of government.

Incident Management Team Commander (April-August 2008)

State of Florida – State Emergency Response Team | Tropical Storm Fay

The Incident Management Team was responsible for all emergency management-specific field operations for Tropical Storm Fay that resulted in over \$100,000,000 in PA funding. This included organizing, scheduling, conducting, and reporting results to the SERT from all preliminary damage assessments; managing and coordinating all State Emergency Response County Liaisons; managing all Florida Division of Emergency Management Regional Coordinators; and providing public information services.

Incident Management Team Commander (February 2007)

State of Florida – State Emergency Response Team | Lake County, FL Groundhog Day Tornadoes The 2007 Groundhog Day Tornadoes killed 21 people and damaged over 1,100 homes. Mr. Kunish commanded Florida's Incident Management Team that was responsible coordinating the initial state-level response, implementation of recovery programs, and the coordination between Lake County and the State Emergency Operations Center.


Chaoran (Owen) Chen Data Manager

EXPERIENCE SUMMARY

Mr. Chen is an experienced quality control and data manager for Tetra Tech, Inc. His areas of expertise are in geographic information systems, documentation management, quality assurance/quality control (QA/QC), database management, and reporting. He also has an in-depth understanding of Federal Emergency Management Agency (FEMA) eligibility, documentation requirements, and our automated debris management system (ADMS).

FEATURED RELEVANT EXPERIENCE

Data Manager (August 2018-Current)

Shasta County, California | Carr Fire

The Carr Fire was the sixth-most destructive fire in California history and destroyed at least 1,604 structures being fully contained. Tetra Tech was awarded a contract to provide environmental testing, data management and administrative functions to support debris removal efforts. Mr. Chen is currently deployed as a data manager supporting the documentation efforts of the project.

Data Manager (January 2018-July 2018)

Napa County, California | Atlas Fire

The Atlas fire that impacted Northern California left severe destruction and damage. Ceres Environmental was one of the contractors selected by US Army Corps of Engineers (USACE) to remove fire related debris and hazards from private property in the fire impacted areas of Napa, Mendocino and Lake Counties. Tetra Tech was contracted by Ceres Environmental to provide environmental testing, data management and administrative functions to support debris removal efforts. Mr. Chen was deployed as a data manager to work with the client and support the implementation of our ADMS technology. Mr. Chen is also responsible for data reconciliation and reporting.

Data Manager, Tampa Bay Theater Lead (September 2017-Janurary 2018) Pinellas County, Florida | Hurricane Irma

Mr. Chen was deployed as the Tampa Bay region data manager team lead following the deadly hurricane Irma that affected the state of Florida in September 2017. Overseeing 15 regional projects, Mr. Chen and his data team were responsible for managing documentation accuracy and supporting field use of ADMS technology through all phases of operations including truck certifications, QA/QC of right-of-way load collection, and documentation for all hazardous trees and hangers removal. As a theater lead, Mr. Chen's responsibility also included reporting, data reconciliation, auditing project documentation and local data team recruitment and training.

Data Manager (October 2016-June 2017)

Beaufort County, South Carolina | Hurricane Matthew Debris Removal Program

Following Hurricane Matthew, Mr. Chen served as a data manager in Beaufort County, South Carolina. Mr. Chen supported the implementation of our ADMS technology through all phases of operations and was responsible for troubleshooting with our field team. Mr. Chen aided in FEMA compliance management, including QA/QC of right-of-way load collection, and managing the documentation for all hazardous tree and hanger removal. Mr. Chen provided and maintained dynamic real-time online mapping services through ArcGIS Online program which

YEARS OF EXPERIENCE

5 years

AREA OF EXPERTISE

- QC GIS Data Collection/Disposal Monitoring
- Managing ROE Status Layers
- ROW/Parks program live layers on ArcGIS Online Systems

DISASTERS

- 5259 Carr Fire
- 4344 Atlas Fire
- 4337 Hurricane Irma
- 4286 Hurricane Matthew
- 4240 Valley & Butte Fire
- 4166 SC Winter Storm
- 4145 CO Severe Storms and Flooding
- 4086 Hurricane Sandy

reports real-time data that is connected to our ADMS system. Mr. Chen also supported documentation management and was responsible for reporting.

Data Manager (January 2016-September 2016)

Calaveras County, California | Catastrophic Fires

The catastrophic fires that impacted Calaveras County left severe destruction and damage. Sukut Construction was one of the contractors selected by CalOES to remove fire related debris and hazards from private property in the fire impacted areas of Calaveras County. Tetra Tech was contracted by Sukut Construction to provide data management and administrative functions to support debris removal efforts. Tetra Tech digitized source documentation and developed a custom Access database to provide reporting as to the status of properties and debris removal operations. Mr. Chen was deployed as data manager where he oversaw the custom Access database used for the program.

Data Manager (November 2015-January 2016, July 2017-September 2017)

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 were a threat to fall and threaten citizens 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. Chen was deployed as a data manager where he supported documentation management, reporting, and tree surveying efforts.

Data Manager (May 2015-August 2015)

Hays County, Texas | Severe Flooding Disaster Debris Program Management

Mr. Chen was deployed as a data manager for Hays County, Texas following the severe flooding that affected the state in May 2015. Mr. Chen supported the implementation of our ADMS technology through all phases of operations and was responsible for troubleshooting with our field team. Mr. Chen aided in FEMA compliance management, including QA/QC of right-of-way load collection, and managing the documentation for all hazardous tree and hanger removal. Mr. Chen also managed and provided dynamic real-time online mapping service through ESRI.

Data Manager (March 2014-August 2014)

Boulder County, Colorado | Severe Flooding Disaster Debris Program Management

Mr. Chen served as data manager for Boulder County, Colorado following the severe flooding that affected the state in September 2013. Mr. Chen supported the implementation of our ADMS technology through all phases of operations and was responsible for troubleshooting with our field team. Mr. Chen's responsibilities also included completing custom reports for Boulder County, providing FEMA compliance management, including quality assurance (QA)/quality control (QC) of right-of-way load collection; and managing the accuracy and organization for all project documents. Through GIS mapping services, Mr. Chen provided requested maps of project progression which required customization for the County. Finally, Mr. Chen also provided Financial Recovery support in assisting with complete of FEMA-PA project worksheets.

Data Manager (February 2014–March 2014)

Dorchester County, South Carolina | Winter Storm Pax Disaster Debris Program Management

Mr. Chen served as the data manager for the County of Dorchester, South Carolina following Winter Storm Pax. He was responsible for deploying and supporting field use of ADMS technology through all phases of operations including truck certifications, load collection, load disposal, and unit rate collections. Mr. Chen also aided in FEMA compliance management, including QA/QC of right-of-way load collection, and managing the documentation for all hazardous tree and hanger removal resulting in the development of several resourceful maps for the county and project team members.



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 PA DEP. While serving in this role, Mr. Burns was responsible for assisting with numerous assessments and document review. Mr. Burns assisted with the creation of the Pennsylvania Indx of Biological Integrity to be used throughout the state of Pa. While with Tetra Tech, assisted with the Enbridge Line 6b release NRDA work. During this role, Mr. Burns assisted with the creation of numerous assessments, reviewed data from these assessments, participated in NRDA meetings, and developed the SCAT reconciliation process for the Enbridge release. 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, PIDs, 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

Christopher Burns Environmental Specialist

YEARS OF EXPERIENCE

15 years

AREA OF EXPERTISE

- Fire Assessment
- Emergency Response
- Asbestos
- Technical Report
 Preparation and Review
- Project Management
- Scientific Research
- Fisheries/Ichthyology

TRAINING/CERTIFICATIONS

- ICS Level 100, 200, 300, 400, 301 and NIMS 700 and 800
- 40-Hour OSHA 29 CFR 1910.120 HAZWOPER
- OSHA 8-Hour Refresher Training
- EPA Chemistry for Environmental Professionals
- EPA Air Monitoring for Hazardous Materials 165.4, 2007 and 2005 EPA RCRA Compliance and Enforcement Workshop
- EPA Sampling for Hazardous Materials 165.9
- EPA Introduction to Groundwater Investigations 165.7

EDUCATION

Penn State University, Bachelor of Science in Fisheries and Wildlife Science 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 Manger, 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.

Former Keasby and Mattison Asbestos Facility (2010)

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

Liberty Radiation Exercise (2010)

Tier 3 United States EPA exercise in which a cesiem explosive device was detonated in downtowm Philadelphia. This multi-agency / multi-contractor exercise was a 5 day drill that incorperated all aspects of incident comand and radiological forcasting devices. Specific duties included act as a member of the unified command overseeing all aspects of the exercise as in play.

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

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.

Regional Data Manager (August 2017-June 2018)

State of Texas | Hurricane Harvey | Disaster Debris Program Management

Mr. Atkinson served as a regional data manager following the aftermath of Hurricane Harvey. She provided senior level leadership and guidance to field project managers. Ms. Atkinson verified field data managers followed standard operating procedures to manage and report debris collection statistics and progress. Ms. Atkinson also managed a team of invoice reconcilers that reviewed and submitted reconciled hauler invoices to Tetra Tech's Texas clients.

Regional Data Manager (September 2016-June 2017)

State of Florida | Hurricane Matthew | Disaster Debris Program Management

Ms. Atkinson served as a regional data manager and provided senior level leadership and guidance to field project managers. Hurricane Matthew primarily impacted Florida's east coast communities such as Volusia, Flagler,

Paris Atkinson Billing/Invoice Analyst

YEARS OF EXPERIENCE

13 Years

AREA OF EXPERTISE

- FEMA Reimbursement and Audit Support
- Reimbursement Policies and Procedures
- RecoveryTrac[™] ADMS
- Data Management
- Debris Monitoring
 Compliance
- Invoice Reconciliation
- Geospatial Analysis

GRANT EXPERIENCE

- FEMA PA
- FHWA ER

DISASTERS

- 4337 Hurricane Irma
- 4332 Hurricane Harvey
- 4283 Hurricane Matthew
- Collier County FL Severe Storms
- 4269 TX Flooding
- 4240 CA Valley Fire
- 4223 TX Flooding
- 4166 SC Winter Storm
- 4165 GA Winter Storm
- 4145 CO Flooding
- 4087 Hurricane Sandy
- 4080 Hurricane Isaac
- 4046 CT Winter Storm
- 4029 TX Wildfires
- 3268 NY Snowstorm
- 1609 Hurricane Wilma

EDUCATION

University of Florida Bachelor of Science, Psychology, 2005 and St. John's County. Ms. Atkinson also performed quality assurance checks on field data managers to verify proper project reporting and data management. Ms. Atkinson also led a team of reconcilers to review and process debris hauler invoices for submission to Tetra Tech's Florida 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 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 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 (February 2013–April 2014)

New Jersey Department of Environmental Protection | Hurricane Sandy Waterways Debris Removal Program Management

Ms. Atkinson served as data manager following Hurricane Sandy, where she was responsible for the management and data creation of vessel removal tracking in New Jersey waterways, photo management of vessel removals, data management and tabulation, monitoring document compliance, monitoring the removal of vessels in accordance with legal requirements established, and database support for staff.

Data Manager (August 2012–February 2014)

St. John the Baptist Parish, Louisiana | Hurricane Isaac Disaster Debris Management Program

Ms. Atkinson served as data manager, where she provided invoice reconciliation, data export creation, data center management, document compliance monitoring, management of hazardous tree and hanger photo documentation, and database support for staff. Ms. Atkinson also monitored data to ensure FEMA compliance in the field and the managed us of our ADMS.

Data Manager (January 2013–March 2013)

Borough of Sayreville and the Township of Ocean, New Jersey | Hurricane Sandy Disaster Debris Management Program

As data manager, Ms. Atkinson was responsible for managing hazardous tree and hanger photo documentation, invoice reconciliation, data export creation, data management and tabulation, monitoring document compliance, and database support for staff. She was also responsible for reimbursement support and training on our ADMS.

Data Manager (November 2012–January 2013)

State of Connecticut; Cities of Greenwich, Milford, New London, Woodbridge, Connecticut; and the Towns of Bethany, Fairfield, Weston, Connecticut | Hurricane Sandy Disaster Debris Management Program

Ms. Atkinson provided invoice reconciliation, data export creation, data management and tabulation, document compliance monitoring, and database support for staff.

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.

Data Manager (September–November 2012)

Jefferson Parish and the City of New Orleans, Louisiana | Hurricane Isaac Disaster Debris Management Program

Ms. Atkinson served as data manager following Hurricane Isaac, where she was responsible for call center management, data center management, document compliance monitoring, management of hazardous tree and hanger photo documentation, database support for staff, and data monitoring to ensure FEMA compliance in field.

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.

Data Manager (July 2012–August 2012)

Clay County, Florida | Tropical Storm Debby Disaster Debris Management Program

Ms. Atkinson was responsible for data entry, tabulation, data management of compliance documentation, and the organization of collection and disposal data.

Operations Manager and Data Manager (October 2006–January 2007)

City of North Tonawanda and Tonawanda, NY | New York Severe Winter Storm Debris Management Program

Ms. Atkinson served as operations manager and data manager following the New York Severe Winter Storm, where she was responsible for the supervision, support, and evaluation of field staff; documentation compliance; management of hazardous tree and hanger photo documentation; and validation of FEMA compliance in the field.

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.

Operations Manager (October 2005–February 2006)

City of Naples and Naples Airport Authority, Florida | Hurricane Wilma Disaster Debris Management Program

Ms. Atkinson served as operations manager following Hurricane Wilma, where she was responsible for the supervision, support, and evaluation of field staff; documentation compliance; management of hazardous tree and hanger photo documentation; and ensuring FEMA compliance in the field.



Jonathan Burgiel Business Unit President, Disaster Recovery

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.

EDUCATION

University of Central Florida Master of Business Administration, 1989

Tufts University Bachelor of Arts, Economics, 1984

AREA OF EXPERTISE

- Solid and Hazardous Waste
 Management
- Disaster Recovery Program Management
- Federal Grant Management

GRANT EXPERIENCE

- FEMA PA
- CDBG-DR
- HMGP

DISASTERS

- 4337 FL Hurricane Irma
- 4332 TX Hurricane Harvey
- 4286 SC Hurricane Matthew
- 4245 TX Flood
- 4241 SC Flood
- 4087 Hurricane Sandy
- 4084 Hurricane Isaac
- 4029 TX Wildfires
- 4024 Hurricane Irene
- 4106 CT Winter Storm
- 1791 Hurricane Ike
- 1786 Hurricane Gustav
- 1780 Hurricane Dolly
- 1679 FL Tornados
- 1606 Hurricane Rita
- 1609 Hurricane Wilma
- 1602 Hurricane Katrina
- 1595 Hurricane Dennis
- 1561 Hurricane Jeanne
- 1551 Hurricane Ivan
- 1545 Hurricane Frances
- 1539 Hurricane Charley

YEARS OF EXPERIENCE

30+ years

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 (April 2012-May 2013)

State of Vermont | Federal Grant Management Services

Following Hurricane Irene, the State of Vermont faced the daunting task of maintaining critical operations. Under Mr. Burgiel's direction, within 48 hours our team deployed a team of experts to the state emergency operations center (EOC). Mr. Burgiel and our grant management team provided consulting services and managed the recovery process. Our team collected, reviewed, and offered technical assistance to applicants on their Hazard Mitigation Grant Program (HMGP) applications.

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.



Ralph Natale Director, Post Disaster Programs

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)
- State of Connecticut | Interagency Debris Management Task Force (August 2010–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)

YEARS OF EXPERIENCE

13 Years

AREA OF EXPERTISE

- Program Development
- Documentation Management
- Private Property Debris Removal Programs
- Debris Removal Planning
- Debris Removal Monitoring
- Geospatial Reporting

GRANT EXPERIENCE

- FEMA PA
- NRCS EWP
- FHWA ER
- CDAA

DISASTERS

- 4344 Ca Wildfires NorCal
- 4353 Ca wildfires Ventura:
- 4332 Harvey
- 4337 Irma
- 4245 TX Severe Storms
- 4145 CO Flooding
- 4087 Hurricane Sandy
- 4084 Hurricane Isaac
- 4029 TX Wildfires
- 4024 Hurricane Irene
- 4106 CT Snow Storm
- 3268 NY Snowstorm
- 1971 AL Tornadoes
- 1791 Hurricane Ike
- 1786 Hurricane Gustav
- 1780 Hurricane Dolly
- 1763 IA Flooding
- 1609 Hurricane Wilma
- 1602 Hurricane Katrina

TRAINING/CERTIFICATIONS

- OSHA 40-Hour Asbestos Training
- IS-632: Debris Operations
- HSEEP-Certified

EDUCATION

New Jersey Institute of Technology Bachelor of Science, Chemical Engineering *(in progress)*

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:

Northern California (NORCAL) Wildfire Response (November 2017-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.

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.

CalRecycle | Erskine Fire (July 2016–October 2016)

As principal in charge for the Erskine wildfire recovery project, Mr. Natale oversaw operations including staffing, safety, field logistics, task force dispatching, training, and other daily activities. The Erskine fire was the second-most destructive fire of the California wildfire season that year, burning nearly 50,000 acres, and destroying over 100 buildings. Debris removal was performed on 302 fire-damaged sites, and under Mr. Natale's oversight the firm provided management and support staff for the CalRecycle/Cal Office of Emergency Services (OES) incident command system for the duration of the program.

California | Valley and Butte Fire (October 2015–2016)

Mr. Natale helped create and implement programs for several projects after the Valley and Butte fires of 2015, which burned over 150,000 acers of forests and destroyed over 2,000 homes, with recovery costs of over \$300

million. Each program developed was unique but necessary for the community as a whole to recover. Programs included geospatial live tracking of work completed and equipment deployed; mitigation of hazardous trees from rights of ways and private property that was fully funded by CalOES and FEMA; private property debris removal packet management and database support; and management of a unique mix of environmental scientists and debris specialists to provide documentation for remediation of asbestos and other contaminants left behind, including debris quantities. These clients included Lake County Public Works, CalRecycle (AJ Diani), CalRecycle (Sukut), and PG&E.

State of New Jersey | Hurricane Sandy Disaster Recovery Operations (October 2012–January 2013)

Mr. Natale supported debris monitoring efforts for seven separate municipalities and state agencies following Hurricane Sandy. These clients including but not limited to the City of Newark, City of Sayreville, Ocean Township, and the New Jersey Parks Department.

State of Connecticut | Hurricane Sandy Statewide Debris Monitoring Operations (October–December 2012)

Mr. Natale oversaw statewide debris monitoring operations in response to Hurricane Sandy. Mt. Natale led our team in responding to nine municipalities spread over 100 miles, including but not limited to the Town of Fairfield, City of New London, and the Town of Greenwich.

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.

State of Connecticut | Winter Strom Alfred Statewide Debris Monitoring Operations (October 2011–April 2012)

Mr. Natale oversaw efforts to coordinate with 12 individual local governments and 45 Connecticut Department of Transportation towns to collect more than 1.5 million CYs of vegetative debris and remove over 100,000 hazardous trees.

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)

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.

New Jersey Department of Environmental Protection (NJDEP) | Hurricane Sandy Waterway Debris Removal Project (February 2013–January 2014)

Mr. Natale developed and implemented many of the protocols and procedures to effectively manage the wet debris removal process. This has included the implementation of our proprietary automated debris management system (ADMS) technology, which has increased NJDEP's visibility to the day-to-day operations and provided real-time reporting of debris quantities. Due to Mr. Natale's excellent project management, NJDEP then tasked our team with monitoring the sediment removal process in the northern and southern region.

Connecticut Department of Transportation | Winter Storm Alfred Statewide Response (October 2011–April 2012)

Mr. Natale oversaw a statewide operation that covered state roadways in 45 towns though western Connecticut. This program required side-by-side debris tracking of FEMA and FHWA crews. Debris removal costs were nearly \$50 million, with over 500,000 CYs collected and 45,000 hazards trees removed.

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

TRAINING/CERTIFICATIONS

- OSHA Asbestos Health and Safety
- IS-30: Mitigation Grants System
- IS-100, 200, and 700: ICS and NIMS
- IS-630: Intro to the PA Process
- IS-631: PA Operations



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.

Lead Field Manager (November 2017– March 2018)

U.S. Virgin Islands | Hurricane Maria

Following the destruction caused by Hurricane Maria, the U.S. Army Corps of Engineers (USACE) was tasked with the mission to remove and dispose of disaster debris. Tetra Tech was contracted by one of the USACE awarded

Jeffrey Dickerson GIS Specialist

YEARS OF EXPERIENCE

30 Years

AREA OF EXPERTISE

- Mobile and GIS Technology
- Resource Deployment and Tracking
- Readiness Training and Exercises
- Disaster Operations Support
- 20+ Years Military Experience

DISASTERS

- 4340 Hurricane Maria
- 4240 CA Wildfires
- 4223 TX Flooding
- 4166 SC Winter Storm
- 4165 GA Winter Storm
- 4145 CO Flooding
- 4115 SD Winter Storm
- 4087 Hurricane Sandy
- 4084 Hurricane Isaac
- 4029 TX Wildfires
- 4024 Hurricane Irene
- 4106 CT Winter Storm
- 1791 Hurricane Ike
- 1609 Hurricane Wilma
- 1602 Hurricane Katrina

TRAINING/CERTIFICATIONS

- FEMA IS-632, IS-700, IS-922
- MCDBA, Microsoft Certified Database Administrator
- MCSE, Microsoft Certified Network Engineer
- MCT, Microsoft Certified
 Trainer

EDUCATION

Thomas Edison University Associate of Science, Nuclear Engineering Technology, 1997 contractors to provide ADMS management and documentation of debris removal activities. Mr. Dickerson served as Lead Field Manager and was responsible for the management and implementation of RecoveryTrac[™] to document debris removal efforts.

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.

Project Manager (August 2016–January 2017)

Miami Dade County, FL | Zika Mosquito Inspection and Remediation Monitoring and Program Management

Mr. Dickerson managed the development and deployment of customized GIS-enabled ADMS technology to document and manage a Door to Door Mosquito inspection and remediation program. RecoveryTrac technology was implemented by providing Contractor Crews with handheld smart phone devices loaded with the RecoveryTrac software to capture and report the inspection and remediation activity data in real time. The data collected was critical to the County in directing resources in response to changing health concern areas and mosquito counts.

GIS/ADMS Applications Manager (October 2015–August 2016)

Lake and Calaveras Counties, CA | Wildfire Disaster Debris Private Property Debris Removal (PPDR) Program Management

Mr. Dickerson managed the development and deployment of customized GIS-enabled ADMS technology to automate a private and commercial property hazard removal and demolition program, including environmental remediation sampling. Over 4,000 hazardous tree were removed and 1,000 structures were, demolished generating nearly 100,000 cubic yards of mixed debris. Advanced GIS mapping, document, and data analysis portals were used extensively to document California environmental requirements.

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 RecoveyTrac[™] 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 (October 2013–December 2013)

City of Rapid City, South Dakota | Severe Winter Storm Disaster Debris Program Management

Mr. Dickerson managed the logistics and deployment of ADMS technology, including over 60 handheld devices for over 7,500 hazardous limb and tree removals and over 100,000 cubic yards of debris. The RecoveyTrac[™] GIS portal was used extensively for real-time quality control of field operations and management of resources. Field operations were completed in less than 50 days, which enabled the City to take advantage of increase cost share funding.

ADMS Application Manager (April 2013–June 2013)

City of Sioux Falls, South Dakota | Severe Winter Storm Disaster Debris Program Management Mr. Dickerson managed the logistics and deployment of ADMS technology, including over 100 handheld devices for nearly 27,000 hazardous limb and tree removals and over 15,000 tons of debris. RecoveyTrac[™] GIS services provided the City with a real-time data feed of the debris operations that was integrated into the City's emergency operations management portal.

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 (October 2011–March 2012)

Connecticut Department of Transportation | Winter Storm Alfred Disaster Management Support Services Following a severe winter storm, Mr. Dickerson managed the logistics and network infrastructure to support the project work for over 11 state, county, and local clients. His responsibilities included coordinating logistics activities and supporting and developing custom data and mapping applications.

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.

Data Operations Manager (August 2005–October 2006)

Miami-Dade County, Florida | Hurricanes Katrina and Wilma Disaster Recovery and Debris Management Mr. Dickerson was responsible for the setup and management of a 90-person data center. Mr. Dickerson provided

database technical support to successfully track the documentation for over 5 million cubic yards of debris.

Quality Control Manager (September 2004–October 2007)

Escambia County, Florida | Hurricane Ivan Comprehensive Disaster Program Management

Mr. Dickerson provided quality control and fraud prevention support during Escambia County's debris removal operations. Mr. Dickerson performed volumetric truck certification, DMS quality control monitoring, and roving collection monitor supervision.



John Buri Principal & Director, Post Disaster Programs

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
- 39 national and state-level conference speaking engagements: He is a nationally recognized speaker on disaster recovery and preparedness topics, presenting at the National Hurricane Conference, National Hazardous Materials Management Association Annual Conference, Solid Waste Association of North America Annual Conference (WasteCon), Maryland Emergency Management Association Conference, Government Finance Officers Association Conference, Texas Homeland Security Conference, North Carolina Emergency Management Conference, and the National Forum for Black Public Administrators Conference.

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,

YEARS OF EXPERIENCE

16 Years

AREA OF EXPERTISE

- Damage Assessment
- Policy and Procurement
- Debris Management
- Disaster Housing
- Grant Application Development
- Grant Accounting Systems
- Audit Process
- Closeout Procedures

GRANT EXPERIENCE

- FHWA-ER Program
- HUD CDBG-DR
- FEMA PA
- FEMA 404 HMGP
- FEMA HMA

DISASTERS

- 4245 TX Flood
- 4241 SC Flood
- 4240 CA Wildfire
- 4223 TX Flood
- 4222 OK Flood
- 4193 Napa Earthquake
- 4166 SC Winter Storm
- 4165 GA Winter Storm
- 4145 Colorado Floods
- 4087 Hurricane Sandy
- 4084 Hurricane Isaac
- 4029 TX Wildfires
- 4024 Hurricane Irene
- 4022 Tropical Storm Irene
- 4106 CT Winter Storm
- 4064 OK Tornado
- 1969 NC Tornados

EDUCATION

Texas State University Master of Arts, Public Administration, 2002

The University of Texas Bachelor of Arts, Government, 2000 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

Disaster Grant Management Consulting – 2013 Front Range Flood

Boulder County, Colorado, Program Manager

- Overall responsibility for the management and performance of our task order for \$8M in consulting services associated with the administration and documentation to support disaster grants
- Managed the grant administration of \$300M in FEMA PA, FEMA HMGP, FHWA-ER, NRCS-EWP and HUD CDGB-DR recovery grants following the front-range floods.
- Coordinated recovery efforts between the County, USACE, NRCS, FEMA, Colorado Department of Local Affairs (DOLA), Colorado Division of Homeland Security and Emergency Management (DHSEM), Colorado Department of Transportation, Town of Lyons and Jamestown, internal county departments and elected officials.
- Facilitated strategic planning meetings with community stakeholders to identify long term recovery initiatives

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

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

Richland County, South Carolina | Public Assistance Consulting

Mr. Buri has been an integral part of Tetra Tech's Richland County disaster recovery team assisting the Project Manager and consultants with obtain data, policy interpretation and general grant consulting. Mr. Buri has focused his time assisting with navigating the on-going challenges associated with dam reconstruction, road damage restoration and long term recovery.

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 is currently leading the Tetra Tech team supporting Hays County following two (2) major disaster declarations in 2015 including the May Memorial Day Flood and October All-Saints Day Flood that . 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 reimbursementrelated 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 (February 2014-May 2014)

Counties of Barnwell; Colleton; Dorchester; Hampton; Sumter, South Carolina; City of Sumter, South Carolina; City of Augusta, Georgia | Winter Storm Pax Disaster Debris Program Management Following the destructive effects of Winter Storm Pax in February 2014, our team was tasked with providing disaster debris program management to numerous communities in the States of South Carolina and Georgia. Mr. Buri was instrumental in the immediate deployment of our team and is currently overseeing all disaster recovery operations, including leaner and hanger removal. In addition, Mr. Buri is currently working with each community to

ensure that all eligible reimbursement is captured and documented.

Subject Matter Expert/Senior Management Oversight (February 2013-January 2014)

New Jersey Department of Environmental Protection | Hurricane Sandy Waterway Debris Removal Project Mr. Buri provided subject matter expertise in the development and implementation of numerous protocols and procedures to effectively manage the New Jersey Department of Environmental Protection's (NJDEP) waterways debris removal program. Mr. Buri oversaw the implementation of our automated debris management system (ADMS) technology, which increased NJDEP's visibility to the day-to-day operations and provided real-time reporting of debris quantities. Due to the excellent senior and project management provided by our team, NJDEP then tasked our team with monitoring the sediment removal process in the northern and southern region.

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 (October 2011-April 2012)

State of Connecticut | Winter Storm Alfred Disaster Debris Program Management

Mr. Buri provided senior management oversight to the State of Connecticut as a member of the Interagency Debris Management Task Force (IDMTF) at the state EOC for Winter Storm Alfred. 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 and providing operational and client support. In addition, Mr. Buri assisted in the management of12 individual local governments and 45 communities to collect more than 1.5 million cubic yards of vegetative debris and remove over 100,000 hazardous trees.

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.

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 HMGP. Within 48 hours, our team deployed a team of experts to the State of Vermont 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 sought 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.

Senior Management Oversight (August-December 2011)

State of North Carolina | Hurricane Irene Disaster Debris Program Management

Mr. Buri provided senior management oversight to the State of North Carolina following the impact of Hurricane Irene and was instrumental in all disaster recovery operations. Mr. Buri oversaw a variety of projects for all 16 of our North Carolina clients, including right-of-way debris removal and disposal, removal of dangerous hanging limbs and leaning trees, residential debris disposal, Federal Highway Administration (FHWA) debris segregation, and FEMA reimbursement.

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.

Senior Management Oversight (September 2008–Ongoing)

Galveston County, Texas | FEMA HMGP, Severe Repetitive Loss (SRL), and CDBG Application, Administration, and Implementation

Following Hurricane Ike, Galveston County faced the daunting task of maintaining critical operations. Galveston County engaged our team to assist with its overall recovery process. This included consulting services for the FEMA PA program and evaluating 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 HMGP. Within 48 hours, our team deployed a team of experts to Galveston County to manage all aspects of these processes. Beginning with public outreach and program setup, our staff began collecting applications from property owners and compiling an HMGP application for the buyout of up to 1,000 properties and the elevation of 12 others through a \$102 million HMGP grant, which our team secured, implemented, and is in the process of closing out. In addition, Galveston County also engaged our team to assist with its extensive PA process and to act as a standby PA consultant for future disasters. Finally, on behalf of Galveston County, our team applied for a FEMA SRL grant to elevate many more flood-prone homes throughout Galveston County. The resulting \$31 million SRL grant award will be used to elevate as many eligible homes as possible and is being implemented by our team to closeout.

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.

Project Manager (September 2004-October 2007)

Escambia County, Florida | Hurricane Ivan Comprehensive Disaster Program Management

Our team provided comprehensive disaster debris program management services to Escambia County following one of the worst disasters in the Florida panhandle (Hurricane Ivan). Mr. Buri managed the collection and processing of approximately 10 million cubic yards of vegetative and construction and demolition debris, including 1.5 million cubic yards of contaminated sand. Mr. Buri was also instrumental in assisting the County to obtain approval from FEMA to remove debris from private property (as a reimbursable expense).

Client Liaison and Project Manager (December 2007–May 2008)

City of Norman, Oklahoma | Winter Storm Disaster Debris Program Management

Mr. Buri served as the client liaison and project manager following the severe winter storms that impacted the City of Norman in December 2007. Mr. Buri assisted with debris contractor procurement, overall program management and overseeing the debris removal monitoring for the collection and disposal of approximately 750,000 cubic yards of debris.

Project Manager (July 2007–March 2008)

Escambia County, Florida | Escambia County Disaster Debris Management Plan

Mr. Buri assisted with the preparation of a disaster debris management plan for the County that identified responsibilities of key County staff and individuals from other participating jurisdictions. Pivotal to defining roles and responsibilities were two key workshops with all County and non-County stakeholders. Mr. Buri facilitated two half-day workshops, compiled the input and used the information for final plan development. The workshops were the basis for establishing a spirit of cooperation between, the County, participating municipalities, the Florida Department of Transportation, the Santa Rosa Island Authority and the Perdido Key Chamber of Commerce. The specific roles for each group in the event of a disaster were resolved and defined during the course of the meetings.

EM Projects

Project Manager/Lead Facilitator (March 2006-Ongoing)

Houston-Galveston Area Council | Annual Debris Management Workshop Series

Since 2006, our team has provided annual debris management workshops to the Houston-Galveston Area Council (HGAC), where Mr. Buri has served as both project manager and lead facilitator. Over the years, Mr. Buri has also provided debris management technical support on policies and regulations, assisted and provided support to HGAC's Procurement Department, and managed the development of regional disaster debris management plans. Mr. Buri has been valuable to HGAC with his extensive knowledge of all phases of emergency management including disaster recovery operations, sustainability and disaster resiliency, and regional debris forecasting and analysis. Additionally in 2011, Mr. Buri lead HGAC's regional storm debris management assessment (RSDMA) and HGAC's risk and vulnerability analyst (RVA).

Senior Management

Disaster Debris Management Planning

Mr. Buri has provided senior management on several disaster debris management plans. In this role, he oversees the location and assessment of debris management sites, assists in the determination of what type of debris the sites could accommodate, assessing the ingress and egress capabilities, managing environmental issues, and managing the challenges that specific sites would present to the community. Throughout the disaster debris management planning process, Mr. Buri works thoroughly with government leadership to establish and define roles and responsibilities for debris-generating events. Mr. Buri has managed the completion of disaster debris management plans for the following jurisdictions:

- Brazoria County, Texas
- Denton County, Texas
- City of Grand Prairie, Texas
- Collin County, Texas
- City of Mansfield, Texas
- City of Mesquite, Texas

Senior Management (March-November 2010)

City of Corpus Christi, Texas | Hurricane Emergency Operations Plan

Mr. Buri provided senior management to the development of a hurricane emergency operations plan for the City of Corpus Christi, Texas. The plan was development to ensure operational readiness for the City to respond to a hurricane. This plan serves as a tool for lead departments and each coordinating City department to follow preand post-landfall to manage emergency efforts. The plan outlines specific roles and responsibilities based on emergency management principles and best practices. Our team also developed a training program to make sure all departments understood their roles and responsibilities during a catastrophic event.

Senior Management (October 2010-February 2012)

Montgomery County, Texas | Recovery Operations Plan

Mr. Buri provided management to Montgomery County in the development of a recovery operations plan that will speed restoration of vital services and provide needed assistance to county residents following a disaster.

Client Liaison (December 2008–June 2009)

Fort Bend County, Texas | Multi-Year Training and Exercise Program

Mr. Buri served as the client liaison to Fort Bend County for a project designed to develop a multi-year training and exercise plan (MTEP) in accordance with guidelines provided by the U.S. Department of Homeland Security (DHS) National integration Center.

The goal of the project was to bring together participants from various disciplines within the County including emergency management, health and human services, fire operations, law enforcement, hazardous materials, emergency medical services, administration and public works to identify unmet training and exercise needs and capture and place upon a working calendar initiatives the County desires to accomplish within the next three years.

Project Manager (July-August 2007)

City of Amarillo, Texas | Continuity of Operations Plan

Mr. Buri served as the project manager for the City's continuity of operations (COOP) plan. Based on industry standards, best practices and lessons learned, the goal of the City-wide COOP was to prepare each department for the operational impact of a public health crisis, which could substantially reduce the City's workforce for an extended period of time and threaten the City's ability to maintain service levels.

Following plan development, Mr. Buri served as the firm's lead facilitator for a tabletop exercise, which was designed to test the plan's effectiveness in a risk free environment over a three hour period. The exercise involved approximately 60 participants representing 11 City departments including finance, information technology, public works, public safety and fire and rescue. The exercise scenario involved a pandemic flu event affecting 40 percent of the City's workforce, and a tornado striking the Amarillo Service Center creating a denial of access to facilities. Mr. Buri is also involved in performing an update to the City's existing hazard mitigation plan to reflect many of the new hazards identified following Hurricane Katrina.

Project Manager (July-August 2007)

City of Amarillo, Texas | Continuity of Operations Workshop

Mr. Buri served as member of the project team for the design and delivery of a communitywide business continuity plan (BCP) workshop for approximately 150 participants from the Amarillo area under a compressed timeframe – roughly 6 weeks. The City sponsored the workshop and invited community representatives from private industry, regional government, education and healthcare. The BCP workshop focused on the fundamentals of emergency preparedness and business continuation based on industry standards and best practices.

Regional Manager (January 2007-February 2008)

Texas Tech University | Business Impact Analyst

Located in Lubbock, Texas and the seasonal home to approximately 24,000 students and faculty, Texas Tech retained our team's information technology (IT) disaster recovery consultants to perform a business impact analysis to help the University better understand its risks and vulnerabilities such as the loss or breach of its information technology infrastructure. The Texas Tech project was composed of several phases and included the Health Science Center, the University system and the University itself. During the initial phase, Mr. Buri provided support to help the University focus on defining mission critical business functions and prioritizing the restoration of systems in the event of a disaster. Following this, Mr. Buri participated in a physical facility inspection at the University's data centers to assess risks.



Richard Hainje Senior Advisor, Post Disaster Programs

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

EDUCATION

Mid American Nazarene University Bachelor of Arts, Management and Human Relations, 2008

Killian College Associate of Science, Fire Science, 1994

AREA OF EXPERTISE

- Policy/Government Affairs
- Local, State, and Federal Disaster Response and Recovery Funding
- Post-Disaster Emergency
 Housing
- Grant Writing, Administration, and Implementation
- Regional Response
- Commodity Distribution
- Homeland Security
- Emergency Management and Response

GRANT EXPERIENCE

- FEMA Public Assistance
- Hazard Mitigation Grant
 Program
- Community Development Block
 Grant Program

TRAINING/CERTIFICATIONS

- Incident Command System
- Extensive Chief Fire Officer
 National Fire Academy Course
 Work
- Former Emergency Medical Technician

YEARS OF EXPERIENCE

30 years

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

Financial Recovery Services Projects

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.

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.

Response and Recovery Projects

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 the 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 Debris Consultant and Advisor (October 2012-December 2012)

Multiple Cities and Towns in Connecticut, including the City of Hartford | Hurricanes Irene and Sandy, Winter Storm Alfred Disaster Debris Program Management

After Hurricane Irene, Hurricane Sandy, and Winter Storm Alfred, Mr. Hainje worked directly with Hartford, West Hartford, Manchester, Enfield, Danbury, Greenwich, Fairfield, New London, and several more communities on their debris management activities. Mr. Hainje traveled the state extensively during these operations, working with and advising public officials in more than 25 communities.

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.



Anne Cabrera Deputy Director, Post Disaster Programs

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 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 severed 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

YEARS OF EXPERIENCE

13 Years

AREA OF EXPERTISE

- FEMA Compliance Monitoring
- FEMA Reimbursement
- Disaster Debris Management
- Reimbursement Policies and Procedures
- Data Management
- Invoice Reconciliation
- Database Systems
- Project Staffing
- Multiagency Coordination
 GRANT EXPERIENCE
- FEMA PA DISASTERS
- 4337 Hurricane Irma
- 4332 Hurricane Harvey
- 4283 Hurricane Matthew
- 4241 SC Flooding
- 4240 CA Wildfires
- 4223 TX Severe Storms
- 4165 GA Winter Storm
- 4145 CO Flooding
- 4087 Hurricane Sandy
- 4084 Hurricane Isaac
- 4029 TX Wildfires
- 4024 Hurricane Irene
- 4106 CT Winter Storm
- 3268 NY Snowstorm
- 1791 Hurricane Ike
- 1786 Hurricane Gustav
- 1676 MO Winter Storms
- 1679 FL Tornados
- 1609 Hurricane Wilma
- 1602 Hurricane Katrina

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–Ongoing)

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.

PA Consulting/Debris Subject Matter Expert (November 2013–April 2014)

Boulder County, Colorado | 2013 Flooding-PA Consulting Services

Ms. Cabrera provided technical assistance and subject matter expertise to Boulder County, Colorado, following the devastating floods that occurred in September 2013, causing extensive damage throughout Boulder County and surrounding communities. Ms. Cabrera focused on the debris removal efforts, first assisting with the

gathering of the documentation for and development of the Category A PWs and later assisting with management of private property debris removal and public right-of-way debris removal monitoring programs.

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.

In 2010, Ms. Cabrera assisted with debris forecasting based on scenarios ranging from a tropical storm through a Category 5 hurricane and determining anticipated cubic yards of debris and debris site requirements based on those numbers. Six regional meetings with a total of 31 municipalities overall were facilitated to create buy-in in multi-jurisdictional coordination for use of debris management sites. The team identified potential debris management sites in six regions, narrowing the list to 30 sites total (the top five most promising in each region); the sites were evaluated by site assessment and ranked for use. The team created lease documents for the County to use when leasing property from a private landowner for use as a debris management site. A report on options for final disposal capacity including in county and out-of-county landfills and their capacity to accept debris as well as potential recycling options was provided in addition to a final report study and an all-region meeting to present the findings.

Data Reconciliation Management (February 2013–January 2014)

New Jersey Department of Environmental Protection | Hurricane Sandy Waterways Debris Removal Program Management

Following Hurricane Sandy, Ms. Cabrera supported data management activities associated with the waterways debris removal effort. Ms. Cabrera also provided invoice reconciliation.

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.

Data Reconciliation Management (October 2005–February 2012)

City of Fort Lauderdale, Florida | Hurricane Wilma Grant Management Recovery Services

Immediately following Hurricane Wilma in 2005, Ms. Cabrera supported data management activities associated with the debris collection effort in the City of Fort Lauderdale, FL. After the initial recovery efforts, Ms. Cabrera continued to work with the City of Fort Lauderdale for the next six years through multiple State and FEMA audits. Based on lessons learned, she helped the City of Fort Lauderdale to develop after action reports and a list of best practices should they be impacted by another disaster in the future. Ms. Cabrera worked closely with City staff, the assigned State PA Coordinator and the FEMA review team to help gather the necessary documentation and close out projects from the 2005 storm season.

Data Manager (October 2005–September 2008)

City of Plantation, Florida | Hurricane Wilma Disaster Recovery Operations

Ms. Cabrera performed data management activities for the City of Plantation, FL following Hurricane Wilma. This included designing and implementing quality assurance and quality control processes for the review and verification of field and debris contractor-provided data in support of invoices to ensure accurate invoice reconciliation. Ms. Cabrera worked closely with the City Grant Administrator to support the execution of the Stafford Act PA Grant Program and participated in the project closeout along with the Florida State PA Coordinator and FEMA, where she represented the interests of the City of Plantation.

Hurricane Ike, Hurricane Irene, and Winter Storm Alfred Disaster Recovery Assistance

Ms. Cabrera was heavily involved in our team's disaster recovery efforts during the 2008 and 2011 hurricane seasons as well as projects related to the Texas severe drought and wildfires where she primarily provided data management activities associated with the debris collection effort. Listed below are a number of clients Ms. Cabrera supported:
- Alamo, City of, Texas
- Alvin, City of, Texas
- Angleton, City of, Texas
- Bastrop County, Texas
- Beaufort, City of, North Carolina
- Bellaire, City of, Texas
- Bristol, City of, Connecticut
- Cameron County, Texas
- Central, City of, Louisiana
- Connecticut Department of Transportation
- Connecticut, State of
- Dare County, North Carolina
- Duck, Town of, North Carolina
- Fort Bend County, Texas
- Galveston, City of, Texas
- Galveston County, Texas
- Hardin County, Texas
- Harris County, Texas
- Hartford, City of, Connecticut
- Henrico County, Virginia
- Hidalgo County, Texas

- Houston, City of, Texas
- Iberville Parish, Louisiana
- Jamaica Beach, City of, Texas
- Kill Devil Hills, Town of, North Carolina
- Kitty Hawk, Town of, North Carolina
- La Marque, City of, Texas
- Lenoir County, North Carolina
- Manchester, City of, Connecticut
- Manteo, Town of, North Carolina
- Martin County, North Carolina
- Nags Head, Town of, North Carolina
- Onslow County, North Carolina
- Pasadena, City of, Texas
- Richlands, Town of, North Carolina
- Seabrook, City of, Texas
- Southern Shores, Town of, North Carolina
- South Windsor, City of, Connecticut
- Sugarland, City of, Texas
- Virginia Department of Transportation
- Weslaco, City of, Texas
- West University Place, City of, Texas



Oliver Yao Senior Management Team

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

YEARS OF EXPERIENCE

12 Years

AREA OF EXPERTISE

- FEMA Reimbursement and Audit Support
- Disaster Debris Management
- Data Management
- FEMA-Compliant Disaster Planning
- RecoveryTrac[™] ADMS
- Emergency Management Planning

GRANT EXPERIENCE

• FEMA PA

DISASTERS

- 4337 FL Hurricane Irma
- 4332 TX Hurricane Harvey
- 4283 FL Hurricane Matthew
- 4240 CA Valley Fire
- 4223 TX Flooding
- 4166 SC Winter Storm
- 4145 CO Flooding
- 4155 SD Winter Storm
- 4145 CO Flooding
- 4086 Hurricane Sandy
- 4080 Hurricane Isaac
- 4029 TX Wildfires
- 4024 Hurricane Irene
- 1791 Hurricane Ike
- 1786 Hurricane Gustav
- 1780 Hurricane Dolly
- 1679 Tornadoes
- 1676 MO Winter Storms
- 1665 NY Snowstorm
- 1603 Hurricane Katrina

EDUCATION

Rollins College, Crummer School of Business Master of Business Administration, 2006

Rollins College Bachelor of Arts, Economics, 2003 aforementioned communities to provide program management and disaster 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.

Senior Management and Data Oversight (May 2015–July 2015)

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–June 2015)

Sarasota County, Florida | Pre-Event Disaster Planning Services

Mr. Yao served as a debris management subject matter expert and assisted Sarasota County, Florida with the development of their scope of services for disaster debris removal services. As part of the County project team, Mr. Yao also assisted in responding to vendor questions and developing an analysis of vendor rates.

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.

Debris Management Consultant (March 2015–August 2015)

City of Sarasota, Florida | FEMA-Compliant Disaster Debris Management Plan

The City of Sarasota, Florida requested Tetra Tech's assistance to update their DDMP to meet FEMA requirements under the FEMA PAAP Pilot Program. Mr. Yao assisted the City in updating the City's plan to meet FEMA guidelines as well as industry best practices. As a result, the City's DDMP was approved by FEMA as compliant under the FEMA PAAP Pilot Program.

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.

Senior Management and Data Oversight (March 2014–October 2014)

Boulder County, Colorado | Severe Flooding Disaster Debris Program Management

Mr. Yao provided senior management oversight and operational support to the Boulder County, Colorado debris management program. This program presented the unique challenge of removing debris from streams where there was limited access. Mr. Yao also provided integrity monitoring of data in support of consistent project deliverables.

Debris Subject Matter Expert (March 2014– September 2014)

Montgomery County, Pennsylvania | Multi-Jurisdictional DDMP

Mr. Yao served as a debris subject matter expert and supported Montgomery County in establishing and implementing a multi-jurisdictional debris management planning program. Mr. Yao 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. Mr. Yao 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 (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.

Regional Data Manager (February 2013–January 2014)

New Jersey Department of Environmental Protection | Hurricane Sandy Waterways Debris Removal Program Management

Mr. Yao provided data management and oversight of the application of ADMS technology in both the north and south regions of the state as part of long-term recovery efforts to remove disaster debris from waterways throughout the state.

Senior Management Oversight (October 2013–December 2013)

City of Rapid City, South Dakota | Winter Storm Atlas Debris Program Management

Mr. Yao provided senior management oversight for debris monitoring operations in the City of Rapid City, South Dakota. This included the application of our RecoveryTrac[™] ADMS handhelds to monitor and document debris removal activities.

Data Manager (April 2013–August 2013)

City of Sioux Falls, South Dakota | Severe Winter Storm Debris Program Management

Mr. Yao was responsible for supporting all data management activities, including the administration of ADMS technology to document debris and hazard removal efforts. During the course of recovery operations, our team documented the removal of approximately 87,000 cubic yards of debris and nearly 27,000 hanging limbs and leaning trees.

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.

Data Manager (November 2012–January 2013)

Borough of Sayreville, New Jersey | Hurricane Sandy Disaster Debris Program Management Mr. Yao served as data manager for the Borough of Sayreville following Hurricane Sandy, where our ADMS technology was utilized and expedited clean-up and recovery efforts for the Borough.

Regional Data Manager (October 2012–December 2012)

State of Connecticut | Hurricane Sandy Disaster Debris Program Management

Following Hurricane Sandy, Mr. Yao served as the regional operations manager for the State of Connecticut. In this role, he oversaw data management and field operations for the statewide operation that cleared and collected debris from the right-of-way through the impacted region following the storm's path.

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.

Debris Management Consultant (June 2012–August 2012)

Lake County, Florida | Pre-Event Disaster Planning Services

Our team has performed disaster planning and recovery efforts in Lake County since 2005 and assisted the County with monitoring efforts following Hurricane Charley and the 2007 Groundhog Day Tornadoes. As a result of this relationship, the County tasked our team with assisting in the development of a pre-positioned debris contractor request for proposal (RFP). Mr. Yao worked with the County to develop a scope of work and technical specifications for the debris contractor RFP.

Data Manager (August–December 2011)

Henrico County, Virginia | Hurricane Irene Disaster Debris Program Management

Mr. Yao assisted Henrico County with FEMA compliance and reimbursement for more than 22,500 tons of disaster debris; 109 hazardous tree removals; and 13,227 hazardous hanger removals in response to Hurricane Irene. Compliance documentation consisted of correlating scale weight tickets to load tickets, managing hazardous tree and hanger photo documentation, and developing a final data export of all documentation.

Data Manager (August–December 2011)

Dare County, North Carolina | Hurricane Irene Debris Management Services

In response to Hurricane Irene, Mr. Yao oversaw the data entry, tabulation, and organization of collection and disposal data into FEMA-required formats for Dare County. He also assisted Dare County with contractor invoice reconciliation efforts, which required the separation of tickets by funding source (FHWA ER Program versus FEMA PA Grant Program).

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.

Emergency Management Consultant (September 2007–March 2010)

Escambia County, Florida | FEMA-Compliant Disaster Debris Management Plan

When Mr. Yao is not supporting response and program management activities, he assists in the development of FEMA-compliant disaster debris management plans (DDMP). He was part of the project team that helped develop the first Florida FEMA-approved DDMP for Escambia County.

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.



Financial Information

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.

Fed Tax ID: 95-4148514 DUNS: 080106449

UNITED STATES SECURITIES AND EXCHANGE COMMISSION Washington, D.C. 20549

FORM 10-K

(Mark One)	
\mathbf{X}	ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
	For the Fiscal Year Ended October 1, 2017
	or
	TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
	For the Transition Period from to
	Commission File Number 0-19655

TETRA TECH, INC.

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

95-4148514

(I.R.S. Employer Identification No.)

The NASDAQ Stock Market LLC

(Name of exchange)

3475 East Foothill Boulevard, Pasadena, California 91107 (Address of principal executive offices) (Zip Code)

(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Common Stock, \$.01 par value (Title of class)

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 if 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 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. \Box

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.

(626) 351-4664

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.

/s/ PRICEWATERHOUSECOOPERS LLP

PricewaterhouseCoopers LLP Los Angeles, California November 20, 2017

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TETRA TECH, INC. Consolidated Balance Sheets (in thousands, except par value)

Current sasets: Cannot and cash equivalents S 189,075 S 160,459 Accounts receivable – net 714,336 714,336 714,336 714,336 Property and equipment – net 13,112 114,371 114,371 Total current assets 1,042,023 955,428 955,428 Property and equipment – net 56335 67,827 Investments in and advances to unconsolidated joint ventures 2,700 2,064 Goodwill 740,886 717,958 5 Intangible assets – net 26,688 48,962 Deferred income taxes 1,763 630 Other long-term assets 31,850 27,880 Total assets 2 1,902,745 5 LIABILITIES AND EQUITY 2 1,902,745 5 1,800,779 Current liabilities: 3 1,850 12,814,703 443,408 129,184 Billings in excess of costs on uncompleted contracts 117,459 58,215,100 15,588 15,5100 15,5100 15,588 15,5100 143,408 129,	ASSETS		October 1, 2017		October 2, 2016
S 189,975 S 160,459 Accounts receivable - net 788,767 714,336 Prepid express and other current assets 49,669 46,262 Income taxes receivable 13,312 14,371 Total current assets 2,000 2,064 Goodwill 740,886 717,988 Investments in and advances to unconsolidated joint ventures 2,000 2,064 Goodwill 740,886 717,988 Intagible assets - net 2,668 48,962 Other long-term assets 11,630 6300 Total assets 1,902,745 \$ 1,800,779 LABILITIES AND EQUITY 5 1,800,779 Current liabilities: 740,886 717,988 Accrued compensation 143,408 129,184 Billings in excess of costs on uncompleted contracts 117,493 \$ 1,800,779 Current liabilities 2,024 4,296 Other current inscriptions of long-term debt 15,588 15,510 Current contingent earn-out liabilities \$ 143,040 129,184	Current assets:			1	
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Total current assets 1.042.023 935.428 Property and equipment - net 56.835 67.827 Investments in and advances to unconsolidated joint ventures 2,700 2,064 Goodwill 740.886 717.988 Intangible assets - net 26.688 48.962 Deferred income taxes 1,763 630 Other long-term assets 31.850 27.880 Total assets 1,902,745 \$ 1.800,779 Current liabilities:	Income taxes receivable		13,312	5	14.371
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Other long-term assets 31,850 27,880 Total assets \$ 1,902,745 \$ 1,800,779 LIABILITIES AND EQUITY Current liabilities: Accounts payable \$ 177,638 \$ 177,638 \$ 158,773 Accured compensation 143,408 129,184 Billings in excess of costs on uncompleted contracts 117,499 88,223 Current portion of long-term debt 15,588 15,510 Current liabilities 2,024 4,296 Other corningent carn-out liabilities 81,511 85,100 Total current liabilities \$ 31,851 85,100 Total current liabilities \$ 31,261 60,348 Long-term debt 31,251 831,511 Long-term debt 31,251 50,975 53,980 Commitments and contingencies (Note 17)	Deferred income taxes		1,763		630
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Accounts payable \$ 177,638 \$ 158,773 Accound compensation 143,408 129,184 Billings in excess of costs on uncompleted contracts 117,499 88,223 Current portion of long-term debt 2,024 4,296 Other current liabilities 2,024 4,296 Other current liabilities 81,511 85,100 Total current liabilities 537,668 481,086 Deferred income taxes 43,781 60,348 Long-term debt 341,283 331,501 Long-term contingent eam-out liabilities 414 4,461 Other long-term liabilities 50,975 53,980 Common stock – Authorized, 2,000 shares of \$0.01 par value; no shares issued and outstanding at October 1, 2017 and October 2, 2016 - - Common stock – Authorized, 150,000 shares of \$0.01 par value; issued and outstanding, 55,873 and 57,042 559 570 Additional paid-in capital 193,835 260,340 Accurrent earnings 832,559 736,357 Tern botokholders' equity 928,453 869,259 Noncontrolling interests	Current liabilities:				The second s
Accrued compensation 143,408 129,184 Billings in excess of costs on uncompleted contracts 117,499 88,223 Current portion of long-term debt 15,588 15,510 Current contingent cam-out liabilities 2,024 4,296 Other current liabilities 81,511 85,100 Total current liabilities 81,511 85,100 Deferred income taxes 437,81 66,348 Long-term debt 341,283 331,501 Long-term contingent eam-out liabilities 414 4,461 Other long-term debt 50,975 53,980 Common stock – Authorized, 2,000 shares of \$0.01 par value; no shares issued and outstanding at October 1, 2017 and October 2, 2016 - - Curmon stock – Authorized, 150,000 shares of \$0.01 par value; issued and outstanding, 55,873 and 57,042 559 570 Additional paid-in capital 193,835 260,340 - - Accurumulated other comprehensive loss (98,500) (128,008) 832,559 736,357 Teth stockholders' equity 928,623 869,259 101 144 Noncontrolling	Accounts payable	s	177.638	s	158,773
Billings in excess of costs on uncompleted contracts 117,499 88,223 Current portion of long-term debt 15,588 15,510 Current contingent eam-out liabilities 2,024 4,296 Other current liabilities 81,511 85,100 Total current liabilities 537,668 481,086 Deferred income taxes 43,781 60,348 Long-term debt 341,283 331,501 Long-term contingent eam-out liabilities 414 4,461 Other long-term liabilities 50,975 53,980 Commitments and contingencies (Note 17) Equity: 7017 and October 2, 2016 - Preferred stock – Authorized, 2,000 shares of \$0.01 par value; no shares issued and outstanding at October 1, 2017 and October 2, 2016, respectively 559 570 Additional paid-in capital 193,835 260,340 - Accumulated other comprehensive loss (98,500) (128,008) 822,559 736,357 Tetra Tech stockholders' equity 928,624 869,259 Noncontrolling interests 822,559 736,357 Tetra Tech stockholders' equity 928,624 869	Accrued compensation		143,408	2	129,184
Current portion of long-term debt 15,588 15,510 Current contingent carn-out liabilities 2,024 4,296 Other current liabilities 81,511 85,100 Total current liabilities 537,668 481,086 Deferred income taxes 43,781 60,348 Long-term debt 341,283 331,501 Long-term debt 341,283 331,501 Long-term liabilities 50,975 53,980 Commitments and contingencies (Note 17) 50,975 53,980 Commitments and contingencies (Note 17) - - Equity: - - - Preferred stock – Authorized, 2,000 shares of \$0.01 par value; no shares issued and outstanding at October 1, 2017 and October 2, 2016, respectively 559 570 Additional paid-in capital 193,835 260,340 - Accumulated other comprehensive loss (98,500) (128,008) (128,008) Retained earnings 832,559 736,357 736,357 Tetra Tech stockholders' equity 928,623 869,259 Noncontrolling interests 171 144 </td <td>Billings in excess of costs on uncompleted contracts</td> <td></td> <td>117,499</td> <td></td> <td>88,223</td>	Billings in excess of costs on uncompleted contracts		117,499		88,223
Current contingent earn-out liabilities 2,024 4,296 Other current liabilities 81,511 85,100 Total current liabilities 537,668 481,086 Deferred income taxes 43,781 60,348 Long-term debt 341,283 331,501 Long-term contingent earn-out liabilities 414 4,461 Other long-term liabilities 50,975 53,980 Commitments and contingencies (Note 17) 50,975 53,980 Common stock – Authorized, 2,000 shares of \$0.01 par value; no shares issued and outstanding at October 1, 2017 and October 2, 2016 — — Common stock – Authorized, 150,000 shares of \$0.01 par value; issued and outstanding, 55,873 and 57,042 559 570 Additional paid-in capital 193,835 260,340 193,835 260,340 Accumulated other comprehensive loss (98,500) (128,008) 832,559 736,357 Tetra Tech stockholders' equity 928,453 869,259 736,357 Tetra Tech stockholders' equity 928,624 869,403 Total Liabilities and equity \$ 1907,745 \$ 1807,745	Current portion of long-term debt		15,588		15,510
Other current liabilities 81,511 85,100 Total current liabilities 537,668 481,086 Deferred income taxes 43,781 60,348 Long-term debt 341,283 331,501 Long-term contingent eam-out liabilities 414 4,461 Other long-term liabilities 50,975 53,980 Commitments and contingencies (Note 17) 50,975 53,980 Equity: Preferred stock – Authorized, 2,000 shares of \$0.01 par value; no shares issued and outstanding at October 1, 2017 and October 2, 2016 — — Common stock – Authorized, 150,000 shares of \$0.01 par value; issued and outstanding, 55,873 and 57,042 559 570 Additional paid-in capital 193,835 260,340 Accumulated other comprehensive loss (98,500) (128,008) Retained earnings 832,559 736,357 Tetra Tech stockholders' equity 928,623 869,259 Noncontrolling interests 171 144 Total liabilities and equity 58,143 58,943	Current contingent earn-out liabilities		2,024		4,296
Total current liabilities 537,668 481,086 Deferred income taxes 43,781 60,348 Long-term debt 341,283 331,501 Long-term contingent eam-out liabilities 414 4,461 Other long-term liabilities 50,975 53,980 Commitments and contingencies (Note 17) 50,975 53,980 Equity: Preferred stock – Authorized, 2,000 shares of \$0.01 par value; no shares issued and outstanding at October 1, 2017 and October 2, 2016 - - Common stock – Authorized, 150,000 shares of \$0.01 par value; issued and outstanding, 55,873 and 57,042 559 570 Additional paid-in capital 193,835 260,340 Accumulated other comprehensive loss (98,500) (128,008) Retained earnings 832,559 736,357 Tetra Tech stockholders' equity 928,453 869,259 Noncontrolling interests 171 144 Total liabilities and equity 5 1,902,745 5 1,800,770	Other current liabilities		81,511	1000	85,100
Deferred income taxes43,78160,348Long-term debt341,283331,501Long-term contingent earn-out liabilities4144,461Other long-term liabilities50,97553,980Commitments and contingencies (Note 17)50,97553,980Equity:Preferred stock - Authorized, 2,000 shares of \$0.01 par value; no shares issued and outstanding at October 1, 2017 and October 2, 2016Common 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, respectively559570Additional paid-in capital193,835260,340Accumulated other comprehensive loss(98,500)(128,008)Retained earnings832,559736,357Tetra Tech stockholders' equity928,453869,259Noncontrolling interests171144Total equity928,624869,403Total liabilities and equity\$ 1,902,745\$ 1,800,779	Total current liabilities		537,668		481,086
Long-term debt 341,283 331,501 Long-term contingent eam-out liabilities 414 4,461 Other long-term liabilities 50,975 53,980 Commitments and contingencies (Note 17) Equity: Preferred stock - Authorized, 2,000 shares of \$0.01 par value; no shares issued and outstanding at October 1, 2017 and October 2, 2016 — — 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 559 570 Additional paid-in capital 193,835 260,340 Accumulated other comprehensive loss (98,500) (128,008) Retained earnings 832,559 736,357 Tetra Tech stockholders' equity 928,453 869,259 Noncontrolling interests 171 144 Total equity 928,624 869,403 Total liabilities and equity \$ 1,902,745 \$ 1,800,779	Deferred income taxes		43,781		60.348
Long-term contingent eam-out liabilities4144,461Other long-term liabilities50,97553,980Commitments and contingencies (Note 17)Equity:Preferred stock – Authorized, 2,000 shares of \$0.01 par value; no shares issued and outstanding at October 1, 2017 and October 2, 2016—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, respectively559Additional paid-in capital193,835260,340Accumulated other comprehensive loss(98,500)(128,008)Retained earnings832,559736,357Tetra Tech stockholders' equity928,453869,259Noncontrolling interests171144Total equity928,624869,403Total liabilities and equity\$ 1,902,745\$ 1,800,779	Long-term debt		341,283		331,501
Other long-term liabilities50,97553,980Commitments and contingencies (Note 17)Equity:Preferred stock - Authorized, 2,000 shares of \$0.01 par value; no shares issued and outstanding at October 1, 2017 and October 2, 2016-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, respectively559570Additional paid-in capital193,835260,340Accumulated other comprehensive loss(98,500)(128,008)Retained earnings832,559736,357Tetra Tech stockholders' equity928,453869,259Noncontrolling interests171144Total equity928,624869,403Total liabilities and equity\$1,902,745\$S1,902,745\$1,800,779	Long-term contingent earn-out liabilities		414		4.461
Commitments and contingencies (Note 17) Equity: Preferred stock – Authorized, 2,000 shares of \$0.01 par value; no shares issued and outstanding at October 1, 2017 and October 2, 2016 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 Additional paid-in capital 193,835 260,340 Accumulated other comprehensive loss (98,500) (128,008) Retained earnings 832,559 736,357 Tetra Tech stockholders' equity 928,453 869,259 Noncontrolling interests 171 144 Total liabilities and equity \$ 1,902,745 \$ 1,800,779	Other long-term liabilities		50,975		53,980
Equity:Preferred stock – Authorized, 2,000 shares of \$0.01 par value; no shares issued and outstanding at October 1, 2017 and October 2, 2016— — —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, respectively559570Additional paid-in capital193,835260,340Accumulated other comprehensive loss(98,500)(128,008)Retained earnings832,559736,357Tetra Tech stockholders' equity928,453869,259Noncontrolling interests171144Total equity928,624869,403Total liabilities and equity\$ 1,902,745\$ 1,800,779	Commitments and contingencies (Note 17)				SOUTH STORE
Preferred stock – Authorized, 2,000 shares of \$0.01 par value; no shares issued and outstanding at October 1, 2017 and October 2, 2016———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, respectively559570Additional paid-in capital193,835260,340Accumulated other comprehensive loss(98,500)(128,008)Retained earnings832,559736,357Tetra Tech stockholders' equity928,453869,259Noncontrolling interests171144Total equity928,624869,403Total liabilities and equity\$ 1,902,745\$ 1,800,779	Equity:				
Common stock – Authorized, 150,000 shares of \$0.01 par value; issued and outstanding, 55,873 and 57,042 559 570 Additional paid-in capital 193,835 260,340 Accumulated other comprehensive loss (98,500) (128,008) Retained earnings 832,559 736,357 Tetra Tech stockholders' equity 928,453 869,259 Noncontrolling interests 171 144 Total equity \$1,902,745 \$1,800,779	Preferred stock - Authorized, 2,000 shares of \$0.01 par value; no shares issued and outstanding at October 1, 2017 and October 2, 2016		_		_
Additional paid-in capital 193,835 260,340 Accumulated other comprehensive loss (98,500) (128,008) Retained earnings 832,559 736,357 Tetra Tech stockholders' equity 928,453 869,259 Noncontrolling interests 171 144 Total equity 928,624 869,403 Total liabilities and equity \$ 1,902,745 \$ 1,800,779	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		559		570
Accumulated other comprehensive loss (98,500) (128,008) Retained earnings 832,559 736,357 Tetra Tech stockholders' equity 928,453 869,259 Noncontrolling interests 171 144 Total equity 928,624 869,403 Total liabilities and equity \$ 1,902,745 \$ 1,800,779	Additional paid-in capital		193.835		260.340
Retained earnings 832,559 736,357 Tetra Tech stockholders' equity 928,453 869,259 Noncontrolling interests 171 144 Total equity 928,624 869,403 Total liabilities and equity \$ 1,902,745 \$ 1,800,779	Accumulated other comprehensive loss		(98,500)		(128.008)
Tetra Tech stockholders' equity 928,453 869,259 Noncontrolling interests 171 144 Total equity 928,624 869,403 Total liabilities and equity \$ 1,902,745 \$ 1,800,779	Retained earnings		832.559		736.357
Noncontrolling interests 171 144 Total equity 928,624 869,403 Total liabilities and equity \$ 1,902,745 \$ 1,800,779	Tetra Tech stockholders' equity	_	928,453		869 259
Total equity 928,624 869,403 Total liabilities and equity \$ 1,902,745 \$ 1,800,779	Noncontrolling interests		171		144
Total liabilities and equity \$ 1.902.745 \$ 1.800.779	Total equity	-	928.624		869.403
	Total liabilities and equity	S	1.902.745	S	1 800.779

See accompanying Notes to Consolidated Financial Statements.

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TETRA TECH, INC. Consolidated Statements of Income (in thousands, except per share data)

	Fiscal Year Ended						
		October 1, 2017		October 2, 2016		September 27, 2015	
Revenue	5	2,753,360	S	2,583,469	S	2,299,321	
Subcontractor costs		(719,350)		(654,264)		(580,606)	
Other costs of revenue		(1,680,372)		(1,598,994)		(1,402,925)	
Gross profit		353,638		330,211		315,790	
Selling, general and administrative expenses		(177,219)		(171,985)		(170,456)	
Acquisition and integration expenses		_		(19,548)		_	
Contingent consideration - fair value adjustments		6,923		(2,823)		3,113	
Impairment of goodwill and other intangible assets		_				(60,763)	
Operating income		183,342		135,855	91.00	87,684	
Interest income		729		996		680	
Interest expense		(12,310)		(12,385)	-	(8,043)	
Income before income tax expense		171,761		124,466		80,321	
Income tax expense		(53,844)		(40,613)		(41,093)	
Net income including noncontrolling interests		117,917		83,853		39,228	
Net income from noncontrolling interests		(43)		(70)		(154)	
Net income attributable to Tetra Tech	\$	117,874	s	83,783	\$	39,074	
Earnings per share attributable to Tetra Tech:	La constanti de la constante	The second			-		
Basic	\$	2.07	S	1.44	S	0.64	
Diluted	S	2.04	S	1.42	S	0.64	
Weighted-average common shares outstanding:			-				
Basic	12 Con 19	56,911		58,186		60,913	
Diluted		57,913		58,966		61,532	
Cash dividends paid per share	S	0.38	\$	0.34	S	0.30	

See accompanying Notes to Consolidated Financial Statements.

TETRA TECH, INC. Consolidated Statements of Cash Flows (in thousands)

		Fiscal Year Ended				
	(October 1, 2017		October 2, 2016	5	eptember 27, 2015
Cash flows from operating activities:				1.00		100 33
Net income including noncontrolling interests	S	117,917	S	83,853	s	39,228
Adjustments to reconcile net income to net cash from operating activities:						
Depreciation and amortization		45,756		45,588		44,201
Equity in income of unconsolidated joint ventures		(4,699)		(1,652)		(5,131)
Distributions of carnings from unconsolidated joint ventures		4,052		2,796		5,252
Stock-based compensation		13,450		12,964		10,926
Excess tax benefits from stock-based compensation				(918)		(172)
Deferred income taxes		(9,957)		6,051		8,412
Provision (recovery) for doubtful accounts		2,847		8,082		(1,034)
Impairment of goodwill and other intangible assets		-		-		60,763
Fair value adjustments to contingent consideration		(6,923)		2,823		(3,113)
Lease termination costs and related asset impairment		-		2,946	115	342
Gain on disposal of property and equipment		(103)		(537)		(6,014)
Changes in operating assets and liabilities, net of effects of business acquisitions:		1.2.1.021				
Accounts receivable		(64,781)		9,062		40,345
Prepaid expenses and other assets		(8,317)		3,720		12.970
Accounts payable		18,597		(3.002)		(26.901)
Accrued compensation		13.413		8.434		(7.676)
Billings in excess of costs on uncompleted contracts		28,298		(13.874)		(10,319)
Other liabilities		2.167		(19.321)		(7.143)
Income taxes receivable/payable		(13.725)		(4.995)	10011-002	7.911
Net cash provided by operating activities		137.992		142.020	6.	167 847
Cash flows from investing activities:		101,772	· —	114,040		a wayn y r
Capital expenditures	and the second second	(9.741)		(11.945)		(24.296)
Payments for business acquisitions, net of cash acquired		(8,039)		(81,259)		(083,11)
Changes in restricted cash		(0,000)		(2 519)		4 530
Proceeds from sale of property and equipment		905	-	3.076		10 476
Investments in unconsolidated joint ventures		(85)		(1 368)		
Net cash used in investing activities		(16.960)		(1,508)	-	(71.020)
Cash flows from financing activities:		(10,500)		(74,013)	-	(21,020)
Payments on long-term debt		(733 865)		(148.485)		(75.450)
Proceeds from borrowings		243 553		220 0/0		64 704
Payments of contingent earn-out liabilities		(1310)		(3.251)		(3 100)
Debt pre-payment costs	100 H	(1,212)		(1.035)		(1,157)
Distributions paid to poncontrolling interests		(74)		(482)		(1,437)
Excess tax benefits from stock-based compensation		(24)		(102)		(313)
Repurchases of common stock		(100.000)	-	(00.600)		(100 600)
Net proceeds from issuance of common stock		10 444		(99,300)		(100,500)
Dividends naid		(71,673)		(10,736)		10,823
Net cash used in financing activities		(04 772)		(19,733)		(132.570)
Effast of foreign analyzed and there an and		(94,112)	-	(23,388)	-	(123,379)
Not increase in each and and any instants		3,256		2,516		(5,301)
Net increase in cash and cash equivalents	and state of the state	29,516		25,133	-	12,947
Cash and cash equivalents at beginning of year	-	160,459		135,326		122,379
Cash and cash equivalents at end of year	2	189,975	5	160,459	5	135,326
Supplemental information:						
Casa paka auring me year for:						
	S	11,504	5	12,575	\$	7,323
income taxes, net of refunds of \$2.1 million, \$3.2 million and \$5.4 million	S	72.578	S	35.273	S	23,268

See accompanying Notes to Consolidated Financial Statements.



References

Similar to the services being requested by the Franklin County, 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.

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.

The following projects and references are a representative sample of our experience and accomplishments in performing services that are similar in scope, complexity, and magnitude to the County. Per the County's request, we have provided at least three (3) references on the County's reference form immediately following this section.

PROFESSIONAL REFERENCES

Please provide three (3) current and correct references from clients for similar services.

1. **Company Name:** Volusia County, Florida

Contact Person: Arden Fontaine

City, State: 123 W Indiana Av, Room 402, Deland, FL 32720

Telephone Number: Office (386) 736-5965 x15621 | Cell (386) 717-9224

Email Address: afontaine@volusia.org

Description of goods or services provided: Hurricane Matthew - Debris monitoring & program management / Private road debris removal / Public Assistance (PA) grant management services. Contract Amount: \$1,967,757

Start/End Date of Contract: October 2016–February 2017

2. Company Name: Pinellas County, Florida

Contact Person: Sean Tipton

City, State: 22211 US Hwy 19N, Bldg 1, Clearwater, FL 33765

Telephone Number: <u>Tel. (727) 464-8809 | Mobile (727) 222-0441</u>

Email Address: stipton@co.pinellas.fl.us

Description of goods or services provided: <u>Private Property Debris Removal Monitoring/Interlocal Agreement</u> Coordination / Shared Disposal Site Coordination. Contract Amount: \$1,759,698.00

Start/End Date of Contract: September 2017–Ongoing

3. Company Name: Charlotte County, Florida

Contact Person: John Elias

City, State: <u>7000 Florida Street, Punta Gorda, FL 33950-5798</u>

Telephone Number: Tel. (941) 575-3646

Email Address: john.elias@charlottecountyfl.gov

Description of goods or services provided: Disaster Debris Monitoring / Program Management Technical Resources.

Contract Amount: \$412,000

Start/End Date of Contract: September 2017–February 2018

This document must be completed and returned with your Submittal

FRANKLIN COUNTY-DISASTER DEBRIS MONITORING SERVICES RFP

PROFESSIONAL REFERENCES

Please provide three (3) current and correct references from clients for similar services.

1. **Company Name:** Collier County, Florida

Contact Person: Dan Rodriguez

City, State: <u>3339 Tamiami Trail East, Suite 302, Naples, FL 34112</u>

Telephone Number: Tel. (239)252-2504

Email Address: danrodriguez@colliergov.net

Description of goods or services provided: <u>Total program management/overseeing ROW debris removal/proce</u>ssing, site management and haul-out/private road & gated community debris removal/leaner, hanger and stump removal. Contract Amount: \$5,130,000 (Ongoing Hurricane Irma)

Start/End Date of Contract: 2006–2018

2. Company Name: Beaufort County, South Carolina

Contact Person: Pamela Cobb

City, State: 120 Shanklin Road, Beaufort, SC 29906

Telephone Number: Tel. (843) 255-2721

Email Address: pcobb@bcgov.net

Description of goods or services provided: 24-hour Boots-on-the-Ground Response Time/Comprehensive mapping and debris removal of County waterways/ 300+ Local Monitors Hired, Trained, and Mentored/62,000+ Eligible Trees/1,600,000+ Cubic Yards of Debris. Contract Amount: \$2,486,000

Start/End Date of Contract: October 2016 – April 2017

3. Company Name:

Fort Bend County, Texas

Contact Person: Jeff Braun

City, State: <u>307 Fort Street, Richmond, TX 77469</u>

Telephone Number: Tel. (281) 342-6185

Email Address: Jeff.Braun@fortbendcountytx.gov

Description of goods or services provided: Program Management/Monitoring/Site Permitting/Data Management/ Invoice Reconciliation/Project Documentation/FEMA/TDEM Audit Support. Contract Amount: \$830,000 (Ongoing) – Hurricane Harvey

Start/End Date of Contract: Hurricane Harvey: September 2017 - Ongoing

This document must be completed and returned with your Submittal

Project Profiles







Disaster Debris Monitoring Services Hurricane Matthew



KEY FEATURES

- Debris monitoring and program management
- Private road debris removal
- Public Assistance (PA) grant management services

PROJECT DESCRIPTION

Hurricane Matthew devastated the coastal communities of Volusia County in October 2016, when it made landfall as a Category 2 hurricane and was responsible for one fatality. With 90% of residents left without power, there were numerous reports of downed powerlines, downed trees, and flooded homes, causing chaos throughout the county.

Our team has been supporting Volusia County for many years and was available to assist prior to the storm making landfall as well as in the immediate aftermath. Early estimates of the damage indicated debris amounts totaling over 1 million cubic yards, with thousands of hazardous trees in public roads and debris in waterways. Tetra Tech mobilized a team within hours and began the process of onboarding local debris monitors.

In addition to providing debris monitoring services, Tetra Tech was a crucial part of the operations planning team, providing consulting in the EOC while initial operations were unfolding and helping with special tasks like getting temporary debris sites permitted and putting together the documentation to request FEMA approval of debris collection on private roads. **In total, our team monitored 1,058,962 cubic yards of debris**. Additionally, our team of grant management specialists has assisted in administering FEMA federal grant funding services and grant administration for all categories of work.

CLIENT

Volusia County

LOCATION

Florida

DURATION

October 2016–February 2017

COST

\$1,967,757

SIZE

1,058,962 CY – Hurricane Matthew

REFERENCE

Arden Fontaine Activity Project Manager Volusia County Public Works 123 W Indiana Av, Room 402 Deland, FL 32720 Office: 386-736-5965 x15621 Cell: 386-717-9224 afontaine@volusia.org



Disaster Debris Program Management Hurricane Irma



KEY FEATURES

- Private Property Debris Removal Monitoring
- Interlocal Agreement Coordination
- Shared Disposal Site Coordination

PROJECT DESCRIPTION

Pinellas County is one of the most densely populated counties in Florida. Its low-lying elevation places most its residents in flood zones, putting millions of homes and structures at risk. Although the County avoided a direct hit from Hurricane Irma in September 2017, the storm nonetheless caused widespread power outages and hundreds of tons of disaster debris.

In the immediate aftermath, Pinellas County activated the Tetra Tech team to conduct post-disaster debris monitoring services under a pre-positioned contract. Our management team was on-site within hours of the storm's passing to conduct initial damage assessments and begin monitoring the cleanup process. Over 120 local personnel were hired as debris monitors, documenting over 12,000 loads of debris. This totaled over 380,000 cubic yards of debris removed from County roads. In addition, the County allowed its municipalities to use County disposal locations to ease the burden of long haul distances. Tetra Tech coordinated and tracked the segregation of debris by origin at multiple disposal sites.

CLIENT

Pinellas County

LOCATION

Florida

DURATION

September 2017–Ongoing

COST

\$1,759,698.00

PROJECT TEAM

Simon Carlyle – Regional Project Manager

Bob Gresenz – Project Manager

Owen Chaoran Chen – Data Manager

REFERENCES

Sean Tipton

Public Works – Traffic Engineering

22211 US Hwy 19N, Bldg 1 Clearwater, FL 33765

Tel. (727) 464-8809

Mobile (727) 222-0441

stipton@co.pinellas.fl.us



Disaster Debris Program Management Hurricane Irma



KEY FEATURES

- Disaster Debris Monitoring
- Program Management Technical Resources

PROJECT DESCRIPTION

Low-lying Charlotte County suffered damage as a result of Hurricane Irma, the most powerful storm to make landfall in Florida in a decade. About twothirds of the 160,000 residents in the County were ordered to evacuate. In the immediate aftermath of the storm, debris littered County roads.

The County utilized a pre-positioned contract with Tetra Tech for disaster debris monitoring. Our team immediately mobilized to begin the project ramp-up phase, but Charlotte County initially had a difficult time bringing a debris removal contractor on to perform collection. Tetra Tech subject matter experts worked side-by-side with the Charlotte County team to navigate the process of using their internal force account labor and equipment resources to begin debris collection, come up with a modified field debris monitoring effort to ensure the County had the supporting paperwork necessary while keeping costs in check, and provide technical advice on FEMA reimbursement and requests for funding considerations. Once a debris removal contractor was secured, Tetra tech mobilized a more traditional monitoring staff where a team of 15 personnel were hired at peak to monitor the debris removal process. Utilizing our proprietary ADMS software, RecoveryTracTM, our team monitored the removal of 6,208 tons of debris.

CLIENT

Charlotte County

LOCATION

Florida

DURATION

September 2017–February 2018

SIZE

6,208 Tons

COST

\$412,000

PROJECT TEAM

Anne Cabrera Phil Ivey Paris Atkinson

REFERENCES

John Elias, Maintenance and Operations Manager Charlotte County Government Public Works, Maintenance and Operations Division 7000 Florida Street Punta Gorda, FL 33950-5798 P. (941) 575-3646 F. (941) 575-3653 john.elias@charlottecountyfl.gov



Disaster Debris Management Plan and Debris Monitoring Collier County, FL



PROJECT DESCRIPTION

Hurricane Irma

Following a direct landfall by Hurricane Irma in 2017, Tetra Tech provided total program management for the Collier County debris removal mission. In addition to debris monitoring, we served as the County's representative tasked with overseeing ROW debris removal; processing, site management and haul-out; private road and gated community debris removal; and leaner, hanger and stump removal. At the peak of the project, Tetra Tech employed nearly 200 monitors and over the course of four months and monitored nearly 64,000 loads of debris and over 25,000 leaner and hanger removals. The project is ongoing and being expanded to include work in county-maintained drainage canals and waterways, but to date, Tetra Tech has monitored over 3,000,000 CY of debris.

Hurricane Wilma

In the spring of 2006, nearly six months after Hurricane Wilma struck Collier County, Florida, damage assessments revealed that waterways throughout the County contained storm generated hazardous debris, which caused impediments and obstructions to the natural flow of watershed drainage. Collier County determined that an estimated 47 miles of waterways and canals were affected and required debris removal. Our team was awarded the contract after Collier County observed our specialized work with the Naples Airport during a similar scope of services on the Gordon River. Under contract with Collier County and the regulatory direction of the NRCS, our team successfully managed the environmentally sensitive debris removal operation while providing daily progress reports that included debris concentration maps, debris removal tracking maps that included GPS coordinates, before

CLIENT

Collier County

LOCATION

Florida

DURATION

2006-2018

COST

\$5,130,000 (Ongoing Hurricane Irma)

\$46,823.98 (2016 project)

\$121,876 (2006 project)

SIZE

3,112,104 CY – Hurricane Irma (to date)

SERVICES

- Program Management & Oversight
- GIS Mapping
- Waterway Debris Removal Engineering and Program Management
- Canal Clearance

REFERENCES

Mr. Dan Rodriguez Director Solid and Hazardous Waste Management Division 3339 Tamiami Trail East Suite 302 Naples, FL 34112 Phone: (239)252-2504 Fax: (239) 252-3991

danrodriguez@colliergov.net

and after photographs, and debris quantity tracking spreadsheets. These reports were generated daily and compiled on a weekly basis and discussed at a weekly meeting with representatives from NRCS and Collier County.

Another important function of the monitoring services provided by our team under this engagement was the enforced observance of special considerations set forth by the contract. Special considerations included the preservation of the embankments, the protection of endangered species (mangroves), and the restoration of the natural flow of water.

Since Tetra Tech's work for Collier County after Hurricane Wilma, our team has maintained a true partnership with the County in helping prepare for the next potential event. The County holds an annual War Games to prepare County and municipality staff as well as other agency and private sector partners for what to expect and what actions to take following a hurricane or other disaster event. Tetra Tech has been an active participant in this annual event for years and has helped lead the training for all participants. Tetra Tech also recently completed an update of Collier County's Disaster Debris Management Plan.

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. The County tasked Tetra Tech 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. Tetra Tech used RecoveryTrac[™] to document quantities of debris and provided ADMS units to County code-enforcement staff to assist with damage assessments. Tetra Tech provided daily reports to the County project leadership, and the County was especially appreciative of the timely and accurate information that allowed them to make quick decisions and ultimately conduct an efficient and effective clean-up for Collier County residents.



Disaster Debris Monitoring Services Hurricane Matthew



KEY FEATURES

- 24-hour Boots-on-the-Ground Response Time
- 1,600,000+ Cubic Yards of Debris
- 62,000+ Eligible Trees
- 300+ Local Monitors Hired, Trained, and Mentored
- Comprehensive mapping and debris removal of County waterways

PROJECT DESCRIPTION

The State of South Carolina contains more coastal marshland that any other state in the country, and Beaufort County is home to nearly one-third of that marsh. Following Hurricane Matthew, Tetra Tech was engaged to manage and monitor the surveying, mapping, and documentation of debris removal from Beaufort County's marshland. Tetra Tech staff worked closely with Beaufort County, state, and federal officials to ensure that all environmental protocols were met, regulations were followed, and all waterway debris removal was properly documented and tracked. Prior to that mission, Tetra Tech provided disaster response monitoring services to Beaufort County, South Carolina after Hurricane Matthew devastated the area in October 2016. Within 24 hours, Tetra Tech was on the ground in Beaufort County to assisting with the initial Push Phase of restoring roadway access throughout the county. When the recovery phase began, Tetra Tech employed our proprietary ADMS, RecoveryTrac[™], to facilitate and automate FEMA required documentation as well as provide centralized data storage for the disaster response associated with Hurricane Matthew. RecoveryTrac[™] provided our

CLIENT

Beaufort County

LOCATION

South Carolina

DURATION

October 2016 - April 2017

COST

\$2,486,000

SIZE/CUBIC YARDS

1,609,243

REFERENCE

Pamela Cobb Disaster Recovery Coordinator Beaufort County Solid Waste 120 Shanklin Road Beaufort, SC 29906 Phone: (843) 255-2721 Fax: (843) 255-9480 pcobb@bcgov.net clients with FEMA-compliant tree tickets, photographic documentation, and disposal information required for reimbursement by the federal government.

We also utilized RecoveryTrac[™] to monitor and document the debris collection and removal. The bar code scanner included in RecoveryTrac[™] successfully automated the process of validation of approved debris haulers. In addition, RecoveryTrac[™] generated debris tickets for the debris haulers to gain access to our three TDSRS sites. This eliminated the potential for unauthorized debris entering the TDSRS. At the TDSRS, Tetra Tech made accurate load calls, estimating the cubic yardage of debris contained in the disposal trucks. Debris collection drivers were provided load tickets for their reimbursement.

Tetra Tech successfully monitored hazard reduction of trees leaning more than 30 degrees (leaners) and hanging branches (hangers) located within Beaufort County right-of-way. Tetra Tech hired, trained, mentored, scheduled, mobilized, and managed more than 100 local people as debris monitors. More than 62,000 tree tickets were generated for eligible tree work.

Our team monitored the removal of **over 1.6 million cubic yards of debris for Beaufort County** in reponse to Hurricane Matthew.





Disaster Debris Monitoring and Grant Management Fort Bend County, Texas



KEY FEATURES

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

PROJECT DESCRIPTION

We are our 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

CLIENT

Fort Bend County

LOCATION

Texas

DURATION

Hurricane Harvey: September 2017 - Ongoing

2016 Floods: May 2016 -August 2016

Hurricane Ike: September 2008 – March 2009

COST

\$830,000 (Ongoing) – Hurricane Harvey

\$263,121 - 2016 Flood Event

\$8,585,611 - Hurricane Ike

GRANTS ADMINISTERED

FHWA Emergency Relief

FEMA Pilot Program

REFERENCES

Mr. Jeff Braun Emergency Management Coordinator 307 Fort Street Richmond, TX 77469 Phone: (281) 342-6185

Fax: (281) 238-3459

oem@co-fort-bend.tx.us

Jeff.Braun@fortbendcountytx.gov

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.



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 Florida 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 Franklin 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.



Exhibit E-1: Project Management Areas



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 E-2: Disaster Debris-Generating Event Operational Plan

Time	Task	Deliverables/Milestones
Preparednes	s	
Pre-event (normal conditions)	Meet with the County to review plans and documents	 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 GIS files
H-96	Review capabilities and resources	 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
H-72	Execute responsibilities and activate contracts	 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 Florida Department of Environmental Protection (FDEP) on permitting procedures Estimate equipment requirements and DMS capacity to haul and stage debris Prepare ADMS technology for mobilization
H-48	Monitor storm track and continue preparations	 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	 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-0	ARRIVAL OF NOTICI	E EVENT/INITIATE RESPONSE TO NO-NOTICE EVENT
Response		
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

TETRA TECH

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Time	Task	Deliverables/Milestones
		 Follow up with FDEP on debris permits (if required) Work with the County to establish public information protocols to respond to concerns and comments
H +48	Emergency push/ damage assessment	 Continue emergency push Continue preliminary damage assessment Develop debris cost estimate required for presidential disaster declaration Develop operational plan for disaster-specific issues Refine health and safety plan for disaster-specific issues
H +72	Disaster debris vehicle certification/ site preparation	 Begin hauling truck certification Install ADMS tower monitor infrastructure Train monitors on policies, ADMS, and safety Open public drop-off sites as requested
H +96	Begin debris collection monitoring	 Assign monitors to trucks Assign supervisors to monitors Hold morning and afternoon meeting with County staff and debris hauler Implement QA/QC procedures
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, Florida Division of Emergency Management (FDEM), 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 Mud/silt/sand removal (from storm drains, ditches, etc.) 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 Conclude/review preliminary damage assessments Gather documentation for project worksheet (PW) development

Time	Task	Deliverables/Milestones
		Identify opportunities for mitigationConduct site visits
Project completion	Document turnover/closeout	 Final reconciliation Retainage release Release hard copy files Provide electronic database Assist with PW development Assist the County with long-term reimbursement Audit assistance Appeal support if necessary

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 E-3 shows our chain of command structure, along with associated responsibilities and relationships for key personnel. For more information on our key personnel and resumes please refer to Tab B: Experience.

Exhibit E-3: Chain of Command



TETRA TECH

FRANKLIN COUNTY, FLORIDA

disaster response activities.

TAB E: PROPOSAL MATRIX

- **Project Manager.** Our project manager, Phil Ivey, 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-
- Data Manager. Our data manager, Owen Chen, 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.
- **Cost Recovery Specialist.** Mr. Donald Kunish will serve as the cost recovery specialist to work hand in hand with County personnel, to develop project worksheets for all Category A expenses and documentation.
- 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.
- Fixed Site 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. Fixed site monitors will also be required to keep backup logs and assist in truck certification as needed.
- Environmental Specialist As environmental specialist for Franklin County, Mr. Chris Burns has
 responsibility for environmental permitting, the recommendation and selection of DMS location, and related
 issues. He reports to the project manager and works closely with County's Solid Waste staff to address and
 resolve environmentally sensitive issues.
- GIS Specialist. Mr. Jeffrey Dickerson will be needed to support several functions during debris removal. He
 may be called on to produce maps or overlays as a quality control function of our data manager or project
 manager as custom reports are requested by the County. This may also include field audits or analysis of
 disposal data as needed.
- Supervising Monitor. Our supervising monitor will coordinate actions of field and TDMS monitors. The supervising monitor will also coordinate daily operations with DMS, and logistics of the DMS to ensure efficient traffic flow and proper handling of load tickets that record FEMA data (such as vehicle volume, type of waste, etc.). The supervising monitor will observe vehicles entering and exiting the DMS and make reasonable efforts to ensure vehicles are in compliance with truck certifications. In addition, the supervising monitor will review damage reports, resolve complaints, and compile all necessary reports.
- Billing/Invoice Analyst. As billing/invoice analyst, Ms. Paris Atkinson 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.
- 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.
- 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.

TETRA TECH

RecoveryTrac[™] Automated Debris Management System – Tetra Tech's Alternative to Paper Ticketing

In today's technology-driven society, paper-based systems are quickly becoming obsolete. Recognizing the migration to electronic-based systems, our team has spent years on research and development in an effort to streamline the debris collection documentation process, with a focus on minimizing the cost to our clients while improving the visibility of debris project operations. RecoveryTracTM is the result of these efforts. RecoveryTracTM is a scalable and fully featured disaster management application designed specifically to address the operational challenges faced during a disaster recovery project.

Our proprietary ADMS technology, RecoveryTracTM, is one of only three systems validated by the U.S. Army Corps of

Engineers (USACE). The system provides real-time collection of data and offers multiple solutions to data management, reporting, invoice reconciliation, and project controls that cannot be achieved with a paper-based program.

Tetra Tech has implemented RecoveryTrac[™] ADMS technology on our last 150 FEMA PA-eligible projects. On these projects, our clients and FEMA found this state-of-the-art technology to increase efficiency and improve the management

technology to increase efficiency and improve the management of debris removal efforts.

Owned and operated by Tetra Tech

 Over 6,000 mobile units on-hand and ready for state-wide multi-district mobilizations

TETRA TECH

- Meets USACE specifications for electronic debris monitoring handhelds
- Real-time situation awareness of field resources and efficient direction to support County priorities
- Real-time GIS web services for EOC information and visualization systems
- Capable of collecting data regardless of cellular service
- Automated photograph and GPS capture
- Provides reports and pass map tracking in real-time
- Minimizes chance of fraud through real-time monitoring
- Minimizes data entry and human error
- Expedites invoice reconciliation
- Intuitive and user-friendly

Key Benefits of RecoveryTrac[™]

Ability to Respond. Combined with the on-hand inventory of over 6,000 handheld devices and the ability to rapidly procure additional equipment through preferred vendor relationships, the County can rely on our mobilization strategy for zero-day activations in disasters covering large areas with little or no-notice. *The on-hand inventory can be on-site and ready to use within 24 hours of a notice to proceed,* and additional needs can be met quickly (in most cases, 72 hours or less).

Simple and Intuitive. A key foundation of our mobilization strategy is the ability to quickly hire and train local residents and begin debris removal operations. The mobile application is simple to understand and intuitive, allowing most users to begin using the device once the standard monitor training is completed.

Cost Effective. RecoveryTrac[™] combines the advantage of automation and the desire of our customers to control costs by utilizing widely available commercial equipment and increasing the simplicity of operations.

Reliable and Stable. Based on the Android operating system, RecoveryTrac[™] is secure and reliable. This minimizes the interruptions in field operations due to technical difficulties and reduces the number of support personnel required to maintain the system. Recently, our team simultaneously deployed approximately 6,000 ADMS units in the field following Hurricanes Harvey, Irma, Maria, and the California Wildfires. The use of RecoveryTrac[™] reduces data entry costs and provides real-time project tracking reports to our clients.



Technical Support. RecoveryTrac[™] is designed to be self-repairing when possible; most support needs are resolved by field supervisors who are able to reach field monitors within 15–30 minutes in most cases. In addition, we have dedicated technicians at disposal sites and provide a field service center to maintain and repair equipment.

Real-Time Reporting. The key to successful management of a debris project is the timely availability of relevant information needed to make sound decisions and respond to anomalies before they become issues. Our powerful reporting engine allows the user to monitor contractor performance, track damages, track street-by-street debris removal progress, and identify and resolve potential problems as they happen. The geospatial reporting systems within RecoveryTrac[™] provide real-time information that raises the bar for post-disaster project management.

The RecoveryTrac[™] Process

The steps of the RecoveryTrac[™] process are as follows:

- 1. The process begins with debris hauler truck certification using the handheld devices. Handheld devices are provisioned and assigned to both field and debris site/tower monitors.
- 2. A truck certification form is printed with a unique electronic bar code and provided to the driver as well as our debris site/tower monitor(s).

Even under the harshest conditions where cellular service is not available, RecoveryTracTM was built to comply with U.S. Army Corps of Engineers (USACE) specs using Near Field Communication (NFC) and internal memory to protect and transfer data.

- Field monitors begin a ticket by scanning the truck certification bar code to open a control ticket and then begin to record waypoints (debris pile pick-up locations) on the handheld device as the truck is loaded.
- 4. When the truck is full, the field monitor selects the debris type and scans the control ticket to assign the load a unique number.
- 5. The truck then proceeds to the disposal site. The collection data is uploaded to a server via cellular connection, and using a process called *Look Ahead*, the collection ticket information is made available to the disposal monitor's handheld device before the truck arrives.
- 6. The control ticket is provided to the driver and taken to the DMS, where it is scanned by a debris site/tower monitor.
- 7. The debris site/tower monitor confirms the truck and debris type and enters the load call.
- **8.** Finally, the disposal load ticket is printed, and data is uploaded to the system, where it can be utilized in real-time reporting systems.

Even when there is no cellular connection, the handheld devices continue to operate in connected mode; however, the data is stored on the device until a data connection is restored. The device periodically searches for this connection, and when services are restored, the handheld device automatically uploads the stored ticket data. Exhibit E-4 shows the RecoveryTrac[™] process under normal operating conditions. Collection

FRANKLIN COUNTY, FLORIDA

TAB E: PROPOSAL MATRIX

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:

Disposal

- 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

Hauler

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 applications, 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*.

TETRA TECH

Disposal

0.2012 SATE Tes All Distant





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.

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Exhibit E-6: 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 E-7 and E-8.

Exhibit E-7: Monitoring Locations



Exhibit E-8: 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.

TAB E: PROPOSAL MATRIX



- 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 Florida 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.

FRANKLIN COUNTY, FLORIDA

TAB E: PROPOSAL MATRIX



- 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 E-9: Load Call Estimate Examples



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

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.

governments with recovering from disasters and the subsequent audits, Tetra Tech has developed industryleading 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.

TAB E: PROPOSAL MATRIX

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 E-10: Missed Piles Tracking

Fraud Prevention

Several practices are used to prevent debris haulers from committing fraud both in the field and remotely by realtime 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.

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TAB E: PROPOSAL MATRIX



 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 E-11: 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.







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 E-13: 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 smart phone. 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.

FRANKLIN COUNTY, FLORIDA

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TAB E: PROPOSAL MATRIX





Contractor Reconciliation

RecoveryTrac[™] 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 RecoveryTrac[™] 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 RecoveryTrac[™]. 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 RecoveryTrac[™] project is outlined below:

Exhibit E-15: Contractor Invoice Reconciliation Process



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



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.

List of Costs Associated with Personnel

Per the County's request for proposals we have included the Hourly Rate Schedule Form under **Tab H: Required Documents.**



Licenses

Following this section we have provided the County with our State of Florida Good Standing Certificate.

State of Florida **Department of State**

I certify from the records of this office that TETRA TECH, INC. is a Delaware corporation authorized to transact business in the State of Florida, qualified on April 28, 1988.

The document number of this corporation is P19034.

I further certify that said corporation has paid all fees due this office through December 31, 2018, that its most recent annual report/uniform business report was filed on January 3, 2018, and that its status is active.

I further certify that said corporation has not filed a Certificate of Withdrawal.

Given under my hand and the Great Seal of the State of Florida at Tallahassee, the Capital, this the Fifth day of February, 2018



Ken Detren Secretary of State

Tracking Number: CU1493210055

To authenticate this certificate, visit the following site, enter this number, and then follow the instructions displayed.

https://services.sunbiz.org/Filings/CertificateOfStatus/CertificateAuthentication



Insurance

In compliance with the County's Request for Proposals, following this page we have provided the required evidence of insurance coverage.

ACORD	

CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YYYY) 09/26/2017

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

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CERTIFICATE HOLDER

CANCELLATION

Evidence of Insurance

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Aon Risk Insurance Services West Inc.

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Required Documents

Following this section, we have provided the following required documents:

- Proposal Submittal Checklist
- Proposer's Certification Form
- Addendum Acknowledgement
- Drug Free Workplace
- Sworn Statement on Public Entity Crimes
- Affidavit of Non Collusion and of Non Interest of Franklin County Employee
- M/WBE Participation Statement
- Vendor Information
- W-9 Form
- Hourly Rate Schedule

Section 8 – Required Forms

PROPOSAL SUBMITTAL CHECKLIST

- X Proposer's Certification
- __X __Addendum Acknowledgement
- X____Drug-Free Workplace Certificate
- _____Sworn Statement Pursuant to Section 287.133 (3)(a) F.S. in Public Entity Crimes
- X____Affidavit of Non-Collusion
- X Professional References
- X____MWBE Participation Statement
- X Vendor Information
- X_____W-9 Form
- X Hourly Rate Schedule

Submission of one (1) original marked "ORIGINAL", five (5) identical paper copies, and one (1) electronic copy in pdf format on CD.

BY:

Bidder

(Authorized Signature)

<u>9/12/2018</u> (Date)

<u>Jonathan Burgiel | Business Unit President - Tetra Tech</u> Disaster Recovery (Print Name)

PROPOSER'S CERTIFICATION

I have carefully examined the Request for Proposals, Instructions to Proposers, General and/or Special Conditions, Specifications, RFP Proposal and any other documents accompanying or made a part of this invitation.

I hereby propose to furnish the goods or services specified in the Request for Proposal at the prices or rates as finally negotiated. I agree that my proposal will remain firm for a period of up to ninety (90) days in order to allow the County adequate time to evaluate the proposal. Furthermore, I agree to abide by all conditions of the proposal.

I certify that all information contained in this RFP is truthful to the best of my knowledge and belief. I further certify that I am a duly authorized to submit this RFP on behalf of the Proposer / Consultant as its act and deed and that the Proposer / Consultant is ready, willing and able to perform if awarded the contract.

I further certify that this RFP is made without prior understanding, Contract, connection, discussion, or collusion with any person, firm or corporation submitting a RFP for the same product or service; no officer, employee or agent of the Franklin County Board of County Commissioners or of any other proposer interested in said RFP; and that the undersigned executed this Proposer's Certification with full knowledge and understanding of the matters therein contained and was duly authorized to do so.

I further certify that having read and examined the specifications and documents for the designated services and understanding the general conditions for contract under which services will be performed, does hereby propose to furnish all labor, equipment, and material to provide the services set forth in the RFP.

I hereby declare that the following listing states any clarifications, any and all variations from and exceptions to the requirements of the specifications and documents. The undersigned further declares that the "work" will be performed in strict accordance with such requirements and understands that any exceptions to the requirements of the specifications and documents may render the proposal non-responsive.

NO EXCEPTIONS ALLOWED AFTER THE RFP IS SUBMITTED:

Please check one: X I take NO exceptions.

Exceptions:

Tetra Tech, Inc.	
NAME OF BUSINESS	
Jonal Brizel	

AUTHORIZED SIGNATURE **Business Unit President -**

Jonathan Burgiel, Tetra Tech Disaster Recovery NAME, TITLE, TYPED

2301 Lucien Way, Suite 120 MAILING ADDRESS

Maitland, FL 32751

CITY, STATE & ZIP CODE

Tel. (407) 803-2551 / Fax (321) 441-8501 **TELEPHONE NUMBER / FAX NUMBER**

95-4148514

FEDERAL IDENTIFICATION #

STATE OF FLORIDA COUNTY OF <u>Orange</u> Betty.Kamara@tetratech.com E-MAIL ADDRESS

September The foregoing instrument was acknowledged before me this 12 day of _____, 20_18_byJonathan Burgiel, who is personally known to me or who has produced as identification and who did take an oath.

My Complesion Expires Notary Public State of Florida Sandra M Fajardo My Commission GG 191794 Expires 03/09/2022

Mardo

Notary Public

This document must be completed and returned with your Submittal

FRANKLIN COUNTY-DISASTER DEBRIS MONITORING SERVICES RFP

ADDENDUM ACKNOWLEGEMENT

I have carefully examined this Request for Proposal (RFP) which includes scope, requirements for submission, general information and the evaluation and award process.

Addendum #

I acknowledge receipt and incorporation of the following addenda, and the cost, if any, of such revisions has been included in the price of the proposal.

Addendum # <u>None</u> Date: _____

Addendum # _____ Date: _____

Addendum # Date: _____

Date:

<u>9/12/2018</u> (Date)

Business Unit President -Jonathan Burgiel, Tetra Tech Disaster Recovery (Print Name)

STATE OF FLORIDA COUNTY OF <u>Orange</u>

September The foregoing instrument was acknowledged before me this <u>12</u> day of <u>18</u> by <u>Jonathan Burgiel</u>, who is personally known to me or who has produced as identification and who did take an oath.

My Commission Expires:

Notary Public

Notary Public State of Florida Sandra M Fajardo My Commission GG 191794 Expires 03/09/2022

DRUG FREE WORKPLACE

I, the undersigned, in accordance with Florida Statute 287.087, hereby certify that,

(print or type name of firm) Tetra Tech, Inc.

- Publishes a written statement notifying that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the Workplace named above and specifying actions that will be taken against violations of such prohibition.
- Informs employees about the dangers of drug abuse in the workplace, the firm's policy of maintaining a drug free working environment, and available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug use violations.
- Gives each employee engaged in providing commodities or contractual services that are under bid or proposal, a copy of the statement specified above.
- Notifies the employees that as a condition of working on the commodities or contractual services that are under bid or proposal, the employee will abide by the terms of the statement and will notify the employer of any conviction of, please or guilty or nolo contendere to, any violation of Chapter 1893, or of any controlled substance law of the State of Florida or the United States, for a violation occurring in the workplace, no later than five (5) days after such conviction, and requires employees to sign copies of such written statement to acknowledge their receipt.
- Imposes a sanction on, or requires the satisfactory participation in, a drug abuse assistance or rehabilitation program, if such is available in the employee's community, by any employee who is so convicted.
- Makes a good faith effort to continue to maintain a drug free workplace through the implementation of the Drug Free Workplace program.
- "As a person authorized to sign this statement, I certify that the above named business, firm or corporation complies fully with the requirements set forth herein".

September The foregoing instrument was acknowledged before me this <u>12</u> day of __, 20<u>__18</u> by <u>Jonathan Burgiel</u>, who is personally

Business Unit President -Jonathan Burgiel, Tetra Tech Disaster Recovery (Print Name)

STATE OF FLORIDA COUNTY OF Orange

My Commission Expires:

9/12/2018 (Date)

known to me or who has produced as identification and who did take an oath.

Notary Public State of Florida Sandra M Fajardo My Commission GG **This** document must be completed and returned with your Submittal Expires 03/09/2022

FRANKLIN COUNTY-DISASTER DEBRIS MONITORING SERVICES RF

SWORN STATEMENT UNDER SECTION 287.133(3)(A), FLORIDA STATUTES, ON PUBLIC ENTITY CRIMES

Before me, the undersigned County, personally appeared <u>Jonathan Burgiel</u>, who, being by me first duly sworn, made the following statement:

1. The business address of <u>2301 Lucien Way. Suite 120 | Maitland. FL 32751</u> (name of Offeror or business) is <u>Tetra Tech. Inc.</u>

2. My relationship to <u>Tetra Tech, Inc.</u> (name of Offeror or business) is Business Unit President (relationship such as sole proprietor, partner, president, vice president).

- 3. I understand that a public entity crime as defined in Section 287.133 of the Florida Statutes includes a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity in Florida or with an agency or political subdivision of any other state or with the United States, including, but not limited to, any proposal or contract for goods or services to be provided to any public entity or such an agency or political subdivision and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy or material misrepresentation.
- 4. I understand that "convicted" or "conviction" is defined by the <u>Florida Statutes</u> to mean a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of a jury verdict, non-jury trial, or entry of a plea of guilt or <u>nolo contendere</u>.
- 5. I understand that "affiliate" is defined by the <u>Florida Statutes</u> to mean (1) a predecessor or successor of a person or a corporation convicted of a public entity crime, or (2) an entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime, or (3) those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate, or (4) a person or corporation who knowingly entered into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months.
- 6. Neither the Offeror or Consultant, nor any officer, director, executive, partner, shareholder, employee, member or agent who is active in the management of the Offeror or Consultant, nor any affiliate of the Offeror or Consultant has been convicted of a public entity crime subsequent to July 1, 1989. (Draw a line through paragraph 6 if paragraph 7 below applies.)
- 7. There has been a conviction of a public entity crime by the Offeror or Consultant, or an officer, director, executive, partner, shareholder, employee, member or agent of the Offeror or Consultant who is active in the management of the Offeror or Consultant or an affiliate of the Offeror or Consultant. A determination has been made pursuant to Section 287.133(3) by order of the Division of Administrative Hearings that it is not in the public interest for the name of the convicted person or affiliate is ______. A copy of the order of the Division of Administrative Hearings is attached to this statement. (Draw a line through paragraph 7 if paragraph 6 above applies.)

(Authorized Signature) Business Unit President -Jonathan Burgiel, Tetra Tech Disaster Recovery (Print Name)

STATE OF FLORIDA COUNTY OF <u>Orange</u> <u>9/12/2018</u> (Date) September The foregoing instrument was acknowledged before me this<u>12</u>day of__, 20<u>18</u>by_{Jonathan Burgiel}, who is personally known to me or who has produced as identification and who did take an oath,

My Commission Expires:

Notary Pu byard

Notary Public State of Florida Sandra M Fajardo My Commission GG 191794 Expires 03/09/2022

AFFIDAVIT OF NON-COLLUSION AND OF NON-INTEREST OF FRANKLIN COUNTY EMPLOYEES

Jonathan Burgiel. Business Unit President, * being first duly sworn, deposes and says that he (it) is the Offeror in the above proposal, that the only person or persons interested in said proposal are named therein; that no officer, employee or agent of the Franklin County Board of County Commissioners or of any other Offeror is interested in said proposal; and that affiant makes the above proposal with no past or present collusion with any other person, firm or corporation.

-Brije

(Authorized Signature)

<u>9/12/2018</u> (Date)

Jonathan Burgiel | Business Unit President - Tetra Tech Disaster Recovery (Print Name)

STATE OF FLORIDA COUNTY OF <u>Orange</u>

 September

 The foregoing instrument was acknowledged before me this 12 day of 2018 by ______, who is personally known to me
 or who has produced as identification and who did take an oath.

My Commission Expires: Notary Public State of Florida Sandfa M Fajardo Ny Commission GG 191794

audra Jayardu Dary Public

*NOTICE: State name of Offeror followed by name of authorized individual (and title) that is signing as Affiant. If Offeror is an individual, state name of Offeror only.

MWBE PARTICIPATION STATEMENT

Note: The Consultant is required to complete the following information and submit this form with the proposal.

Project Description: __Disaster Debris Monitoring Services_

Consultant Name: <u>Tetra Tech, Inc.</u>

This Consultant (is_____) (is not \underline{X}) a certified small or Minority or Woman Owned Business Enterprise (MWBE) per 44 C.F.R. § 13.36 (e).

Expected percentage of contract fees to be subcontracted to MWBE(s): ____%

If the intention is to subcontract a portion of the contract fees to MWBE(s), the proposed MWBE sub-Consultants are as follows:

DBE Sub-Consultant

Type of Work/Commodity

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. In fact, in 2016 Tetra Tech was presented with the Mentor of the Year Award by the U.S. Agency for International Development's Office of Small and Disadvantaged Business Utilization. The Mentor of the Year Award annually recognizes a large prime contractor for effective development assistance given to a small business. Tetra Tech received the award at the USAID Annual Small Business Conference held on May 4, 2016, in Washington, DC.

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. 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. In an effort to identify M/W/DBE teaming subcontractors for the conceived contract, Tetra Tech has contacted multiple firms. Upon selection for award by the County for the resulting contract, in conjunction with its policy to embrace and utilize small and/or M/W/DBE firms, Tetra Tech will continue its efforts to identify additional firms to participate under this engagement to the extent feasible and practical.

TUT (Authorized Signature)

<u>9/12/2018</u> (Date)

<u>Jonathan Burgiel | Business Unit President - Tetra Tech Disaster Recovery</u> (Print Name)

VENDOR INFORMATION

(Please attach a current W9 Form)		
Name of Individual or Business Name:		
_Tetra Tech, Inc.		
Parent Company Name (if different than above):		
Same as above.		
Taxpayer Identification Number (TIN): 95-4148514	·····	
Vendor is:		
(X) Corporation		
() Partnership		
() Sole Proprietorship		
() Other		(Explain)
Permanent Residence/Corporate Office Address:		
Address Headquarters - 3475 East Foothill Boulevard		
City_Pasadena	StateCA	Zip Code <u>91107</u>
Phone_(407) 803-2551	Fax (321) 441-8501	
E-mail <u>betty.kamara@tetratech.com</u>		
Payment Address (if different from above):		
Address Main Office - 2301 Lucien Way, Suite 120		
CityMaitland	StateFL	Zip Code <u>32751</u>
Phone (321) 441-8545	_Fax(321) 441-8501	
E-mail brad.wesolowski@tetratech.com		
Purchase Order Address (if different from above):		
Address_Same as above.		
City	State	Zip Code
Phone	_Fax	
E-mail		
This document must be complete	ed and returned with your Submit	tal

FRANKLIN COUNTY-DISASTER DEBRIS MONITORING SERVICES RFP

Form V (Rev. Jan Departme	V-9 nuary 2011) ant of the Treasury Revenue Service	ldentific	Request for ation Numbe	Taxpayer r and Certifi	icati	on	l				Gir rec se	ve Fo ques nd to	orm ter. o the	to ti Do i IR s	he not S.		
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-	Tetra Tech	Inc															
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9 Su C	lassincation (requi	red): 🔄 Individual/sole proprietor	X C Corporation	S Corporation		aun	ershij		Tru	ist/e	state						
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Spe 7	2301 Lucien	Way, Suite 120															
See C	ity, state, and ZIP	code															
	Maitland, FL	<u>/ 32751</u>															
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TIN on p	age 3.					E	nala	or ide		Fort		-			٦		
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Part II Inder ne	Certific natties of perius	allon				_											
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Certificat ecause y iterest pa enerally, instruction	tion instruction you have failed aid, acquisition payments othe ns on page 4.	a. You must cross out item 2 about to report all interest and dividend or abandonment of secured prop r than interest and dividends, you	ove if you have been n is on your tax return. F erty, cancellation of de u are not required to si	otified by the IRS tha or real estate transac bt, contributions to a gn the certification, b	at you a ctions, i in indivi out you	are c item iduai mus	urrei 2 da 1 retii 1 pro	ntly si ies no remei vide	ubje ot aj nt a you	ect te pply rran r co	bac For geme rrect	kup w mort <u>c</u> ant (IF TIN. S	rithho jage (A), a See t	dini and he	J		
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Purpose of Form

A person who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) to report, for example, income paid to you, real estate transactions, mortgage interest you paid, acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA.

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN to the person requesting it (the requester) and, when applicable, to:

 Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),

2. Certify that you are not subject to backup withholding, or

3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income. Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

An individual who is a U.S. citizen or U.S. resident alien,

 A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States,

· An estate (other than a foreign estate), or

A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax on any foreign partners' share of income from such business. Further, in certain cases where a Form W-9 has not been received, a partnership is required to presume that a partner is a foreign <u>person</u>. and pay the withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid withholding on your share of partnership income.

HOURLY RATE SCHEDULE

NAME OF BUSINESS: Tetra Tech. Inc.

CONTACT PERSON: Ms. Betty Kamara

EMAIL ADDRESS: __Betty.Kamara@tetratech.com

ono

AUTHORIZED SIGNATURE:

The hourly rates shall include all cost including applicable overhead and profit, lodging, meals, transportation, rentals, safety gear, telephone costs, cameras, GPS devices and other incidentals.

	POSITIONS	HOURLY RATES*	HOURS**	TOTAL
1.	Project Manager	\$ - 78.00	70	\$ - 5,460.00
2.	Data Manager	\$ - 55.00	70	\$ -3,850.00
3.	Cost Recovery Specialist	\$ - 95.00	4	\$ - 380.00
4.	Field Supervisors	\$ - 42.00	70	\$ - 2,940.00
5.	Fixed Site Monitors	\$ - 34.00	140	\$ - 4.760.00
6.	Environmental Specialist	\$ - 60.00	2	\$ - 120.00
7.	GIS Specialist	\$ - 50.00	4	\$ - 200.00
8.	Supervising Monitors	\$ - 42.00	70	\$ - 2,940.00
9.	Billing/Invoice Analysts	\$ - 48.00	8	\$ - 384.00
10	Administrative Assistants	\$ - 32.00	70	\$ - 2.240.00
11.	Field Monitors	\$ - 34.00	280	\$ - 9,520.00
	A Course	TOTAL (Items 1-11)		\$ - 32 794 00

*Any overtime will be billed at the Hourly Rate times 1.5. Overtime is not to be included in the rates above.

**These hours are not intended to represent the actual contract amount but are an estimated representation of a typical work week. The actual contract value will be negotiated with the successful proposing agency prior to issuance of the notice to proceed for each event.



Pricing Assumptions

To the extent that the County requests Tetra Tech's assistance, the hourly rates Tetra Tech has proposed on the Hourly Rate Schedule form shall apply. The hourly rates shall include all cost including applicable overhead and profit, lodging, meals, transportation, rentals, safety gear, telephone costs, cameras, GPS devices and other incidentals. The estimated hours listed on the Hourly Rate Schedule form are based on the following assumptions:

- Franklin County, FL has an estimated 2018 population of 11,727. Using the United States Army Corps of Engineers (USACE) model of a Category 2 storm making a direct impact on Franklin County, the storm would result in 44,719 Cubic Yards (CY) of debris.
- Assuming contractor will collect six (6) loads a day and an average load size of 55 CY would typically take five (5) collection container trucks. Assuming a contractors' ability to use at least one (1) double container truck which would require four (4) Field Monitors to monitor the 4 (four) trucks.
- Assuming one (1) temporary debris management site which required two (2) Site Monitors.
- Assuming a seven (7) day period as the Hourly Rate Schedule form requests for a representation of a typical work week.