



IDIQ Contract for Wide-Area Lidar and Photogrammetry Support Services – for Statewide Topographic Mapping Program

Proposal Response | CONTRACT NO. 4400033158

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Louisiana Department of Transportation and Development

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Issue	Date	Status	Comments on Content	Prepared By	Checked By	Approved By
01	09/04	Draft	Technical Input	BB	HG	
02	09/16	Final	Final Approval		HG	KO

Project Team

Initials	Name	Role
HG	Heather Geyer	Technical and Business Development Manager
KO	Keith Owens	Commercial Director
BB	Breanna Brown	Proposal Manager
HL	Heassam Lavassani	Proposal Coordinator

Welcome

The Louisiana Department of Transportation and Development (LADOTD) continues to advance its Statewide Topographic Mapping Program through the acquisition of high-resolution elevation and imagery data to support infrastructure planning, environmental management, and public safety initiatives.

In support of this effort, Fugro USA Land, Inc., in partnership with McKim & Creed, Inc., is proud to submit the following recommended approach—developed through decades of experience and tailored to LADOTD’s requirements. This plan emphasizes:

- **Deployment of Louisiana-based survey crews and licensed professionals**, ensuring full compliance with LAPELS and DOTD standards
- **Use of Riegl VQ-1560 II-S lidar sensors and Phase One iXM cameras**, aligned with DOTD’s preferred specifications
- **Cloud-based, machine learning-enhanced lidar processing workflows**, enabling rapid, high-quality deliverables
- **Full compliance with ASPRS, USGS 3DEP, and DOTD Location and Survey Manual standards**, ensuring seamless integration with existing GIS layers

The benefits of adopting Fugro’s approach include:

- **Continuity with previously collected datasets across Louisiana**, supporting long-term planning and modeling
- **Local presence and deep familiarity with Louisiana’s terrain and environmental conditions**, reducing acquisition risks and improving data quality
- **Adherence to DOTD’s task order schedules and deliverable formats**, minimizing rework and ensuring timely submission
- **Investment in authoritative geospatial data**, supporting LADOTD’s mission to deliver safe, efficient, and resilient infrastructure across the state

With over 29 years of aerial lidar expertise and more than 2.5 million square miles of orthoimagery delivered since leading the first statewide all-digital orthoimagery project in Maryland, Fugro is well-positioned to support LADOTD in this important initiative. Our proven success across Louisiana and the Gulf Coast, along with our support of federal, state, and local agencies, reflects our commitment to innovation, quality, and geospatial excellence. We are ready to deliver reliable, high-accuracy data that meets the state’s evolving needs.

For further discussion or clarification, please contact Heather Geyer, Technical and Business Development Manager, at +1 914-213-3855 or h.geyer@fugro.com. We appreciate the opportunity to support LADOTD.

Contents

DOTD FORM: 24-102 (Revised August 11, 2025)	1
12. Discipline Table	3
13. Team Size	4
14. Organizational Chart	6
15. Minimum Personnel Requirements	7
16. Staff Experience	8
17. Firm Experience	30
18. Approach and Methodology	37
19. Workload	40
20. Certifications/Licenses	41
21. QA/QC Plan	42
22. Sub-consultant Information	43
23. Location	44

Abbreviations

AGL	Above Ground Level
AOI	Area of Interest
ASPRS	American Society for Photogrammetry and Remote Sensing
AT	Aerotriangulation
CAD	Computer-aided Design
DEM	Digital Elevation Model
DSM	Digital Surface Model
DTM	Digital Terrain Model
FAA	Federal Aviation Administration
FCMS	Flight Control Management System
FUSALI	Fugro USA Land, Inc.
GPS	Global Positioning System
GSD	Ground Sample Distance
ICT	Information and Communication Technology
IDIQ	Indefinite Delivery Indefinite Quantity
IMU	Inertial Measurement Unit
ISO	International Organization for Standardization
JPEG (JPG)	Joint Photographic Experts Group
MrSID	Multiresolution Seamless Image Database (by Lizardtech)
MSSP	Managed Security Service Provider
NAD	North American Datum
NAVD	North American Vertical Datum
NMAS	National Map Accuracy Standards
NOAA	National Oceanic and Atmospheric Administration
OHSAS	Occupational Health and Safety Assessment Series
OPCO	Operating Company
Pan RGB IR NIR	Pan Chromatic, Red, Green, Blue, Infrared or Near Infrared
PDOP	Position (3D) Dilution of Precision
POS	Applanix Positional Operating System
PSC	Project Staging and Control
QA QC	Quality Assurance Quality Control
QHSSE	Quality, Health, Safety, Security, Environment
QMS	Quality Management System
RMSE	Root Mean Square Error
RSO	Regional Security Officer
Geo TIFF	Georeferenced Information Embedded within a Tag Image File Format
USACE	United States Army Corps of Engineers
USGS	United States Geological Survey
UTC	Coordinated Universal Time
WGS	World Geodetic System

DOTD FORM: 24-102 (Revised August 11, 2025)

1. Contract Name as shown in the advertisement	IDIQ Contract for Wide-Area Lidar and Photogrammetry Support Services – for Statewide Topographic Mapping Program
2. Contract Number(s) as shown in the advertisement	Contract No. 4400033158
3. State Project Number(s), if shown in the advertisement	Not Applicable.
4. Prime consultant name	Fugro USA Land, Inc.
5. Prime consultant license number (as registered with the Louisiana Professional Engineering and Land Surveying Board (LAPELS) if registration is required under Louisiana law)	VF.0000794
6. Prime consultant mailing address	226 Dulles Drive, Suite 110, Lafayette, LA 70506
7. Prime consultant physical address (existing or to be established, if location is used as an evaluation criteria)	226 Dulles Drive, Suite 110, Lafayette, LA 70506
8. Name, title, phone number, and email address of prime consultant's contract point of contact	Heather Geyer - Technical and Business Development Manager Phone Number: (914)-213-3855 Email: h.geyer@fugro.com
9. Name, title, phone number, and email address of the official with signing authority for this proposal	Oliver Francis - Regional Business Line Director Land for North America Phone Number: (346)-481-4705 Email: o.francis@fugro.com
10. This is to certify that all information contained herein is accurate and true, and that the team presently has sufficient staff to perform these services within the designated time frame. By submitting this proposal, proposer certifies that it is not engaged in a boycott of Israel and it will, for the duration of its contract obligations, refrain from a boycott of Israel. Proposer also certifies and agrees that the following information is correct: In preparing its response, the proposer has considered all proposals submitted from qualified, potential subcontractors and suppliers, and has not, in the solicitation, selection, or commercial treatment of any subcontractor or supplier, refused to transact or terminated business activities, or taken other actions intended to limit commercial relations, with a person or entity that is engaging in commercial transactions in Israel or Israeli-controlled territories, with the specific intent to accomplish a boycott or divestment of Israel. The proposer also has not retaliated against any person or other entity for reporting such refusal, termination, or commercially limiting actions. DOTD reserves the right to reject the response of the bidder or proposer if this certification is subsequently determined to be false, and to terminate any contract awarded based on such a false response.	



Signature above shall be the same person listed in Section 9:

09/15/20225 _____

Date:

Pursuant to Act No. 581 of the 2024 Louisiana Legislature Regular Session, proposer further certifies that it does not have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association based solely on the entity's or association's status as a firearm entity or firearm trade association. In addition, proposer certifies it will not discriminate against a firearm entity or firearm trade association during the term of the contract based solely on the entity's or association's status as a firearm entity or firearm trade association.

11. If a Disadvantaged Business Enterprise (DBE) goal has been set for this advertisement, indicate which firm(s) will be used to meet the DBE goal and each firm(s)' percentage.	<u>Firm(s):</u> Not Applicable.	<u>Firm(s)' %:</u>
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DOTD FORM: 24-102 (Revised August 11, 2025)

12. Discipline Table

Discipline(s)	% of Overall Contract	Prime – Fugro USA Land, Inc.	McKim & Creed, Inc.	Each Discipline must total to 100%
Other (must specify) Topographic Mapping - Lidar	47.5	100%	0%	100%
Other (must specify) Topographic Mapping - Imagery	47.5	100%	0%	100%
Other (must specify) Topographic Survey – Ground Control	5%	5%	95%	100%
Identify the percentage of work for the overall contract to be performed by the prime consultant and each sub-consultant.				
Percent of Contract	100%	95%	5%	100%

13. Team Size

Fugro operates with a robust global workforce of approximately 11,219 employees across 52 countries, delivering specialized services in energy, transportation, infrastructure, and water markets. This extensive network enables Fugro to maintain a “global resources for local reach” approach, ensuring that LADOTD benefit from both international expertise and localized support.

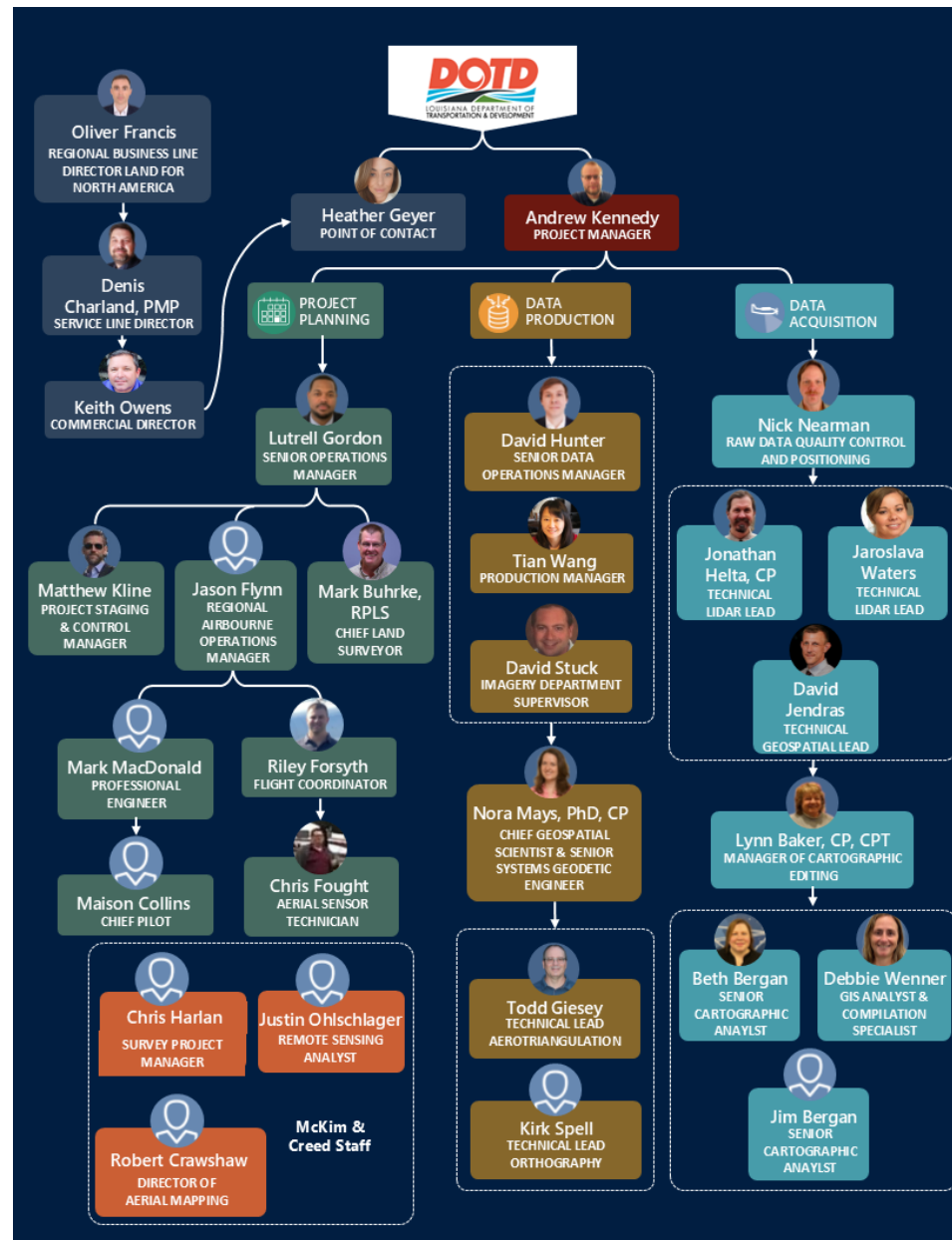
A key strength of Fugro lies in its Geo-data capabilities. The company employs over 2,600 Geo-data engineers dedicated to mapping, modeling, and monitoring the Earth's subsurface and built environments. These professionals are instrumental in processing vast volumes of data for applications such as transportation and infrastructure management and planning, floodplain management, and climate adaptation initiatives.

Building on Fugro’s extensive global expertise and its strong foundation in Geo-data processing, the resources allocated to this contract reflect a tailored commitment to project success. Leveraging its network of over 2,600 Geo-data professionals, Fugro has mobilized a dedicated team with specialized skills in topographic and bathymetric lidar and aerial imagery data acquisition, processing, and interpretation – ensuring that the insights delivered are both locally relevant and globally informed. This strategic deployment of personnel and technology underscores Fugro’s ability to scale its capabilities to meet the unique demands of this engagement.

Firm name	DOTD Job Classification	Number of personnel <u>committed</u> to this contract *	Total number of personnel available in this DOTD Job Classification (if needed)
Fugro USA Land, Inc.	CADD Technician	1	5+
Fugro USA Land, Inc.	GIS Analyst	1	4
Fugro USA Land, Inc.	Senior Technician	2	5+
Fugro USA Land, Inc.	Surveyor	2	6+
Fugro USA Land, Inc.	Supervisor - Other	4	10
Fugro USA Land, Inc.	Project Office Manager	1	5+
Fugro USA Land, Inc.	Technician	2	5+
Fugro USA Land, Inc.	Other (Scientists)	1	3
Fugro USA Land, Inc.	Administrative	1	10+
Fugro USA Land, Inc.	Inspector	1	5+

Firm name	DOTD Job Classification	Number of personnel <u>committed</u> to this contract *	Total number of personnel available in this DOTD Job Classification (if needed)
Fugro USA Land, Inc.	Engineer	1	30+
Fugro USA Land, Inc.	Environmental Pro		1
Fugro USA Land, Inc.	Geologist	2	15+
Fugro USA Land, Inc.	Other (Pilots)	1	5
Fugro USA Land, Inc.	Other (Photogrammetrist)	1	1
Fugro USA Land, Inc.	Other (Geophysicists)	1	5+
Fugro USA Land, Inc.	Other (Operators)	1	5+
Fugro USA Land, Inc.	Designer	1	1
Fugro USA Land, Inc.	Other (Remote Sensing Specialist)		30+
Fugro USA Land, Inc.	Other (Photo Interpreter)	0	1
McKim & Creed, Inc.	Surveyor	1	1
McKim & Creed, Inc.	Other (must specify) Photogrammetrist	1	1
McKim & Creed, Inc.	Other (must specify) Certified Mapping Specialist	1	1

14. Organizational Chart



15. Minimum Personnel Requirements

MPR	Personnel being used to meet the MPR	Firm employed by	Type of license and discipline meeting MPR/ certification & number (Ex: PE # - Civil)	State of license	License / certification expiration date
1	Nora May, PhD, CP	Fugro USA Land, Inc.	CP #1497	N/A	07/11/2026
2	Kirk Spell, CP	Fugro USA Land, Inc.	ASPRS #RS198	N/A	12/22/26
3	Jason Flynn	Fugro USA Land, Inc.			
4	Mark MacDonald	Fugro USA Land, Inc.			
5	Mark Buhrke, PLS	Fugro USA Land, Inc.	PLS.0004819	LA	09/30/2027
6	Maison Collins	Fugro USA Land, Inc.	FAA Commercial Pilot Airplane, Instrument, Single Engine Land, Multi-Eng Land, FAA High Performance/Complex, and Tailwheel FAA First Class medical, U.S passport, FCC Radio License, RVSM High Alt		

16. Staff Experience

Nora May, PhD, CP, Chief Geospatial Scientist & Senior Systems Geodetic Engineer

Firm employed by Fugro USA Land, Inc.

Name	Nora May, PhD, CP	Years of relevant experience with this employer	22
Title	Chief Geospatial Scientist & Senior Systems Geodetic Engineer	Years of relevant experience with other employer(s)	5
Degree(s) / Years / Specialization	PhD, MS, Geodetic Science, The Ohio State University / 2007 MS, Surveying and Geoinformatics Engineering, Budapest University of Technology and Economics, Hungary		
Active registration number / state / expiration date	Certified Photogrammetrist (CP #1497), by the ASPRS. Expiration: 07/11/2026		
Year registered	2007	Discipline	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Mapping - Imagery Other (must specify) Topographic Survey – Ground Control
Contract role(s) / brief description of responsibilities	Chief Geospatial Scientist & Senior Systems Geodetic Engineer: ■ Lead geospatial strategy, innovation, and technical direction ■ Oversee development and application of remote sensing technologies ■ Ensure accuracy and integrity of spatial data and control networks ■ Integrate and calibrate sensor systems for mapping missions ■ Support advanced spatial analytics and geospatial product development		
08/17-08/22	Coastal Protection and Restoration Authority (CPRA) Services, Louisiana: The CPRA, through the Louisiana Department of Natural Resources, contracted with Fugro to provide surveying and mapping services. The services under this contract include topographic survey, bathymetric and hydrographic surveys, magnetometer surveys, geophysical surveys, benchmark establishment, maps, cross-sections, and datasets, property and right-of-way surveys, adherence to control accuracy standards.		
04/21–09/22	USACE, High Resolution Lidar, Multiple Counties, ND – Phase 9: Fugro was awarded Phase 1 and subsequent phases of the program. Phase 9 acquisition occurred, with 11,910 sq. miles of 2 ppsm lidar data acquired and processed to USACE and ASPRS/NDEP standards. Seamless integration of new data with previous phases was ensured through careful statewide tile layout management by Fugro.		
02/17-02/22	Washington DC, Office of the Chief Technology Officer (OCTO) Lidar, Imagery, 3D Planimetric Mapping and Updates, Change Analysis: Under a five-year contract, Fugro annually acquires 3-inch orthoimagery and 8ppsm lidar, updating the District's planimetric geodatabase during Spring leaf-off. Operations are coordinated with federal security agencies due to restricted airspace.		
01/22-09/22	Texas Water Development Board - Llano River TopoBathymetric Lidar and Portions of Ellis, Hill, Johnson, and Navarro Counties, Texas: Fugro acquired QL2+ topographic lidar (4ppsm) and bathymetric lidar (6ppsm) over the Llano River to produce a 1-meter resolution topobathymetric DEM. The data supports dam safety, floodplain management, water modeling, stream restoration, and emergency response.		

Mark Buhrke, RPLS, CH, MSc, MBA, Chief Land SurveyorFirm employed by **Fugro USA Land, Inc.**

Name	Mark Buhrke, RPLS, CH, MSc, MBA	Years of relevant experience with this employer	30
Title	Chief Land Surveyor	Years of relevant experience with other employer(s)	4
Degree(s) / Years / Specialization	MBA, University of Houston / 2005 Master of Science, University of Florida / 1991 / Civil Engineering Bachelor of Science, University of Florida / 1989 / Surveying and Mapping Associate of Arts, Florida International University / 1985		
Active registration number / state / expiration date	PLS LA # 4819. Expiration: 09/30/2027		
Year registered	1989	Discipline	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Mapping - Imagery Other (must specify) Topographic Survey – Ground Control
Contract role(s) / brief description of responsibilities	Chief Land Surveyor: ■ Ensure accuracy and compliance with surveying standards and regulations ■ Integrate ground survey data with remote sensing and mapping workflows ■ Review and certify survey deliverables, including boundary and topographic surveys ■ Coordinate with project managers and clients on survey requirements		
08/17-08/22	Coastal Protection and Restoration Authority (CPRA) Services, Louisiana: The CPRA, through the Louisiana Department of Natural Resources, contracted with Fugro to provide surveying and mapping services. The services under this contract include topographic survey, bathymetric and hydrographic surveys, magnetometer surveys, geophysical surveys, benchmark establishment, maps, cross-sections, and datasets, property and right-of-way surveys, adherence to control accuracy standards.		
01/22-09/22	Texas Water Development Board - Llano River TopoBathymetric Lidar and Portions of Ellis, Hill, Johnson, and Navarro Counties, Texas: Fugro acquired QL2+ topographic lidar (4ppsm) and bathymetric lidar (6ppsm) over the Llano River to produce a 1-meter resolution topobathymetric DEM. The data supports dam safety, floodplain management, water modeling, stream restoration, and emergency response. Coverage: 3,216 sq mi..		
01/23-09/23	City of Waco/McLennan County 2023 Impervious Surface Mapping: Fugro successfully completed a geospatial data acquisition and processing project covering approximately 1,305 square miles across the City of Waco and McLennan County, Texas. The scope included high-resolution 6-inch orthoimagery, Lidar data at 4 points per square meter (PPSM) for the county and 8 PPSM for the city, and detailed 1"=100' scale planimetric mapping.		
04/21–09/22	USACE, High Resolution Lidar, Multiple Counties, ND – Phase 9: Fugro was awarded Phase 1 and subsequent phases of the program. Phase 9 acquisition occurred, with 11,910 sq. miles of 2 ppsm lidar data acquired and processed to USACE and ASPRS/NDEP standards. Seamless integration of new data with previous phases was ensured through careful statewide tile layout management.		

Mark MacDonald, Professional EngineerFirm employed by Fugro USA Land, Inc.

Name	Mark MacDonald	Years of relevant experience with this employer	29
Title	Professional Engineer	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization:	BSc. Geomatics Engineering – University of New Brunswick Survey Technologist Diploma – College of Geographic Sciences Survey Technician Diploma – College of Geographic Sciences		
Active registration number / state / expiration date	N/A		
Year registered	N/A	Discipline	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Mapping - Imagery
Contract role(s) / brief description of responsibilities	Professional Engineer: ■ Design and manage bathymetric survey systems and methodologies ■ Oversee acquisition of multibeam, single-beam, and airborne bathymetric data ■ Ensure data accuracy, quality control, and compliance with hydrographic standards ■ Integrate GNSS, sonar, and inertial systems for precise underwater mapping ■ Lead processing and validation of bathymetric datasets for charting and modeling ■ Review and certify final deliverables and technical reports		
01/22-09/22	Texas Water Development Board - Llano River TopoBathymetric Lidar and Portions of Ellis, Hill, Johnson, and Navarro Counties, Texas: Fugro acquired QL2+ topographic lidar (4ppsm) and bathymetric lidar (6ppsm) over the Llano River to produce a 1-meter resolution topobathymetric DEM. The data supports dam safety, floodplain management, water modeling, stream restoration, and emergency response. Coverage: 3,216 sq mi.		
2019	Hydrographic Survey – Vicinity of Apalachicola, Florida OPR-J359-KR-19: Second task order for a multibeam hydrographic survey conducted for NOAA utilizing multiple vessels equipped with Teledyne dual head 7125, survey objective was to update nautical charts, US territorial limits, support coastal management and perform inundation modeling in the Apalachicola region. Project size: 323 nm2.		
2019-2020	Blake Plateau - OER-KR-19 Offshore, US East Coast: Multibeam hydrographic survey conducted for NOAA utilizing Fugro's M/V Brasilis for deep water MBES data acquisition with the Full Ocean EM302 sensor. The survey identified one of the world's largest deep water coral reefs additional survey objectives was to update nautical charts as well as provide mapping coverage in the region to support the NOAA-wide goal of mapping the US EEZ by the year 2030. Project size: 4,127 Linear NM		
2021	Hydrographic Survey – Unimak, Alaska OPR-Q350-KR-21: Multibeam hydrographic survey conducted for NOAA utilizing multiple vessels equipped with Teledyne dual head 7125, survey objective was to update nautical charts due to the increase in marine traffic in Unimak, Alaska. Project size: 794 SNM.		

Jason Flynn, Regional Airborne Operations Manager & Aviation Manager

Firm employed by Fugro USA Land, Inc.

Name	Jason Flynn	Years of relevant experience with this employer	21
Title	Regional Airborne Operations Manager & Aviation Manager	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization	BS University of South Dakota / 2000 / Biology		
Active registration number / state / expiration date	N/A		
Year registered	N/A	Discipline	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Mapping - Imagery
Contract role(s) / brief description of responsibilities	Regional Airborne Operations Manager & Aviation Manager: - Oversee regional aerial data acquisition operations and flight logistics - Manage aircraft scheduling, crew assignments, and mission planning - Ensure compliance with FAA regulations and internal safety protocols - Supervise pilots, maintenance staff, and airborne sensor operators - Coordinate with project teams to align flight plans with data requirements - Maintain aircraft readiness, airworthiness, and maintenance schedules - Optimize operational efficiency, cost, and resource utilization - Maintain aviation records, certifications, and regulatory documentation		
01/22-09/22	Texas Water Development Board - Llano River TopoBathymetric Lidar and Portions of Ellis, Hill, Johnson, and Navarro Counties, Texas: Fugro acquired topographic lidar at QL2+ 4ppsm density and bathymetric lidar at 6ppsm density over the Llano River. We merged this data to create a one-meter ground sample distance topobathymetric digital elevation model, which includes bathymetric measurements of the riverbed. The acquired data will be used for dam safety, floodplain management, feature extraction, water quality modeling, stream restoration potential analysis, change detection, and emergency management services. It is now part of the State of Texas's ongoing geospatial data collection program, supporting regional and local mapping needs for both land and coastal regions. Size: 3,216 sq mi.		
02/17-02/22	Washington DC, Office of the Chief Technology Officer (OCTO) Lidar, Imagery, 3D Planimetric Mapping and Updates, Change Analysis: Under a five-year contract, Fugro annually acquires 3-inch orthoimagery and 8ppsm lidar, updating the District's planimetric geodatabase during Spring leaf-off. Operations are coordinated with federal security agencies due to restricted airspace.		
11/16-Present	Horry County, South Carolina Orthoimagery, Obliques, Lidar and Planimetrics: Fugro designed a biennial program to acquire 6-inch ortho and oblique imagery and 2ppsm lidar during leaf-off season. The project required precise timing to avoid flooding, cloud cover, and smoke from controlled burns. Data quality exceeded ASPRS and USGS standards to support informed decision-making.		

Maison Collins, Chief PilotFirm employed by **Fugro USA Land, Inc.**

Name	Maison Collins	Years of relevant experience with this employer	6
Title	Chief Pilot	Years of relevant experience with other employer(s)	6
Degree(s) / Years / Specialization	Sim-com Flight Training Orlando, FL (November 2018) PA-31-350, SimCom Flight Training Orlando, FL December 2019, April 2021, April 2023 for Cessna Conquest C441, (March 2022 ATOC or Air Tactical Operations Command) Cider City, UT High School Gillette Campbell County (2007) Never failed a check ride or written flight exam. No FAA violations, accidents or incidents.		
Active registration number / state / expiration date	FAA Commercial Pilot Airplane, Instrument, Single Engine Land, Multi-Eng Land, FAA High Performance/Complex, and Tailwheel FAA First Class medical, U.S passport, FCC Radio License, RVSM High Alt		
Year registered	2019	Discipline	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Mapping - Imagery
Contract role(s) / brief description of responsibilities	Chief Pilot : ■ Lead and manage all flight operations for aerial data acquisition ■ Ensure compliance with FAA regulations and aviation safety standards ■ Coordinate flight planning with project and operations teams ■ Maintain aircraft readiness, logs, and maintenance schedules ■ Support integration of airborne sensors (Lidar, cameras, GNSS/IMU)		
08/17-08/22	Coastal Protection and Restoration Authority (CPRA) Services, Louisiana: The CPRA, through the Louisiana Department of Natural Resources, contracted with Fugro to provide surveying and mapping services. The services under this contract include topographic survey, bathymetric and hydrographic surveys, magnetometer surveys, geophysical surveys, benchmark establishment, maps, cross-sections, and datasets, property and right-of-way surveys, adherence to control accuracy standards.		
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11/16-Present	Horry County, South Carolina Orthoimagery, Obliques, Lidar and Planimetrics: Fugro designed a biennial program to acquire 6-inch ortho and oblique imagery and 2ppsm lidar during leaf-off season. The project required precise timing to avoid flooding, cloud cover, and smoke from controlled burns. Data quality exceeded ASPRS and USGS standards to support informed decision-making.		
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Kirk Spell, CP, Technical Lead Orthoimagery

Firm employed by Fugro USA Land, Inc.

Name	Kirk Spell, CP	Years of relevant experience with this employer	32
Title	Technical Lead Orthoimagery	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization	Dakota Western Technical Black Hills State University South Dakota School of Mines and Technology		
Active registration number / state / expiration date	Mapping Scientist, Remote Sensing - ASPRS #RS198		
Year registered	2001	Discipline	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Mapping - Imagery
Contract role(s) / brief description of responsibilities	Technical Lead Orthoimagery: - Oversee orthoimagery production workflows from raw imagery to final deliverables - Ensure geometric accuracy, radiometric consistency, and seamless mosaicking - Manage QA/QC processes for true orthophotos and standard orthos - Maintain compliance with project specifications and industry standards		
08/17-08/22	Coastal Protection and Restoration Authority (CPRA) Services, Louisiana: The CPRA, through the Louisiana Department of Natural Resources, contracted with Fugro to provide surveying and mapping services. The services under this contract include topographic survey, bathymetric and hydrographic surveys, magnetometer surveys, geophysical surveys, benchmark establishment, maps, cross-sections, and datasets, property and right-of-way surveys, adherence to control accuracy standards.		
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Andrew Kennedy, Senior Project ManagerFirm employed by **Fugro USA Land, Inc.**

Name	Andrew Kennedy	Years of relevant experience with this employer	13
Title	Senior Project Manager	Years of relevant experience with other employer(s)	1
Degree(s) / Years / Specialization:	Bachelor of Arts, University of Waterloo / 2007 / History- Major, Economics – Minor Application Specialist Graduate Certificate, Sir Sanford Fleming/ 2011 / Geographic Information Systems (GIS)		
Active registration number / state / expiration date	N/A		
Year registered	N/A	Discipline	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Mapping - Imagery
Contract role(s) / brief description of responsibilities	Senior Project Manager: ■ Lead planning and execution of aerial mapping and remote sensing projects ■ Manage cross-functional teams (GIS, photogrammetry, flight ops) ■ Oversee data acquisition (Lidar, imagery, multispectral, etc.) ■ Ensure quality control and compliance with industry standards ■ Coordinate with clients and stakeholders throughout project lifecycle ■ Monitor budgets, timelines, and deliverables ■ Identify and mitigate project risks ■ Prepare reports and final documentation		
2015-2025	Virginia Department of Transportation (VDOT), Pavement Data & Evaluation Services: Fugro annually collects and delivers roadway condition data—including IRI, rutting, faulting, surface distress, and HD ROW imagery—across 30,000 miles. The team also delivered 1.2 million roadway assets, GPR data and analysis, and migrated 25 TB of historical data. Fugro supports VDOT's transition to 3D technology through pilot projects.		
2016-Present	Colorado Department of Transportation (CDOT), Pavement Data and Imagery Collection Project: Fugro annually collects roadway condition data—including IRI, rutting, surface distress, geometry, pavement, and HD ROW imagery—across 5,600 miles. To meet Alaska's challenging terrain, Fugro developed a 4x4 ARAN system. Optional services include asset inventory, pavement engineering, friction testing, FWD, coring, and GPR.		
2008-2024	New York State Department of Transportation (NYSDOT), Automated Pavement Data Collection: Fugro annually collects 26,500 miles of roadway data (IRI, rutting, geometry, curves, HD ROW imagery), plus 22,000 miles each of GPR and asset inventory—over 5 million assets in years 1 and 5. NYSDOT also purchased a Fugro ARAN system for project-level data collection.		

Lutrell Gordon, PMP, Operations ManagerFirm employed by **Fugro USA Land, Inc.**

Name	Lutrell Gordon, PMP	Years of relevant experience with this employer	17
Title	Operations Manager	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization	B.Sc. Norfolk State University / 2007 / Mechanical Design Engineering Technology MBA Strayer University / 2013 / Project Management		
Active registration number / state / expiration date	N/A		
Year registered	N/A	Discipline	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Mapping - Imagery
Contract role(s) / brief description of responsibilities	Operations Manager: ■ Develop and implement operational policies and procedures ■ Manage resource allocation and workflow optimization ■ Monitor performance metrics and drive continuous improvement ■ Coordinate across departments to support project delivery ■ Ensure compliance with safety, regulatory, and company standards ■ Manage budgets, forecasts, and operational reporting		
2015-2025	Virginia Department of Transportation (VDOT), Pavement Data & Evaluation Services: Fugro annually collects and delivers roadway condition data—including IRI, rutting, faulting, surface distress, and HD ROW imagery—across 30,000 miles. The team also delivered 1.2 million roadway assets, GPR data and analysis, and migrated 25 TB of historical data. Fugro supports VDOT's transition to 3D technology through pilot projects.		
2016-Present	Colorado Department of Transportation (CDOT), Pavement Data and Imagery Collection Project: Fugro annually collects roadway condition data—including IRI, rutting, surface distress, geometry, pavement, and HD ROW imagery—across 5,600 miles. To meet Alaska's challenging terrain, Fugro developed a 4x4 ARAN system. Optional services include asset inventory, pavement engineering, friction testing, FWD, coring, and GPR.		
2008-2024	New York State Department of Transportation (NYSDOT), Automated Pavement Data Collection: Fugro annually collects 26,500 miles of roadway data (IRI, rutting, geometry, curves, HD ROW imagery), plus 22,000 miles each of GPR and asset inventory—over 5 million assets in years 1 and 5. NYSDOT also purchased a Fugro ARAN system for project-level data collection.		
11/16-Present	Horry County, South Carolina Orthoimagery, Obliques, Lidar and Planimetrics: Fugro designed a biennial program to acquire 6-inch ortho and oblique imagery and 2ppsm lidar during leaf-off season. The project required precise timing to avoid flooding, cloud cover, and smoke from controlled burns. Data quality exceeded ASPRS and USGS standards to support informed decision-making.		

David Hunter, Production Manager/ Data Processing ManagerFirm employed by **Fugro USA Land, Inc.**

Name	David Hunter	Years of relevant experience with this employer	14
Title	Production Manager/ Data Processing Manager	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization		Advanced Certification McMaster University/ 2009 / GIS	
Active registration number / state / expiration date		N/A	
Year registered	Discipline	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Mapping - Imagery	
Contract role(s) / brief description of responsibilities		Production Manager/ Data Processing Manager: ■ Oversee data processing workflows for aerial imagery, Lidar, and other remote sensing datasets ■ Manage production schedules and ensure timely delivery of mapping products ■ Supervise data analysts and processing technicians ■ Ensure quality control and adherence to technical standards ■ Optimize processing tools, software, and automation strategies ■ Coordinate with project managers to align production with client requirements ■ Troubleshoot data issues and implement corrective actions ■ Maintain documentation of processes, outputs, and performance metrics	
2015-2025	Virginia Department of Transportation (VDOT), Pavement Data & Evaluation Services: Fugro annually collects and delivers roadway condition data—including IRI, rutting, faulting, surface distress, and HD ROW imagery—across 30,000 miles. The team also delivered 1.2 million roadway assets, GPR data and analysis, and migrated 25 TB of historical data. Fugro supports VDOT’s transition to 3D technology through pilot projects.		
2017 – Present	Alaska Department of Transportation & Public Facilities (ADOT & PF), Highway Data Collection: Annual collection, processing and delivery of roadway condition data including IRI, rutting, surface distress, geometry, pavement and HD ROW images for 5,600 miles of road network. Fugro developed and built a 4 x 4 Automatic Road Analyzer (ARAN) in order to meet the demands of performing data collection over Alaska’s very diverse, challenging terrain. Optional items for the project include asset inventory, pavement engineering, friction testing, Falling Weight Deflectometer (FWD), coring and GPR.		
11/16-Present	Horry County, South Carolina Orthoimagery, Obliques, Lidar and Planimetrics: Fugro designed a biennial program to acquire 6-inch ortho and oblique imagery and 2ppsm lidar during leaf-off season. The project required precise timing to avoid flooding, cloud cover, and smoke from controlled burns. Data quality exceeded ASPRS and USGS standards to support informed decision-making.		

Jonathan Helta, CP, Technical Lead LidarFirm employed by **Fugro USA Land, Inc.**

Name	Jonathan Helta, CP	Years of relevant experience with this employer	25
Title	Technical Lead Lidar	Years of relevant experience with other employer(s)	1
Degree(s) / Years / Specialization	BS, Frostburg State University / 1997 / Environmental Analysis and Planning		
Active registration number / state / expiration date	CP, GIS Certificate, Penn State University) #1344 Expiration: 12/14/2027		
Year registered	2012	Discipline	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Mapping - Imagery
Contract role(s) / brief description of responsibilities	Technical Lead Lidar: ■ Lead Lidar data acquisition, processing, and QA/QC workflows ■ Develop and optimize Lidar processing pipelines and automation tools ■ Ensure data accuracy, consistency, and compliance with project specifications ■ Provide technical guidance on sensor calibration, flight planning, and georeferencing ■ Collaborate with cross-functional teams on integration with imagery and GIS products ■ Troubleshoot data anomalies and implement corrective measures		
08/17-08/22	Coastal Protection and Restoration Authority (CPRA) Services, Louisiana: The CPRA, through the Louisiana Department of Natural Resources, contracted with Fugro to provide surveying and mapping services. The services under this contract include topographic survey, bathymetric and hydrographic surveys, magnetometer surveys, geophysical surveys, benchmark establishment, maps, cross-sections, and datasets, property and right-of-way surveys, adherence to control accuracy standards.		
04/21-09/22	USACE, High Resolution Lidar, Multiple Counties, ND – Phase 9: Fugro was awarded Phase 1 and subsequent phases of the program. Phase 9 acquisition occurred, with 11,910 sq. miles of 2 ppsm lidar data acquired and processed to USACE and ASPRS/NDEP standards. Seamless integration of new data with previous phases was ensured through careful statewide tile layout management by Fugro.		
02/17-02/22	Washington DC, Office of the Chief Technology Officer (OCTO) Lidar, Imagery, 3D Planimetric Mapping and Updates, Change Analysis: Under a five-year contract, Fugro annually acquires 3-inch orthoimagery and 8ppsm lidar, updating the District's planimetric geodatabase during Spring leaf-off. Operations are coordinated with federal security agencies due to restricted airspace.		
01/22-09/22	Texas Water Development Board - Llano River TopoBathymetric Lidar and Portions of Ellis, Hill, Johnson, and Navarro Counties, Texas: Fugro acquired QL2+ topographic lidar (4ppsm) and bathymetric lidar (6ppsm) over the Llano River to produce a 1-meter resolution topobathymetric DEM. The data supports dam safety, floodplain management, water modeling, stream restoration, and emergency response.		
01/23-09/23	City of Waco/McLennan County 2023 Impervious Surface Mapping: Fugro successfully completed a geospatial data acquisition and processing project covering approximately 1,305 square miles. The scope included high-resolution 6-inch orthoimagery, Lidar data at 4 points per square meter (PPSM) for the county and 8 PPSM for the city, and detailed 1"=100' scale planimetric mapping.		

Tian Wang, Project Setup & Training Manager

Firm employed by **Fugro USA Land, Inc.**

Name	Tian Wang	Years of relevant experience with this employer	24
Title	Project Setup & Training Manager	Years of relevant experience with other employer(s)	7
Degree(s) / Years / Specialization	BS, Frostburg State University / 1997 / Environmental Analysis and Planning		
Active registration number / state / expiration date	CP, GIS Certificate, Penn State University) #1344 Expiration: 12/14/2027		
Year registered	2020	Discipline	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Mapping - Imagery
Contract role(s) / brief description of responsibilities	Project Setup & Training Manager: - Lead setup of geospatial projects, including workflows, tools, and data standards - Develop and deliver training programs for technical staff and new hires - Collaborate with project managers to align setup and training with client requirements		
08/17-08/22	Coastal Protection and Restoration Authority (CPRA) Services, Louisiana: The CPRA, through the Louisiana Department of Natural Resources, contracted with Fugro to provide surveying and mapping services. The services under this contract include topographic survey, bathymetric and hydrographic surveys, magnetometer surveys, geophysical surveys, benchmark establishment, maps, cross-sections, and datasets, property and right-of-way surveys, adherence to control accuracy standards.		
04/21–09/22	USACE, High Resolution Lidar, Multiple Counties, ND – Phase 9: Fugro was awarded Phase 1 and subsequent phases of the program. Phase 9 acquisition occurred, with 11,910 sq. miles of 2 ppsm lidar data acquired and processed to USACE and ASPRS/NDEP standards. Seamless integration of new data with previous phases was ensured through careful statewide tile layout management by Fugro.		
02/17-02/22	Washington DC, Office of the Chief Technology Officer (OCTO) Lidar, Imagery, 3D Planimetric Mapping and Updates, Change Analysis: Under a five-year contract, Fugro annually acquires 3-inch orthoimagery and 8ppsm lidar, updating the District's planimetric geodatabase during Spring leaf-off. Operations are coordinated with federal security agencies due to restricted airspace.		
11/16-Present	Horry County, South Carolina Orthoimagery, Obliques, Lidar and Planimetrics: Fugro designed a biennial program to acquire 6-inch ortho and oblique imagery and 2ppsm lidar during leaf-off season. The project required precise timing to avoid flooding, cloud cover, and smoke from controlled burns. Data quality exceeded ASPRS and USGS standards to support informed decision-making.		
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Nick Nearman, Raw Data Quality Control and Positioning

Firm employed by Fugro USA Land, Inc.

Name	Nick Nearman	Years of relevant experience with this employer	22
Title	Raw Data Quality Control and Positioning	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization	BA, University of Nebraska / 2000 / Geography		
Active registration number / state / expiration date	N/A		
Year registered	N/A	Discipline	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Mapping - Imagery
Contract role(s) / brief description of responsibilities	Raw Data Quality Control and Positioning: ■ Perform QA/QC on raw sensor data (Lidar, imagery, GNSS, IMU) ■ Validate data integrity, completeness, and consistency ■ Apply geodetic corrections and positioning adjustments ■ Monitor GNSS/IMU performance and flight trajectory accuracy ■ Ensure alignment with project specifications and standards ■ Document QC procedures and maintain audit trails		
08/17-08/22	Coastal Protection and Restoration Authority (CPRA) Services, Louisiana: The CPRA, through the Louisiana Department of Natural Resources, contracted with Fugro to provide surveying and mapping services. The services under this contract include topographic survey, bathymetric and hydrographic surveys, magnetometer surveys, geophysical surveys, benchmark establishment, maps, cross-sections, and datasets, property and right-of-way surveys, adherence to control accuracy standards.		
04/21-09/22	USACE, High Resolution Lidar, Multiple Counties, ND – Phase 9: Fugro was awarded Phase 1 and subsequent phases of the program. Phase 9 acquisition occurred, with 11,910 sq. miles of 2 ppsm lidar data acquired and processed to USACE and ASPRS/NDEP standards. Seamless integration of new data with previous phases was ensured through careful statewide tile layout management by Fugro.		
02/17-02/22	Washington DC, Office of the Chief Technology Officer (OCTO) Lidar, Imagery, 3D Planimetric Mapping and Updates, Change Analysis: Under a five-year contract, Fugro annually acquires 3-inch orthoimagery and 8ppsm lidar, updating the District's planimetric geodatabase during Spring leaf-off. Operations are coordinated with federal security agencies due to restricted airspace.		
11/16-Present	Horry County, South Carolina Orthoimagery, Obliques, Lidar and Planimetrics: Fugro designed a biennial program to acquire 6-inch ortho and oblique imagery and 2ppsm lidar during leaf-off season. The project required precise timing to avoid flooding, cloud cover, and smoke from controlled burns. Data quality exceeded ASPRS and USGS standards to support informed decision-making.		
01/22-09/22	Texas Water Development Board - Llano River TopoBathymetric Lidar and Portions of Ellis, Hill, Johnson, and Navarro Counties, Texas: Fugro acquired QL2+ topographic lidar (4ppsm) and bathymetric lidar (6ppsm) over the Llano River to produce a 1-meter resolution topobathymetric DEM. The data supports dam safety, floodplain management, water modeling, stream restoration, and emergency response.		

David Stuck, Imagery Department Supervisor

Firm employed by Fugro USA Land, Inc.

Name	David Stuck	Years of relevant experience with this employer	29
Title	Imagery Department Supervisor	Years of relevant experience with other employer(s)	1
Degree(s) / Years / Specialization	Highschool graduate, Rapid City Central High, Rapid City, SD		
Active registration number / state / expiration date	N/A		
Year registered	N/A	Discipline	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Mapping - Imagery
Contract role(s) / brief description of responsibilities	Imagery Department Supervisor: ■ Supervise imagery acquisition, processing, and QA/QC workflows ■ Manage team of imagery analysts and technicians ■ Ensure delivery of high-quality orthoimagery and raster products ■ Coordinate with flight operations and project managers on data requirements ■ Maintain imagery standards, metadata, and documentation ■ Oversee software tools and processing pipelines for imagery production		
08/17-08/22	Coastal Protection and Restoration Authority (CPRA) Services, Louisiana: The CPRA, through the Louisiana Department of Natural Resources, contracted with Fugro to provide surveying and mapping services. The services under this contract include topographic survey, bathymetric and hydrographic surveys, magnetometer surveys, geophysical surveys, benchmark establishment, maps, cross-sections, and datasets, property and right-of-way surveys, adherence to control accuracy standards.		
04/21-09/22	USACE, High Resolution Lidar, Multiple Counties, ND – Phase 9: Fugro was awarded Phase 1 and subsequent phases of the program. Phase 9 acquisition occurred, with 11,910 sq. miles of 2 ppsm lidar data acquired and processed to USACE and ASPRS/NDEP standards. Seamless integration of new data with previous phases was ensured through careful statewide tile layout management by Fugro.		
02/17-02/22	Washington DC, Office of the Chief Technology Officer (OCTO) Lidar, Imagery, 3D Planimetric Mapping and Updates, Change Analysis: Under a five-year contract, Fugro annually acquires 3-inch orthoimagery and 8ppsm lidar, updating the District's planimetric geodatabase during Spring leaf-off. Operations are coordinated with federal security agencies due to restricted airspace.		
11/16-Present	Horry County, South Carolina Orthoimagery, Obliques, Lidar and Planimetrics: Fugro designed a biennial program to acquire 6-inch ortho and oblique imagery and 2ppsm lidar during leaf-off season. The project required precise timing to avoid flooding, cloud cover, and smoke from controlled burns. Data quality exceeded ASPRS and USGS standards to support informed decision-making.		
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Chris Fought, Aerial Sensor Technician

Firm employed by Fugro USA Land, Inc.

Name	Chris Fought	Years of relevant experience with this employer	17
Title	Aerial Sensor Technician	Years of relevant experience with other employer(s)	1
Degree(s) / Years / Specialization	South Plains Jr College -- IT program / 1995 Central New Mexico College – GIS / 2005-2006		
Active registration number / state / expiration date	N/A		
Year registered	N/A	Discipline	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Mapping - Imagery
Contract role(s) / brief description of responsibilities	Aerial Sensor Technician: - Operate and monitor airborne sensors (Lidar, cameras, GNSS/IMU) during flight missions - Perform pre-flight setup and post-flight data offloading - Ensure sensor calibration, synchronization, and functionality - Troubleshoot equipment issues and assist with in-flight adjustments - Maintain sensor logs, metadata, and operational documentation		
08/17-08/22	Coastal Protection and Restoration Authority (CPRA) Services, Louisiana: The CPRA, through the Louisiana Department of Natural Resources, contracted with Fugro to provide surveying and mapping services. The services under this contract include topographic survey, bathymetric and hydrographic surveys, magnetometer surveys, geophysical surveys, benchmark establishment, maps, cross-sections, and datasets, property and right-of-way surveys, adherence to control accuracy standards.		
04/21–09/22	USACE, High Resolution Lidar, Multiple Counties, ND – Phase 9: Fugro was awarded Phase 1 and subsequent phases of the program. Phase 9 acquisition occurred, with 11,910 sq. miles of 2 ppsm lidar data acquired and processed to USACE and ASPRS/NDEP standards. Seamless integration of new data with previous phases was ensured through careful statewide tile layout management by Fugro.		
02/17-02/22	Washington DC, Office of the Chief Technology Officer (OCTO) Lidar, Imagery, 3D Planimetric Mapping and Updates, Change Analysis: Under a five-year contract, Fugro annually acquires 3-inch orthoimagery and 8ppsm lidar, updating the District's planimetric geodatabase during Spring leaf-off. Operations are coordinated with federal security agencies due to restricted airspace.		
11/16-Present	Horry County, South Carolina Orthoimagery, Obliques, Lidar and Planimetrics: Fugro designed a biennial program to acquire 6-inch ortho and oblique imagery and 2ppsm lidar during leaf-off season. The project required precise timing to avoid flooding, cloud cover, and smoke from controlled burns. Data quality exceeded ASPRS and USGS standards to support informed decision-making.		
01/22-09/22	Texas Water Development Board - Llano River TopoBathymetric Lidar and Portions of Ellis, Hill, Johnson, and Navarro Counties, Texas: Fugro acquired QL2+ topographic lidar (4ppsm) and bathymetric lidar (6ppsm) over the Llano River to produce a 1-meter resolution topobathymetric DEM. The data supports dam safety, floodplain management, water modeling, stream restoration, and emergency response.		

Riley Forsyth, Flight Coordinator

Firm employed by Fugro USA Land, Inc.

Name	Riley Forsyth	Years of relevant experience with this employer	10
Title	Flight Coordinator	Years of relevant experience with other employer(s)	5
Degree(s) / Years / Specialization	MS, Geography, South Dakota State University / 2015 BS, Geography and GIS, South Dakota State University / 2010		
Active registration number / state / expiration date	N/A		
Year registered	N/A	Discipline	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Mapping - Imagery
Contract role(s) / brief description of responsibilities	Flight Coordinator: - Schedule and coordinate aerial missions with pilots and project teams - Prepare flight plans based on project specifications and weather conditions - Ensure proper sensor configurations and equipment readiness - Track flight progress and maintain mission logs - Monitor compliance with safety protocols and operational standards		
08/17-08/22	Coastal Protection and Restoration Authority (CPRA) Services, Louisiana: The CPRA, through the Louisiana Department of Natural Resources, contracted with Fugro to provide surveying and mapping services. The services under this contract include topographic survey, bathymetric and hydrographic surveys, magnetometer surveys, geophysical surveys, benchmark establishment, maps, cross-sections, and datasets, property and right-of-way surveys, adherence to control accuracy standards.		
04/21-09/22	USACE, High Resolution Lidar, Multiple Counties, ND – Phase 9: Fugro was awarded Phase 1 and subsequent phases of the program. Phase 9 acquisition occurred, with 11,910 sq. miles of 2 ppsm lidar data acquired and processed to USACE and ASPRS/NDEP standards. Seamless integration of new data with previous phases was ensured through careful statewide tile layout management by Fugro.		
02/17-02/22	Washington DC, Office of the Chief Technology Officer (OCTO) Lidar, Imagery, 3D Planimetric Mapping and Updates, Change Analysis: Under a five-year contract, Fugro annually acquires 3-inch orthoimagery and 8ppsm lidar, updating the District's planimetric geodatabase during Spring leaf-off. Operations are coordinated with federal security agencies due to restricted airspace.		
11/16-Present	Horry County, South Carolina Orthoimagery, Obliques, Lidar and Planimetrics: Fugro designed a biennial program to acquire 6-inch ortho and oblique imagery and 2ppsm lidar during leaf-off season. The project required precise timing to avoid flooding, cloud cover, and smoke from controlled burns. Data quality exceeded ASPRS and USGS standards to support informed decision-making.		
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Todd Giesey, Technical Lead Aerotriangulation

Firm employed by Fugro USA Land, Inc.

Name	Todd Giesey	Years of relevant experience with this employer	35
Title	Technical Lead Aerotriangulation	Years of relevant experience with other employer(s)	1
Degree(s) / Years / Specialization	AS, Computer-Aided-Design, Western Dakota Tech / 1989		
Active registration number / state / expiration date	N/A		
Year registered	N/A	Discipline	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Mapping - Imagery
Contract role(s) / brief description of responsibilities	Technical Lead Aerotriangulation: - Oversee aerotriangulation workflows for aerial imagery alignment and accuracy - Manage tie point generation, block adjustment, and bundle solutions - Ensure geospatial accuracy and consistency across image datasets - Perform QA/QC on aerotriangulation outputs and error reports - Collaborate with photogrammetry, Lidar, and GIS teams for data integration - Document processes and maintain alignment with project specifications		
08/17-08/22	Coastal Protection and Restoration Authority (CPRA) Services, Louisiana: The CPRA, through the Louisiana Department of Natural Resources, contracted with Fugro to provide surveying and mapping services. The services under this contract include topographic survey, bathymetric and hydrographic surveys, magnetometer surveys, geophysical surveys, benchmark establishment, maps, cross-sections, and datasets, property and right-of-way surveys, adherence to control accuracy standards.		
04/21-09/22	USACE, High Resolution Lidar, Multiple Counties, ND – Phase 9: Fugro was awarded Phase 1 and subsequent phases of the program. Phase 9 acquisition occurred, with 11,910 sq. miles of 2 ppsm lidar data acquired and processed to USACE and ASPRS/NDEP standards. Seamless integration of new data with previous phases was ensured through careful statewide tile layout management by Fugro.		
02/17-02/22	Washington DC, Office of the Chief Technology Officer (OCTO) Lidar, Imagery, 3D Planimetric Mapping and Updates, Change Analysis: Under a five-year contract, Fugro annually acquires 3-inch orthoimagery and 8ppsm lidar, updating the District's planimetric geodatabase during Spring leaf-off. Operations are coordinated with federal security agencies due to restricted airspace.		
01/22-09/22	Texas Water Development Board - Llano River TopoBathymetric Lidar and Portions of Ellis, Hill, Johnson, and Navarro Counties, Texas: Fugro acquired QL2+ topographic lidar (4ppsm) and bathymetric lidar (6ppsm) over the Llano River to produce a 1-meter resolution topobathymetric DEM. The data supports dam safety, floodplain management, water modeling, stream restoration, and emergency response.		
01/23-09/23	City of Waco/McLennan County 2023 Impervious Surface Mapping: Fugro successfully completed a geospatial data acquisition and processing project covering approximately 1,305 square miles. The scope included high-resolution 6-inch orthoimagery, Lidar data at 4 points per square meter (PPSM) for the county and 8 PPSM for the city, and detailed 1"=100' scale planimetric mapping.		

David L. Jendras, Technical Lead GeospatialFirm employed by **Fugro USA Land, Inc.**

Name	David L. Jendras	Years of relevant experience with this employer	16
Title	Technical Lead Geospatial	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization	BA in Geography & Environmental Planning, Towson University / 2008 GISP, Northeastern University / 2016		
Active registration number / state / expiration date	Geographic Information Systems Professional Studies Certificate (GISP)		
Year registered	2016	Discipline	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Mapping - Imagery
Contract role(s) / brief description of responsibilities	Technical Lead Geospatial: ■ Lead development and implementation of geospatial workflows and solutions ■ Oversee integration of remote sensing data (LiDAR, imagery, GNSS) into GIS platforms ■ Ensure spatial data accuracy, consistency, and compliance with standards ■ Collaborate with cross-functional teams on project planning and execution ■ Provide technical guidance on projections, coordinate systems, and data models		
08/17-08/22	Coastal Protection and Restoration Authority (CPRA) Services, Louisiana: The CPRA, through the Louisiana Department of Natural Resources, contracted with Fugro to provide surveying and mapping services. The services under this contract include topographic survey, bathymetric and hydrographic surveys, magnetometer surveys, geophysical surveys, benchmark establishment, maps, cross-sections, and datasets, property and right-of-way surveys, adherence to control accuracy standards.		
02/17-02/22	Washington DC, Office of the Chief Technology Officer (OCTO) Lidar, Imagery, 3D Planimetric Mapping and Updates, Change Analysis: Under a five-year contract, Fugro annually acquires 3-inch orthoimagery and 8ppsm lidar, updating the District's planimetric geodatabase during Spring leaf-off. Operations are coordinated with federal security agencies due to restricted airspace.		
11/16-Present	Horry County, South Carolina Orthoimagery, Obliques, Lidar and Planimetrics: Fugro designed a biennial program to acquire 6-inch ortho and oblique imagery and 2ppsm lidar during leaf-off season. The project required precise timing to avoid flooding, cloud cover, and smoke from controlled burns. Data quality exceeded ASPRS and USGS standards to support informed decision-making.		
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Lynn Baker, CP, CPT, Manager of Cartographic Editing

Firm employed by

Name	Lynn Baker, CP, CPT	Years of relevant experience with this employer	47
Title	Manager of Cartographic Editing	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization	BA, Fine Arts/Minor in Cartography, University of Maryland, 1975		
Active registration number / state / expiration date	ASPRS Certified Photogrammetrist #1343ASPRS Certified Photogrammetric Technologist # 1332		
Year registered	1975	Discipline	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Mapping - Imagery
Contract role(s) / brief description of responsibilities	Manager of Cartographic Editing: ■ Lead cartographic editing team and workflows ■ Ensure accuracy and consistency of map products ■ Maintain cartographic standards and tools ■ Review and approve final map outputs ■ Coordinate with cross-functional teams on map requirements		
08/17-08/22	Coastal Protection and Restoration Authority (CPRA) Services, Louisiana: The CPRA, through the Louisiana Department of Natural Resources, contracted with Fugro to provide surveying and mapping services. The services under this contract include topographic survey, bathymetric and hydrographic surveys, magnetometer surveys, geophysical surveys, benchmark establishment, maps, cross-sections, and datasets, property and right-of-way surveys, adherence to control accuracy standards.		
04/21-09/22	USACE, High Resolution Lidar, Multiple Counties, ND – Phase 9: Fugro was awarded Phase 1 and subsequent phases of the program. Phase 9 acquisition occurred, with 11,910 sq. miles of 2 ppsm lidar data acquired and processed to USACE and ASPRS/NDEP standards. Seamless integration of new data with previous phases was ensured through careful statewide tile layout management by Fugro.		
02/17-02/22	Washington DC, Office of the Chief Technology Officer (OCTO) Lidar, Imagery, 3D Planimetric Mapping and Updates, Change Analysis: Under a five-year contract, Fugro annually acquires 3-inch orthoimagery and 8ppsm lidar, updating the District's planimetric geodatabase during Spring leaf-off. Operations are coordinated with federal security agencies due to restricted airspace.		
11/16-Present	Horry County, South Carolina Orthoimagery, Obliques, Lidar and Planimetrics: Fugro designed a biennial program to acquire 6-inch ortho and oblique imagery and 2ppsm lidar during leaf-off season. The project required precise timing to avoid flooding, cloud cover, and smoke from controlled burns. Data quality exceeded ASPRS and USGS standards to support informed decision-making.		
01/22-09/22	Texas Water Development Board - Llano River TopoBathymetric Lidar and Portions of Ellis, Hill, Johnson, and Navarro Counties, Texas: Fugro acquired QL2+ topographic lidar (4ppsm) and bathymetric lidar (6ppsm) over the Llano River to produce a 1-meter resolution topobathymetric DEM. The data supports dam safety, floodplain management, water modeling, stream restoration, and emergency response.		

Debbie Wenner, GIS Analyst/Compilation SpecialistFirm employed by **Fugro USA Land, Inc.**

Name	Debbie Wenner	Years of relevant experience with this employer	20
Title	GIS Analyst/Compilation Specialist	Years of relevant experience with other employer(s)	9
Degree(s) / Years / Specialization	MS, Geography, Virginia Polytechnic Institute and State University / 2001 BA, Geography, West Virginia University / 1995		
Active registration number / state / expiration date	N/A		
Year registered	N/A	Discipline	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Mapping - Imagery
Contract role(s) / brief description of responsibilities	GIS Analyst/Compilation Specialist: ■ Compile, analyze, and process geospatial data from imagery, Lidar, and other sources ■ Create and maintain GIS datasets, maps, and spatial products ■ Digitize features and extract planimetric and topographic elements ■ Document processes and maintain metadata for compiled datasets		
08/17-08/22	Coastal Protection and Restoration Authority (CPRA) Services, Louisiana: The CPRA, through the Louisiana Department of Natural Resources, contracted with Fugro to provide surveying and mapping services. The services under this contract include topographic survey, bathymetric and hydrographic surveys, magnetometer surveys, geophysical surveys, benchmark establishment, maps, cross-sections, and datasets, property and right-of-way surveys, adherence to control accuracy standards.		
04/21–09/22	USACE, High Resolution Lidar, Multiple Counties, ND – Phase 9: Fugro was awarded Phase 1 and subsequent phases of the program. Phase 9 acquisition occurred, with 11,910 sq. miles of 2 ppsm lidar data acquired and processed to USACE and ASPRS/NDEP standards. Seamless integration of new data with previous phases was ensured through careful statewide tile layout management by Fugro.		
11/16-Present	Horry County, South Carolina Orthoimagery, Obliques, Lidar and Planimetrics: Fugro designed a biennial program to acquire 6-inch ortho and oblique imagery and 2ppsm lidar during leaf-off season. The project required precise timing to avoid flooding, cloud cover, and smoke from controlled burns. Data quality exceeded ASPRS and USGS standards to support informed decision-making.		
01/22-09/22	Texas Water Development Board - Llano River TopoBathymetric Lidar and Portions of Ellis, Hill, Johnson, and Navarro Counties, Texas: Fugro acquired QL2+ topographic lidar (4ppsm) and bathymetric lidar (6ppsm) over the Llano River to produce a 1-meter resolution topobathymetric DEM. The data supports dam safety, floodplain management, water modeling, stream restoration, and emergency response.		
01/23-09/23	City of Waco/McLennan County 2023 Impervious Surface Mapping: Fugro successfully completed a geospatial data acquisition and processing project covering approximately 1,305 square miles. The scope included high-resolution 6-inch orthoimagery, Lidar data at 4 points per square meter (PPSM) for the county and 8 PPSM for the city, and detailed 1"=100' scale planimetric mapping.		

Chris Harlan, Survey Project ManagerFirm employed by **McKim & Creed, Inc.**

Name	Chris Harlan	Years of relevant experience with this employer	1
Title	Survey Project Manager	Years of relevant experience with other employer(s)	20
Degree(s) / Years / Specialization	B.S., Civil Engineering, Louisiana State University		
Active registration number / state / expiration date	PLS / LA / #5281, PS / MS / #33773, PLS / AL / #50475, PS / NM / #29051, PLS / WI / #4029, RPLS / TX / #7118, LS / AZ / #82279, PLS / IL / #35004130, PSM / FL / #7637, LS / KY / #4772, LS / GA / #LS003605, PLS / WY / #21494		
Year registered	2022	Discipline	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Mapping - Imagery Other (must specify) Topographic Survey – Ground Control
Contract role(s) / brief description of responsibilities	Mr. Harlan will conduct land and construction surveys, provide accurate measurements and site layouts, and ensure compliance with project specifications and regulations to support successful project delivery.		
8/25-9/25	Data collection and processing, performing quality assurance and quality control (QA/QC), preparing project deliverables		
11/23-9/25	Planning and development, land surveying, bathymetric surveying		
8/23-1/24	Right-Of-Way, Route, and property line surveys		
2/24- 4/24	Boundary surveys, Right-of-Way surveys		

Robert Crawshaw, Director of Aerial MappingFirm employed by **McKim & Creed, Inc.**

Name	Robert Crawshaw	Years of relevant experience with this employer	13 years
Title	Director of Aerial Mapping	Years of relevant experience with other employer(s)	15 years
Degree(s) / Years / Specialization	B.A., Geographic and Environmental Planning, Southern Illinois University		
Active registration number / state / expiration date	Certified Photogrammetrist, #R1321		
Year registered	2007	Discipline	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Mapping - Imagery Other (must specify) Topographic Survey – Ground Control
Contract role(s) / brief description of responsibilities	Mr. Crawshaw will capture and processes imagery to create accurate maps and spatial data for engineering and construction project needs.		
4/20 – 5/21	Single-beam, multi-beam and side scan sonar data, including bridge structures, scour and bathymetry		
10/21 – 6/22	Airborne sensing and mapping lidar services for 7 existing transmission line routes		
7/22- 2/23	Aerial photogrammetry, aerial lidar, topographic surveys		

Justin Ohlschlager, Remote Sensing Analyst

Firm employed by [McKim & Creed, Inc.](#)

Name	Justin Ohlschlager	Years of relevant experience with this employer	10 years
Title	Remote Sensing Analyst	Years of relevant experience with other employer(s)	2 years
Degree(s) / Years / Specialization	B.S., Geological Science, Portland State University		
Active registration number / state / expiration date	Certified FAA Part 107 Remote Pilot #3980574, Certified Survey Technician Level I #1115-5157		
Year registered	2015	Discipline	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Mapping - Imagery Other (must specify) Topographic Survey – Ground Control
Contract role(s) / brief description of responsibilities	Mr. Ohlschlager will collect, process, and interpret satellite and aerial data to generate actionable insights and support project planning, environmental analysis, and decision-making.		
1/22-7/22	3D and vector data collection, topographic and planimetric mapping		
4/19 – 12/19	Aerial Lidar survey and data processing		
5/21 – 9/23	Partial boundary, topographic, and existing condition ALTA/NSPS survey on a 164.67-acre parcel		

Oliver Francis, Regional Business Line Director, Land - North America

Firm employed by Fugro USA Land, Inc.

Name	Oliver Francis	Years of relevant experience with this employer	17
Title	Regional Business Line Director, Land - North America	Years of relevant experience with other employer(s)	3
Degree(s) / Years / Specialization	University of Leicester, BS Hons – Geophysics 1999 - 2002 University of Leicester, MS – Geography 2003 - 2004		
Active registration number / state / expiration date	N/A		
Year registered	N/A	Discipline	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Mapping - Imagery Other (must specify) Topographic Survey – Ground Control
Contract role(s) / brief description of responsibilities	Regional Business Line Director, Land - North America: ■ Set strategic direction for the Land business line ■ Drive revenue growth and market expansion ■ Oversee project delivery and operational performance ■ Manage P&L and financial targets ■ Ensure compliance with safety and quality standards ■ Align regional goals with global business objectives		
08/17-08/23	Coastal Protection and Restoration Authority (CPRA) Services, Louisiana: The CPRA, through the Louisiana Department of Natural Resources, contracted with Fugro to provide surveying and mapping services. The services under this contract include topographic survey, bathymetric and hydrographic surveys, magnetometer surveys, geophysical surveys, benchmark establishment, maps, cross-sections, and datasets, property and right-of-way surveys, adherence to control accuracy standards.		
04/21–09/22	USACE, High Resolution Lidar, Multiple Counties, ND – Phase 9: Fugro was awarded Phase 1 and subsequent phases of the program. Phase 9 acquisition occurred, with 11,910 sq. miles of 2 ppsm lidar data acquired and processed to USACE and ASPRS/NDEP standards. Seamless integration of new data with previous phases was ensured through careful statewide tile layout management by Fugro.		
02/17-02/22	Washington DC, Office of the Chief Technology Officer (OCTO) Lidar, Imagery, 3D Planimetric Mapping and Updates, Change Analysis: Under a five-year contract, Fugro annually acquires 3-inch orthoimagery and 8ppsm lidar, updating the District’s planimetric geodatabase during Spring leaf-off. Operations are coordinated with federal security agencies due to restricted airspace.		
01/22-09/22	Texas Water Development Board - Llano River TopoBathymetric Lidar and Portions of Ellis, Hill, Johnson, and Navarro Counties, Texas: Fugro acquired QL2+ topographic lidar (4ppsm) and bathymetric lidar (6ppsm) over the Llano River to produce a 1-meter resolution topobathymetric DEM. The data supports dam safety, floodplain management, water modeling, stream restoration, and emergency response.		

Denis Charland, Service Line Director

Firm employed by **Fugro USA Land, Inc.**

Name	Denis Charland, PMP	Years of relevant experience with this employer	14
Title	Service Line Director	Years of relevant experience with other employer(s)	14
Degree(s) / Years / Specialization:	Master Certificate in Lean Six Sigma, York University - 2019 Bachelor of Arts, Psychology, University of Ottawa - 2002 Diploma of Cartography (GIS), Collège de L'Outaouais - 1997		
Active registration number / state / expiration date	N/A		
Year registered	2010	Discipline	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Mapping - Imagery
Contract role(s) / brief description of responsibilities	Service Line Director ■ Define and execute strategic direction for the service line ■ Drive revenue growth and profitability ■ Oversee project delivery and operational performance ■ Manage P&L and capital allocation ■ Foster client relationships and business development ■ Lead talent development and succession planning ■ Ensure compliance with HSSE and quality standards ■ Coordinate resources across regions and teams		
2015-2025	Virginia Department of Transportation (VDOT), Pavement Data & Evaluation Services: Fugro annually collects and delivers roadway condition data—including IRI, rutting, faulting, surface distress, and HD ROW imagery—across 30,000 miles. The team also delivered 1.2 million roadway assets, GPR data and analysis, and migrated 25 TB of historical data. Fugro supports VDOT's transition to 3D technology through pilot projects.		
2016-Present	Colorado Department of Transportation (CDOT), Pavement Data and Imagery Collection Project: Fugro annually collects roadway condition data—including IRI, rutting, surface distress, geometry, pavement, and HD ROW imagery—across 5,600 miles. To meet Alaska's challenging terrain, Fugro developed a 4x4 ARAN system. Optional services include asset inventory, pavement engineering, friction testing, FWD, coring, and GPR.		
2008-2024	New York State Department of Transportation (NYSDOT), Automated Pavement Data Collection: Fugro annually collects 26,500 miles of roadway data (IRI, rutting, geometry, curves, HD ROW imagery), plus 22,000 miles each of GPR and asset inventory—over 5 million assets in years 1 and 5. NYSDOT also purchased a Fugro ARAN system for project-level data collection.		

Keith Owens, Commercial Director/Technical and Business Development Manager

Firm employed by Fugro USA Land, Inc.

Name	Keith Owens,		Years of relevant experience with this employer	29
Title	Commercial Director/Technical and Business Development Manager		Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization			Highschool graduate, Middletown High School, Middletown, Maryland Course studies at Frederick Community College, Maryland	
Active registration number / state / expiration date			N/A	
Year registered	N/A	Discipline	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Mapping - Imagery Other (must specify) Topographic Survey – Ground Control	
Contract role(s) / brief description of responsibilities			Commercial Director/Technical and Business Development Manager: ■ Lead commercial strategy and client engagement ■ Identify and pursue new business opportunities ■ Oversee technical proposal development and solution design ■ Collaborate with operations and delivery teams ■ Support pricing, contract negotiation, and revenue growth ■ Align business development efforts with strategic goals	
08/17-08/23	Coastal Protection and Restoration Authority (CPRA) Services, Louisiana: The CPRA, through the Louisiana Department of Natural Resources, contracted with Fugro to provide surveying and mapping services. The services under this contract include topographic survey, bathymetric and hydrographic surveys, magnetometer surveys, geophysical surveys, benchmark establishment, maps, cross-sections, and datasets, property and right-of-way surveys, adherence to control accuracy standards.			
04/21–09/22	USACE, High Resolution Lidar, Multiple Counties, ND – Phase 9: Fugro was awarded Phase 1 and subsequent phases of the program. Phase 9 acquisition occurred, with 11,910 sq. miles of 2 ppsm lidar data acquired and processed to USACE and ASPRS/NDEP standards. Seamless integration of new data with previous phases was ensured through careful statewide tile layout management by Fugro.			
02/17-02/22	Washington DC, Office of the Chief Technology Officer (OCTO) Lidar, Imagery, 3D Planimetric Mapping and Updates, Change Analysis: Under a five-year contract, Fugro annually acquires 3-inch orthoimagery and 8ppsm lidar, updating the District’s planimetric geodatabase during Spring leaf-off. Operations are coordinated with federal security agencies due to restricted airspace.			
01/22-09/22	Texas Water Development Board - Llano River TopoBathymetric Lidar and Portions of Ellis, Hill, Johnson, and Navarro Counties, Texas: Fugro acquired QL2+ topographic lidar (4ppsm) and bathymetric lidar (6ppsm) over the Llano River to produce a 1-meter resolution topobathymetric DEM. The data supports dam safety, floodplain management, water modeling, stream restoration, and emergency response.			

Heather Geyer, Technical and Business Development Manager

Firm employed by **Fugro USA Land, Inc.**

Name	Heather Geyer	Years of relevant experience with this employer	2
Title	Technical and Business Development Manager	Years of relevant experience with other employer(s)	18
Degree(s) / Years / Specialization	Trinity College Dublin, Dublin, Ireland / Master Of Science, Biodiversity And Conservation (With Distinction), -2011 Suny College Of Environmental Science And Forestry, Syracuse, Ny, , Bachelor Of Science, Wildlife Science (Cum Laude) - 2006		
Active registration number / state / expiration date	N/A		
Year registered	N/A	Discipline	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Mapping - Imagery Other (must specify) Topographic Survey – Ground Control
Contract role(s) / brief description of responsibilities	Technical and Business Development Manager: - Identify and pursue new business opportunities - Develop technical solutions aligned with client needs - Lead proposal strategy and content development - Collaborate with cross-functional teams to support delivery - Build and maintain client relationships - Support pricing and contract negotiations - Align business development efforts with strategic goals		
11/16-Present	Horry County, South Carolina Orthoimagery, Obliques, Lidar and Planimetrics: Fugro designed a biennial program to acquire 6-inch ortho and oblique imagery and 2ppsm lidar during leaf-off season. The project required precise timing to avoid flooding, cloud cover, and smoke from controlled burns. Data quality exceeded ASPRS and USGS standards to support informed decision-making.		
01/23-09/23	City of Waco/McLennan County 2023 Impervious Surface Mapping: Fugro successfully completed a geospatial data acquisition and processing project covering approximately 1,305 square miles. The scope included high-resolution 6-inch orthoimagery, Lidar data at 4 points per square meter (PPSM) for the county and 8 PPSM for the city, and detailed 1"=100' scale planimetric mapping.		
01/25-Present	Little, Middle, and Lower Brazos Basin Lidar: Fugro is supporting TxGIO in acquiring and processing high-density topographic lidar data across five major watershed basins, covering over 22,000 square miles—the largest lidar project ever tasked by TxGIO. Deliverables include lidar datasets, 2D building footprints, 3D building models, and a full suite of supporting documentation, with processing currently underway and progressing on schedule.		

Matthew W. Kline, Project Staging & Control Manager

Firm employed by **Fugro USA Land, Inc.**

Name	Matthew W. Kline	Years of relevant experience with this employer	2
Title	Project Staging & Control Manager	Years of relevant experience with other employer(s)	19
Degree(s) / Years / Specialization	Shippensburg University, Master of Science, 2008-2009 Salisbury University, Bachelor of Science, 2001-2004		
Active registration number / state / expiration date	N/A		
Year registered	N/A	Discipline	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Mapping - Imagery Other (must specify) Topographic Survey – Ground Control
Contract role(s) / brief description of responsibilities	Project Staging & Control Manager: ■ Plan and coordinate project staging and resource allocation ■ Monitor project schedules, milestones, and deliverables ■ Ensure quality control and compliance with standards ■ Manage documentation and workflow processes ■ Support cross-team coordination and communication ■ Identify and mitigate project risks and delays		
11/16-Present	Horry County, South Carolina Orthoimagery, Obliques, Lidar and Planimetrics: Fugro designed a biennial program to acquire 6-inch ortho and oblique imagery and 2ppsm lidar during leaf-off season. The project required precise timing to avoid flooding, cloud cover, and smoke from controlled burns. Data quality exceeded ASPRS and USGS standards to support informed decision-making.		
01/23-09/23	City of Waco/McLennan County 2023 Impervious Surface Mapping: Fugro successfully completed a geospatial data acquisition and processing project covering approximately 1,305 square miles. The scope included high-resolution 6-inch orthoimagery, Lidar data at 4 points per square meter (PPSM) for the county and 8 PPSM for the city, and detailed 1"=100' scale planimetric mapping.		
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Bethany Bergan, Senior Cartographic Analyst

Firm employed by Fugro USA Land, Inc.

Name	Bethany Bergan	Years of relevant experience with this employer	19
Title	Senior Cartographic Analyst	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization	High School diploma - 1997		
Active registration number / state / expiration date	BAE - Socet Set/ArcGIS Quality WBT Center ISO 9001 and 14001 certificate in training and auditing Expiration: N/A		
Year registered	N/A	Discipline	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Mapping - Imagery Other (must specify) Topographic Survey – Ground Control
Contract role(s) / brief description of responsibilities	Senior Cartographic Analyst: ■ Produce and refine high-quality maps and spatial visualizations ■ Analyze geospatial data for accuracy and relevance ■ Apply cartographic principles to support project needs ■ Collaborate with GIS and technical teams on data integration ■ Ensure consistency with mapping standards and client requirements ■ Support proposal and report development with cartographic inputs		
11/16-Present	Horry County, South Carolina Orthoimagery, Obliques, Lidar and Planimetrics: Fugro designed a biennial program to acquire 6-inch ortho and oblique imagery and 2ppsm lidar during leaf-off season. The project required precise timing to avoid flooding, cloud cover, and smoke from controlled burns. Data quality exceeded ASPRS and USGS standards to support informed decision-making.		
02/17-02/22	Washington DC, Office of the Chief Technology Officer (OCTO) Lidar, Imagery, 3D Planimetric Mapping and Updates, Change Analysis: Under a five-year contract, Fugro annually acquires 3-inch orthoimagery and 8ppsm lidar, updating the District's planimetric geodatabase during Spring leaf-off. Operations are coordinated with federal security agencies due to restricted airspace.		
01/23-09/23	City of Waco/McLennan County 2023 Impervious Surface Mapping: Fugro successfully completed a geospatial data acquisition and processing project covering approximately 1,305 square miles. The scope included high-resolution 6-inch orthoimagery, Lidar data at 4 points per square meter (PPSM) for the county and 8 PPSM for the city, and detailed 1"=100' scale planimetric mapping.		

Jim Bergan, Senior Cartographic Analyst

Firm employed by Fugro USA Land, Inc.

Name	Jim Bergan	Years of relevant experience with this employer	28
Title	Senior Cartographic Analyst	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization	High School diploma - 1997		
Active registration number / state / expiration date	BAE - Socet Set/ArcGIS Quality WBT Center ISO 9001 and 14001 certificate in training and auditing Expiration: N/A		
Year registered	N/A	Discipline	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Mapping - Imagery Other (must specify) Topographic Survey – Ground Control
Contract role(s) / brief description of responsibilities	Senior Cartographic Analyst: ■ Produce and refine high-quality maps and spatial visualizations ■ Analyze geospatial data for accuracy and relevance ■ Apply cartographic principles to support project needs ■ Collaborate with GIS and technical teams on data integration ■ Ensure consistency with mapping standards and client requirements ■ Support proposal and report development with cartographic inputs		
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17. Firm Experience

Prime Reference # 1: United States Geological Survey (USGS) Coastal Protection and Restoration Authority (CPRA) of Louisiana

Firm name	Fugro USA Land, Inc.	Discipline(s)	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Survey – Ground Control	
Project name	United States Geological Survey (USGS) Coastal Protection and Restoration Authority (CPRA) of Louisiana		Firm responsibility	Prime
Project number	Owner’s name	USGS/CPRA		
Project location	Louisiana	Owner’s Project Manager	Walter Kloth, Commercial Partnership Lead	
Owner’s address, phone, email	Address: 1400 Independence Rd, Rolla, MO 65401 Phone: (303) 202-4334 Email: wkloth@usgs.gov			
Services commenced by this firm (mm/yy)	08/17	Total consultant contract cost (\$1,000’s)	N/A	
Services completed by this firm (mm/yy)	08/23	Cost of consultant services provided by this firm (\$1,000’s)	\$4,250,000.	

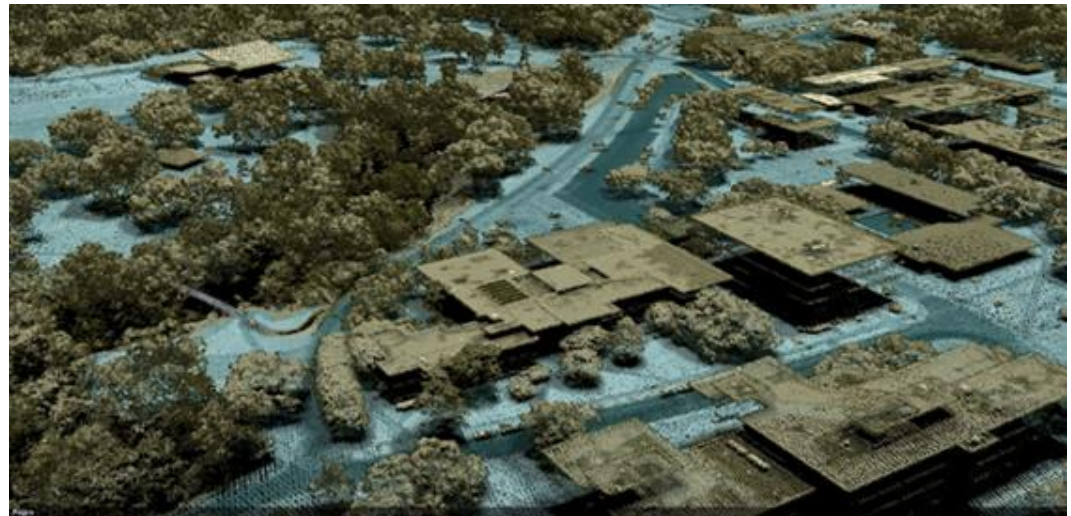
Fugro has been contracted by the Louisiana Department of Natural Resources (DNR) through CPRA to provide a wide range of surveying and mapping services in support of coastal restoration and flood risk management. CPRA, a state entity focused on building a sustainable coast, collaborates with federal, state, and local partners to protect communities and infrastructure.

Under the master contract, Fugro has delivered topographic, bathymetric, hydrographic, magnetometer, and geophysical surveys, along with property and right-of-way surveys, QA/QC, and mapping products. Notable lidar projects include QL1 aerial surveys over ~6,300 sq mi across multiple parishes and ~6,289 sq mi for the Louisiana Watershed Initiative, with deliverables such as classified point clouds, DEMs, breaklines, and intensity images.

Fugro has also supported restoration efforts through data collection and analysis for projects like the Barataria Basin Five Barrier Islands, Mid-Breton Land Bridge, Bayou La Loutre Ridge, St. Catherine Island Marsh, and Bayou Dupont Marsh. These efforts included RTK GNSS surveys, bathymetry, magnetometer investigations, GPS network adjustments, and monument installations.

Additionally, Fugro was tasked by USGS to acquire and process QL2 lidar data over ~3,805 sq mi of the Upper Delta Plain, enhancing elevation models for CoNED and supporting CPRA's planning and monitoring initiatives.

Staff: N. May, M. Buhrke, M. MacDonald, J. Flynn, M. Collins, K. Spell, A. Kennedy, L. Gordon, D. Hunter, J. Helta, T. Wang, N. Nearman, D. Stuck, C. Fought, R. Forsyth, T. Giesey, D. Jendras, L. Baker, D. Wenner.



Prime Reference # 2: Llano River TopoBathymetric Lidar and Portions of Ellis, Hill, Johnson, and Navarro Counties, Texas

Firm name	Fugro USA Land, Inc.	Discipline(s)*	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Survey – Ground Control
Project name	Llano River TopoBathymetric Lidar and Portions of Ellis, Hill, Johnson, and Navarro Counties, Texas	Firm responsibility	Prime
Project number	DIR-CPO-4634 Task Order No.: 580-22-SOW-0002	Owner's name	Texas Water Development Board (TWDB)
Project location	Texas	Owner's Project Manager	Gayla Mullins, Director of Geographic Information Services
Owner's address, phone, email	Address: 1700 North Congress Avenue, Suite 610B, Austin, TX 78701 Phone: (512)-463-7104 Email: Gayla.Mullins@twdb.texas.gov		
Services commenced by this firm (mm/yy)	01/22	Total consultant contract cost (\$1,000's)	N/A
Services completed by this firm (mm/yy)	09/22	Cost of consultant services provided by this firm (\$1,000's)	\$398,000.00

Fugro was awarded a contract to provide GIS hardware, software, and services to the State of Texas through the Department of Information Resources (DIR). Administered by the Texas Geographic Information Office (TxGIO), a division of the Texas Water Development Board (TWDB), the contract supports inter-governmental collaboration to acquire geospatial data efficiently and cost-effectively.

Llano River Topo-Bathy Lidar Survey: Under this contract, Fugro executed multiple task orders, including high-resolution topographic and bathymetric lidar, multispectral orthoimagery, AI-enhanced lidar (Sense.Lidar™), photogrammetry, planimetrics, and geospatial consulting. The Llano River project involved collecting QL2+ topographic lidar (4ppsm) and bathymetric lidar (6ppsm) to produce a 1-meter resolution merged digital elevation model. Data acquisition was timed to align with optimal environmental conditions—clear water, leaf-off, and minimal atmospheric interference—using fixed-wing aircraft equipped with RAMMS bathymetric and Riegl VQ-1560i topographic lidar systems.

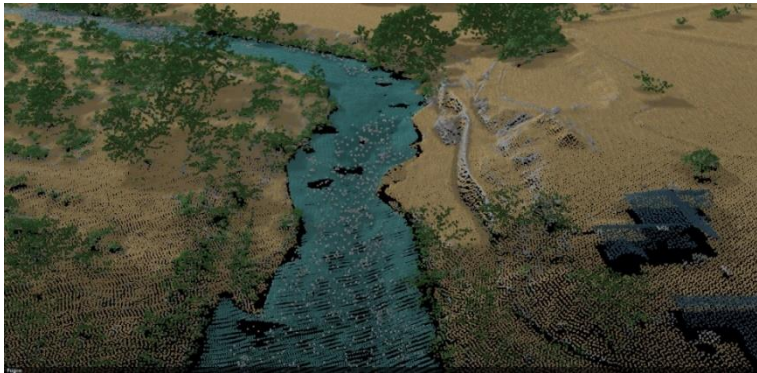
Water clarity, monitored via LCRA gauge stations and Secchi disk readings (0.2–1.2m), guided survey timing during winter's low-flow conditions. RAMMS achieved up to 3× Secchi depth penetration. Asynchronous sensor deployment ensured efficient data collection within a 3-day window to maintain consistent ground conditions. Deliverables include:

- Phase I: Schedule, Flight Plan, Ground Control Plan, Sensor Calibration Report
- Phase II: Flight Trajectories, Flight Report, Control Table, Control Survey Report
- Phase III: Pilot Data, All-Return Point Cloud, Intensity Imagery
- Phase IV: DEM Raster, Metadata

The data supports dam safety, floodplain management, water quality modeling, stream restoration, emergency response, and change detection. It contributes to Texas's ongoing geospatial data program for land and coastal mapping.

TWDB provided a PPQ highlighting Fugro's strong performance.

Staff: N. May, M. Buhrke, M. MacDonald, J. Flynn, M. Collins, K. Spell, A. Kennedy, L. Gordon, D. Hunter, J. Helta, T. Wang, N. Nearman, D. Stuck, C. Fought, R. Forsyth, T. Giesey, D. Jendras, L. Baker, D. Wenner



Prime Reference #3: USACE, High-Resolution Lidar, Multiple Counties, North Dakota, Phase 9

Firm name	Fugro USA Land, Inc.	Discipline(s)	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Survey – Ground Control
Project name	USACE, High-Resolution Lidar, Multiple Counties, North Dakota, Phase 9		Firm responsibility Prime
Project number	W912P920D0024 Order No.: W912P921F0160	Owner's name	United States Army Corps of Engineers (USACE)
Project location	North Dakota	Owner's Project Manager	Ted Stanton
Owner's address, phone, email	Address: Phone: (314)-331-8389 Email: ted.stanton@usace.army.mil		
Services commenced by this firm (mm/yy)	04/21	Total consultant contract cost (\$1,000's)	N/A
Services completed by this firm (mm/yy)	09/22	Cost of consultant services provided by this firm (\$1,000's)	\$2,357,000.00

Fugro has been a long-term consulting partner to the USACE St. Louis District, supporting flood mitigation efforts across North Dakota and Minnesota through lidar and photogrammetric surveying. Since Phase 1 began in 2010, Fugro has successfully delivered every phase of the program, now covering over 100,000 square miles.

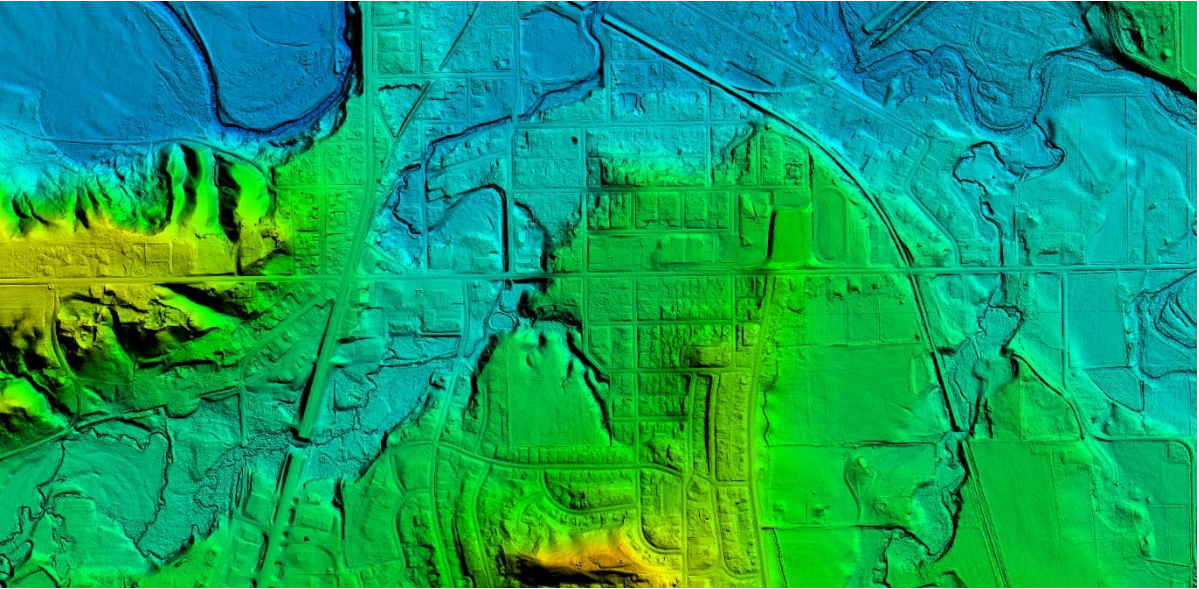
In Phase 9 alone, Fugro collected and processed lidar data over 11,910 square miles, overcoming seasonal challenges like flooding and snowpack. Using Rieg 1560ii-s sensors and its proprietary Sense.Lidar™ platform, Fugro delivered high-quality mapping products—including classified point clouds, DEMs, breaklines, building footprints, and intensity imagery—all meeting USACE, ASPRS, and USGS standards.

The data is publicly accessible and widely used for floodplain management, FEMA insurance mapping, habitat delineation, and precision agriculture. Fugro ensured seamless integration across phases by managing a statewide tile layout and aligning new data with previous collections.

Ground control was provided by Terrasurv, Fugro's small business partner, with over 500 checkpoints surveyed to support product accuracy. Final data achieved 3.5 cm RMSE—well below the required threshold—and was fully compatible with industry-standard GIS and CAD software.

Fugro's proactive communication and project management earned "Very Good" CPAR ratings, with stakeholders praising the team's coordination and responsiveness. The most recent phases focus on higher-density data and urban areas, with expanded use by federal agencies through shared data efficiencies.

Staff: N. May, M. Buhrke, M. MacDonald, J. Flynn, M. Collins, K. Spell, A. Kennedy, L. Gordon, D. Hunter, J. Helta, T. Wang, N. Nearman, D. Stuck, C. Fought, R. Forsyth, T. Giesey, D. Jendras, L. Baker, D. Wenner



Prime Reference # 4: Washington DC, Office of the Chief Technology Officer (OCTO) Lidar, Imagery, 3D Planimetric Mapping and Updates, Change Analysis



Firm name	Fugro USA Land, Inc.	Discipline(s)	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Mapping - Imagery Other (must specify) Topographic Survey – Ground Control	
Project name	Washington DC, Office of the Chief Technology Officer (OCTO) Lidar, Imagery, 3D Planimetric Mapping and Updates, Change Analysis		Firm responsibility	Prime
Project number	CW106630 Order No.: RK229839	Owner's name	Washington, DC, OCTO	
Project location	Washington DC	Owner's Project Manager	Matt Crossett	
Owner's address, phone, email	Address: 200 I Street, SE, Washington, D.C. 20003 Phone: (202) 442-7100 Email: matthew.crossett@dc.gov			
Services commenced by this firm (mm/yy)	02/17	Total consultant contract cost (\$1,000's)	N/A	
Services completed by this firm (mm/yy)	02/22	Cost of consultant services provided by this firm (\$1,000's)	\$935,000.00	

Fugro acquired 3-inch, 4-band true orthoimagery, and QL2 lidar over the Washington DC and collected 3-D 1"=100' scale planimetric data for the purpose of updating the District's orthoimagery base map and GIS layers. Fugro acquired the imagery in the Spring of 2017, 2019, and 2021 during leaf-off conditions. Fugro generated stereopair imagery and compiled 3D planimetric features, updating their GIS database. The process included management of the existing data provided by the District, generating stereo-pair imagery, performing a change analysis and compiling features to update the Esri geodatabase. QL2 lidar was acquired in the Spring of 2018 during leaf-off conditions and QL1 lidar in the Summer of 2020. For on-time delivery, Fugro has utilized an aerial acquisition partner and a DC-licensed land surveyor responsible for ground controls. Fugro was recently awarded a new contract (\$897,900) with the District in 2023 collected new imagery and lidar in Spring 2024.

Staff: N. May, M. Buhrke, M. MacDonald, J. Flynn, M. Collins, K. Spell, A. Kennedy, L. Gordon, D. Hunter, J. Helta, T. Wang, N. Nearman, D. Stuck, C. Fought, R. Forsyth, T. Giese, D. Jendras, L. Baker, D. Wenner

Prime Reference # 5: Horry County, South Carolina Orthos, Obliques, Lidar, and Planimetrics

Firm name	Fugro USA Land, Inc.	Discipline(s)*	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Mapping - Imagery Other (must specify) Topographic Survey – Ground Control
Project name	Horry County, South Carolina Orthos, Obliques, Lidar, and Planimetrics	Firm responsibility	Prime
Project number	Owner's name	Horry County, South Carolina	
Project location	Horry County, South Carolina	Owner's Project Manager	Justin Schools
Owner's address, phone, email	Address: 103 Elm Street Conway, SC 29526 Phone: (843)-915-7353 Email: schoolsj@horrycounty.org		
Services commenced by this firm (mm/yy)	11/16	Total consultant contract cost (\$1,000's)	N/A
Services completed by this firm (mm/yy)	11/21	Cost of consultant services provided by this firm (\$1,000's)	\$652,000.00

Horry County, SC is a coastal town with a mix of land use land cover types to include urban, suburban, rural and coastal communities. Horry County (pronounced O-ree) is one of the largest counties in the Eastern United States at over 1100 square miles and is drained by two major river systems: the Waccamaw River and the Pee Dee River. This low, sandy land along the coastal plain of South Carolina supports dense stands of long-leaf pine which fostered the area's first economic growth in the production of Naval Stores. Today, the County's major industry is tourism with the Grand Strand of Myrtle Beach attracting millions of visitors annually. The Horry County Aerial Photography Project Planimetrics contract includes the collection and processing of ground survey control points, aerial imagery (both nadir and oblique), aerial topographic lidar and 1"=100' scale planimetric updates to an existing geodatabase. Deliverables include:

- 6-inch 4-band orthoimagery
- 2 point per square meter topographic lidar
- 1"=100' scale planimetrics
- 6-inch oblique and nadir imagery and on-line viewing (PXMapper)

Conditions during project acquisition required quick aircraft mobilization to the region to acquire data prior to leaf-on conditions while managing high-water levels (flood events) along inland rivers and streams. The Horry County, SC project provides accurate, high-resolution geospatial data to the County GIS department, County Assessors, and Stormwater Management groups.

Staff: N. May, M. Buhrke, M. MacDonald, J. Flynn, M. Collins, K. Spell, A. Kennedy, L. Gordon, D. Hunter, J. Helta, T. Wang, N. Nearman, D. Stuck, C. Fought, R. Forsyth, T. Giesey, D. Jendras, L. Baker, D. Wenner



Sub-consultant Reference # 1: Bayou Manchac Regional Flood Risk Reduction

Firm name	McKim & Creed, Inc.	Discipline(s)* Data collection, Environmental, Geotech, Planning	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Survey – Ground Control
Project name	Bayou Manchac Regional Flood Risk Reduction	Firm responsibility	Prime
Project number	Owner's name	Pontchartrain Levee District	
Project location	New Orleans, Louisiana	Owner's Project Manager	Monica Gorman
Owner's address, phone, email	2069 Railroad Ave, Lutcher, LA 70071, (225) 869-9721, mgorman@leveedistrict.org		
Services commenced by this firm (mm/yy)	11/22/23	Total consultant contract cost (\$1,000's)	N/A
Services completed by this firm (mm/yy)	9/5/25	Cost of consultant services provided by this firm (\$1,000's)	\$1,937,100.00

McKim & Creed, Inc. was responsible for the development of the Bayou Manchac Regional Flood Risk Reduction Plan, a comprehensive effort to address flooding within a nearly 110,000-acre watershed benefiting Iberville, Ascension, and East Baton Rouge parishes in Louisiana. The project began with stakeholder engagement and a review of prior studies, followed by extensive field investigations, including bathymetric surveys.

Staff: C. Harlan, R. Crawshaw, J. Ohlschlager

Sub-consultant Reference # 2: Ascension Parish Sewer Regionalization

Firm name	McKim & Creed, Inc.	Discipline(s)*	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Survey – Ground Control
Project name	Ascension Parish Sewer Regionalization	Firm responsibility	Prime
Project number	Owner's name	National Water Infrastructure (NWI)	
Project location	Gonzales, Louisiana	Owner's Project Manager	N/A
Owner's address, phone, email	N/A		
Services commenced by this firm (mm/yy)	5/31/25	Total consultant contract cost (\$1,000's)	N/A
Services completed by this firm (mm/yy)	9/6/25	Cost of consultant services provided by this firm (\$1,000's)	\$3,701,136.00

McKim & Creed provided survey and subsurface utility engineering (SUE) services for the Ascension Parish Sewer Regionalization Project. The survey scope included topographic and boundary surveys along more than 8 miles of proposed sewer pipeline routes to establish existing conditions and property lines. SUE investigations were conducted to locate and map underground utilities such as gas lines and water mains, particularly in congested areas and at railroad and levee crossings. The survey data supported the identification of construction and permanent servitudes, property acquisition for pump stations and other facilities, and informed hydraulic modeling and pipeline design. Coordination with local utility companies and stakeholders was performed to verify utility as-builts and address potential conflicts. These services contributed to the development of accurate design documents and supported timely permitting and construction.

Staff: C. Harlan, R. Crawshaw, J. Ohlschlager

18. Approach and Methodology

Technical Approach and Methodology

Fugro, in partnership with McKim & Creed, Inc., proposes a proven and efficient approach to delivering high-quality geospatial services under the Statewide Topographic Mapping Program. Our team brings deep expertise in ground control, aerial imagery, and lidar acquisition and processing, supported by proprietary technologies and a robust project management framework tailored for IDIQ task order execution.

Work Execution Strategy

Planning and Acquisition: Each task order begins with a detailed review of the DOTD-provided .kmz/.kml files to define the Area of Interest (AOI) and determine the required density of Ground Control Points (GCPs), Non-Vegetated Vertical Accuracy (NVA) points, and Vegetated Vertical Accuracy (VVA) points. Ground control is performed under the supervision of a Louisiana-licensed Professional Land Surveyor and documented per USGS Lidar Base Specifications.

Aerial acquisition is conducted using aircraft equipped with survey-grade GPS, Riegl VQ-1560 II-S lidar sensors, and Phase One iXM cameras. Imagery is collected at 3" resolution across four spectral bands (RGB/NIR), and lidar is acquired to meet or exceed QL1 standards. All flights are planned to avoid leaf-on conditions, flooding, and low sun angles, unless otherwise directed by DOTD.

Data Processing: Lidar data undergoes a rigorous processing workflow that includes trajectory validation, boresight calibration, swath alignment, and classification using Fugro's proprietary cloud-based pipeline and machine learning models. Manual QA/QC ensures consistency across tiles and swaths. Deliverables include raw and classified point clouds, bare-earth DEMs, hydrographic and bridge breaklines, intensity imagery, tile index, low-confidence polygons, metadata, and all required reports.

Imagery is processed into seamless, ortho-rectified mosaics using the USNG tiling scheme. Deliverables are provided in NAD83 (2011) State Plane coordinates and NAVD88 vertical datum using the most current geoid, in GeoTIFF format or other DOTD-approved formats. IMU and GNSS calibration reports are included to validate aerial triangulation accuracy.

Quality Assurance and Control: QA/QC is embedded throughout the workflow. Initial quality checks are performed immediately after acquisition to verify coverage and GPS/IMU integrity. Any gaps are re-flown promptly. Final accuracy

assessments are conducted per ASPRS Positional Accuracy Standards and USGS specifications. All deliverables are reviewed internally and validated against ground control before submission.

Unique Resources and Proprietary Technologies

- **Cloud-Based Lidar Processing Pipeline:** Fugro’s proprietary cloud-based pipeline uses elastic compute resources to process large datasets in parallel, accelerating delivery while maintaining quality. Machine learning models classify lidar points using geospatial features (e.g., height, geometry, intensity), improving classification accuracy and consistency.
- **Sense.Lidar® Technology:** Fugro’s Sense.Lidar® system enhances classification accuracy (95–99%) and supports automated extraction of building footprints, vegetation, and hydro features. Enables scalable production of 3D digital twins and hydro-flattened DEMs.
- **Fugro Access Platform:** A secure, web-based portal for real-time project tracking, QA/QC, and stakeholder collaboration. Supports interactive issue flagging, status updates, and GIS layer integration.
- **Survey-Grade GPS Operations and Field Data Collection:** McKim & Creed provides specialized expertise in ground control surveying, utilizing calibrated survey-grade GPS equipment and experienced field crews to ensure accurate GCP, NVA, and VVA point collection in accordance with DOTD and USGS specifications.

Together, our firms offer a fully integrated solution with redundancy in aircraft, sensors, and processing capabilities to ensure schedule resilience.

Sample Task Order Schedule

Below is a representative schedule for a typical task order:

Task	Milestone/Deliverable	Responsible Party
Task Order Kickoff	Project Plan, AOI Review	Fugro / McKim & Creed
Project Planning	Flight Line Layout, Control Point Layout (.kmz/.kml)	Fugro / McKim & Creed
Ground Control Collection	Surveyor’s Certification Report	Fugro / McKim & Creed
Imagery Acquisition	Raw Imagery Files	Fugro
Imagery Processing	Ortho Mosaic (GeoTIFF)	Fugro
Lidar Acquisition	Raw Lidar Data	Fugro
Lidar Processing	Classified Point Cloud, DEM, Breaklines	Fugro / McKim & Creed

Task	Milestone/Deliverable	Responsible Party
QA/QC and Validation	Accuracy Reports, Metadata	Fugro
Final Deliverables Submission	All Electronic Files per DOTD Standards	Fugro / McKim & Creed

This schedule is scalable and adaptable to the scope and complexity of each task order. Fugro’s project management team will coordinate closely with DOTD to ensure timely execution and quality assurance at every stage.

Fugro’s Aerial and Ground-Based Geo-Data Assets

Fugro maintains a robust suite of aerial and ground-based geo-data assets in Louisiana to support LADOTD task orders with rapid, high-quality data acquisition and analysis. These include:

- **Ground-Based Vehicle:** Fugro deploys the ARAN, a state-of-the-art mobile mapping system capable of collecting comprehensive roadway condition data, including pavement distress, geometry, and asset inventory.
- **Fixed-Wing Aircraft:** Fugro operates safety-audited, crewed fixed-wing platforms equipped with advanced sensors for wide-area aerial surveys, including lidar and photogrammetry.
- **Rotor-Wing Aircraft:** Helicopter assets provide flexible access to remote or complex terrain, supporting high-resolution data collection and inspection missions.
- **Uncrewed Aerial Systems (UAS/Drones):** Fugro’s drone fleet enables precision mapping and inspection in urban, rural, and environmentally sensitive areas, offering rapid deployment and high-resolution data capture.

These assets are part of Fugro’s broader Americas fleet (including safety audited flight vendors), which includes over 150 aircraft and 22 ground-based vehicles, all operated under rigorous safety and quality standards. Fugro’s Louisiana-based teams are experienced in delivering timely, LADOTD-compliant geo-data solutions across a range of transportation infrastructure projects.



19. Workload

Firm(s)	Discipline(s) *	Contract Number and State Project Number	Project Name	Remaining Unpaid Balance**
Fugro USA Land, Inc.	Other (must specify) Topographic Mapping - Lidar Other (must specify) Topographic Survey – Ground Control	4400010335	United States Geological Survey (USGS) Coastal Protection and Restoration Authority of Louisiana (CPRA) Services	N/A
McKim & Creed, Inc.	N/A	N/A	N/A	N/A

20. Certifications/Licenses

 **LOUISIANA PROFESSIONAL
ENGINEERING & LAND SURVEYING BOARD
(LAPELS)**
9643 Brookline Avenue, Suite 121
Baton Rouge, LA 70809
Phone (225) 925-6291
www.lapels.com

Mr. Mark Keith Buhrke

License/Certificate Type - Number
PLS.0004819

Status: **Active** Exp Date: **09/30/2027**



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**State of Louisiana
Secretary of State**

**COMMERCIAL DIVISION
225.925.4704**

Fax Numbers
225.932.5317 (Admin. Services)
225.932.5314 (Corporations)
225.932.5318 (UCC)

Name **Type** **City** **Status**
FUGRO USA LAND, INC. Business Corporation (Non-Louisiana) HOUSTON Active

Previous Names
FUGRO CONSULTANTS, INC. (Changed: 1/5/2017)
FUGRO CONSULTANTS LP (Changed: 3/16/2007)
FUGRO SOUTH LP (Changed: 4/2/2004)
FUGRO SOUTH, INC. (Changed: 8/5/2002)
FUGRO-MCCLELLAND (SOUTHWEST), INC. (Changed: 5/2/2000)
MCCLELLAND CONSULTANTS (SOUTHWEST), INC. (Changed: 5/2/2000)

Business: FUGRO USA LAND, INC.
Charter Number: 34355083F
Registration Date: 5/3/1990

Domicile Address
13501 KATY FWY
SUITE 1050
HOUSTON, TX 77079

Mailing Address
13501 KATY FWY
SUITE 1050
HOUSTON, TX 77079

Principal Business Office
13501 KATY FWY
SUITE 1050
HOUSTON, TX 77079

Registered Office in Louisiana
3867 PLAZA TOWER DR.
BATON ROUGE, LA 70816

Principal Business Establishment in Louisiana
4252 RHODA DR.
BATON ROUGE, LA 70816

Status
Status: Active
Annual Report Status: In Good Standing
Qualified: 5/3/1990

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1/3

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Last Report Filed: 4/14/2025
Type: Business Corporation (Non-Louisiana)

Registered Agent(s)
Agent: C T CORPORATION SYSTEM
Address 1: 3867 PLAZA TOWER DR.
City, State, Zip: BATON ROUGE, LA 70816
Appointment Date: 5/3/1990

Officer(s) **Additional Officers: No**
Officer: DWYNE JANECEK
Title: Secretary, Treasurer
Address 1: 13501 KATY FWY
Address 2: SUITE 1050
City, State, Zip: HOUSTON, TX 77079
Officer: FARID MOTAMED
Title: Vice-President
Address 1: 13501 KATY FWY
Address 2: SUITE 1050
City, State, Zip: HOUSTON, TX 77079
Officer: MARK BUHRKE
Title: Vice-President
Address 1: 13501 KATY FWY
Address 2: SUITE 1050
City, State, Zip: HOUSTON, TX 77079
Officer: OSMAN A. EL MENCHAWI
Title: Vice-President
Address 1: 13501 KATY FWY
Address 2: SUITE 1050
City, State, Zip: HOUSTON, TX 77079
Officer: CELINE GERSON
Title: President, Director
Address 1: 13501 KATY FWY
Address 2: SUITE 1050
City, State, Zip: HOUSTON, TX 77079
Officer: MEGAN THORNTON
Title: Officer
Address 1: 13501 KATY FWY
Address 2: SUITE 1050
City, State, Zip: HOUSTON, TX 77079
Officer: OLIVER FRANCIS
Title: Director
Address 1: 13501 KATY FWY
Address 2: SUITE 1050
City, State, Zip: HOUSTON, TX 77079

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2/3

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Amendments on File (12)

Description	Date
Stmnt of Chg or Chg Prin Bus Off	2/1/1993
Name Change	5/2/2000
Name Change	5/2/2000
Name Change	8/5/2002
Conversion	8/5/2002
Name Change	4/2/2004
Name Change	3/16/2007
Conversion	3/16/2007
Stmnt of Chg or Chg Prin Bus Off	1/29/2008
Disclosure of Ownership	11/2/2009
Stmnt of Chg or Chg Prin Bus Off	10/18/2015
Name Change	1/5/2017

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3/3

Certificate of Good Standing



21. QA/QC Plan

If the advertisement requires submission of a QA/QC plan, include it here. Otherwise, leave this section blank. If a QA/QC plan is included in this section and was not required by the advertisement, it will be redacted.

Intentionally left blank.

22. Sub-consultant Information

Firm Name	Address	Point of Contact and email address	Phone Number
McKim & Creed, Inc.	8920 Business Park Dr., #150, Austin, TX 78759	Name: Rob Crawshaw Title: Aerial Mapping Sr. Project Manager Email: rcrawshaw@mckimcreed.com	(512)-916-0224 x1317

23. Location

If location is an evaluation criterion for this advertisement (see page 2) and the prime consultant intends to establish a local presence, describe the plan for doing so. Otherwise, leave this section blank. Any information included in this section will be redacted if not required by the Evaluation Criteria section of the advertisement.

Intentionally left blank.