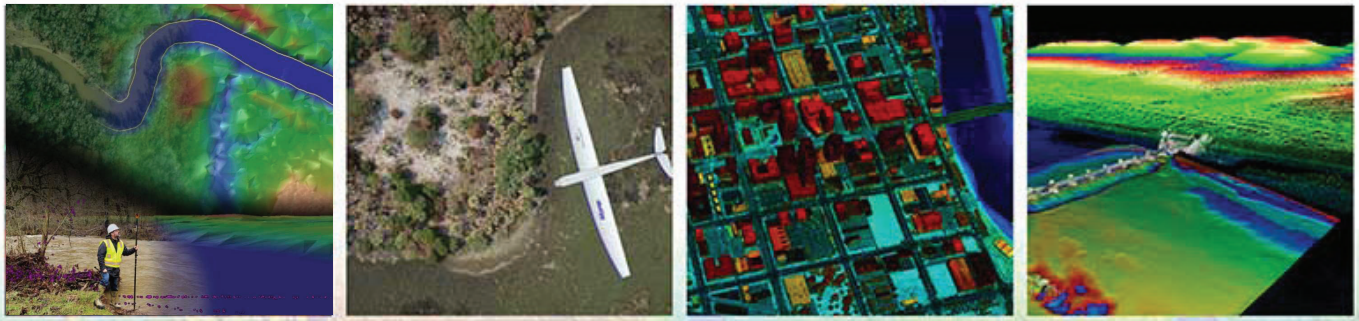
IDIQ CONTRACT FOR

WIDE-AREA LIDAR AND PHOTOGRAMMETRY SUPPORT SERVICES - FOR STATEWIDE TOPOGRAPHIC MAPPING PROGRAM

Contract No. 440003315
September 18, 2025, 3:00 PM CT
Louisiana Department of Transportation and Development (LADOTD)

WOOLPERT



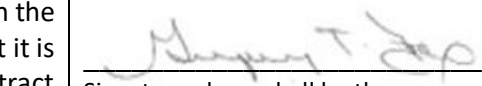
DOTD FORM: 24-102

(Revised August 11, 2025)

PROPOSAL TO PROVIDE CONSULTANT SERVICES

Prime consultant shall complete the DOTD Form 24-102 without altering the Form's text; however, the instruction and/or guidance for Sections 12 through 23 can be removed but do not remove Section title and number.

ANY CONSULTANT FAILING TO SUBMIT ANY OF THE INFORMATION REQUIRED ON THE DOTD FORM 24-102, OR PROVIDING INACCURATE INFORMATION ON THE DOTD FORM 24-102, MAY BE CONSIDERED NON-RESPONSIVE.

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	4400033158
3. State Project Number(s), if shown in the advertisement	
4. Prime consultant name **(name must match exactly as registered with the Louisiana Secretary of State (SOS) where such registration is required by law; including punctuation; include screenshot from SOS at the end of Section 20**)	Woolpert, 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)	4611
6. Prime consultant mailing address	4454 Idea Center Boulevard, Dayton, OH 45430
7. Prime consultant physical address (existing or to be established, if location is used as an evaluation criteria)	
8. Name, title, phone number, and email address of prime consultant's contract point of contact	Oliver Brown, Esq., In-House Counsel D: 937.531.1309 | oliver.brown@woolpert.com
9. Name, title, phone number, and email address of the official with signing authority for this proposal	Gregory Fox, Vice President D: 937.531.1255 | M: 937.602.3959 | greg.fox@woolpert.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	 Signature above shall be the same person listed in Section 9: September 17, 2025 Date:

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. **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.	Firm(s): N/A %:

12. Discipline Table:

As indicated in the advertisement, insert a completed table here. The percentages for the prime and sub-consultants must total 100% for each discipline, as well as the overall total percent of the contract.

The **only** disciplines to be used are listed in the drop down in each row (Appraiser, Bridge, CE&I/OV, CPM, Data Collection, Environmental, Geotech, ITS, Other (must specify), Planning, Right-of-Way, Road, Survey, and Traffic). **Remove rows as needed.**

Discipline(s)	% of Overall Contract	**PRIME** Woolpert, Inc.	**SUBCONSULTANT** Chustz Surveying, LLC	Each Discipline must total to 100%
Data Collection	70%	100%	0%	100%
Survey	30%	16.7%	83.3%	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%**	75%	25%	---

13. Team Size:

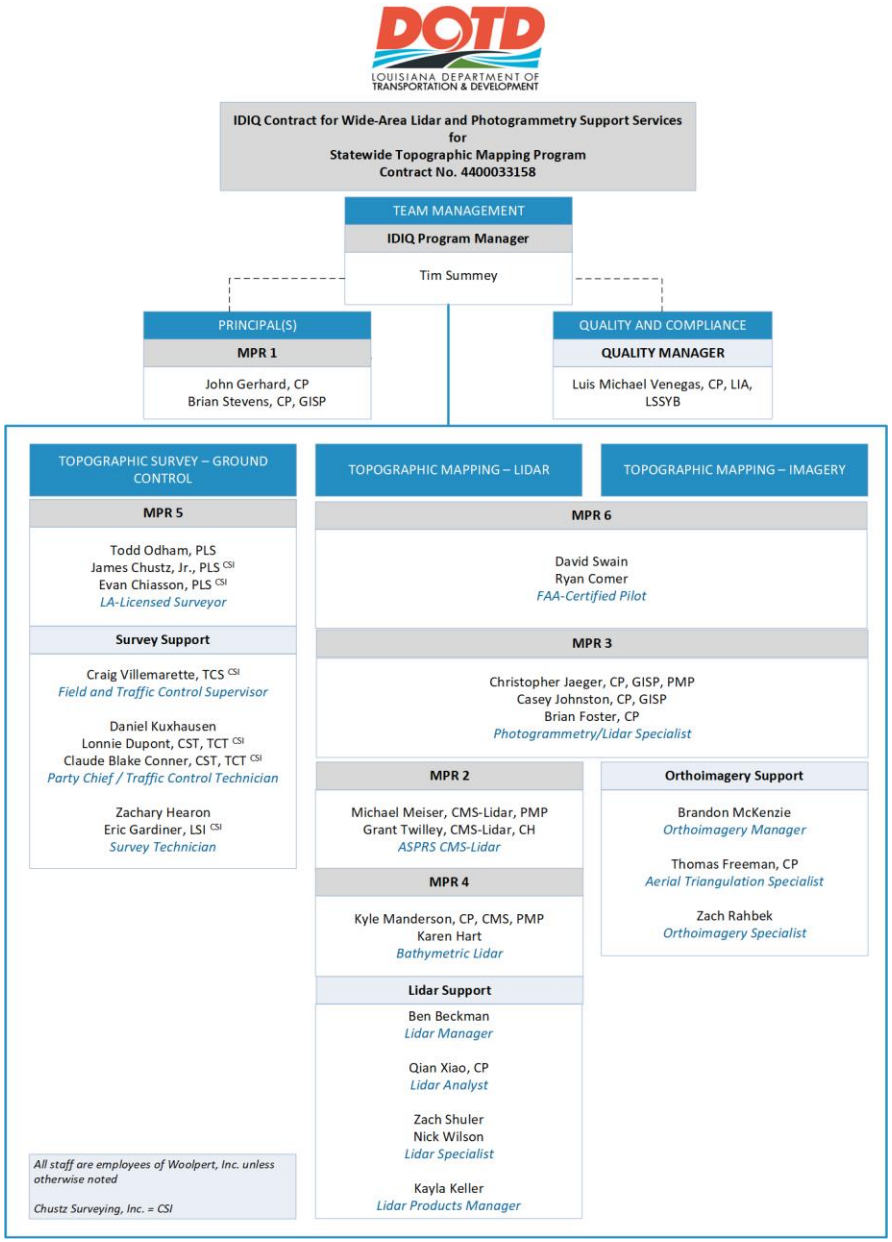
For all firms that are part of this team, indicate the approximate number of personnel to be committed to this contract, by DOTD Job Classification and the total number of personnel within the firm that could provide support, if needed. If a specialized job classification is required and not included on the DOTD job classification list, specify "Other (**must specify**)" and include the classification title inside the parentheses. The DOTD Job Classification(s) to be used can be found at the following link: https://bit.ly/DOTDJobClassifications

Firm name	DOTD Job Classification	**Number of personnel committed to this contract ***	Total number of personnel available in this DOTD Job Classification (if needed)
Woolpert, Inc.	Administrative	1	6
Woolpert, Inc.	CADD Drafter	2	12
Woolpert, Inc.	CADD Operator	1	6
Woolpert, Inc.	Engineer	0	6
Woolpert, Inc.	Engineering-Aide	0	26
Woolpert, Inc.	GIS Analyst	2	115
Woolpert, Inc.	Party Chief	1	24
Chustz Survey, LLC	Party Chief	2	7
Woolpert, Inc.	Project Office Manager	1	11
Woolpert, Inc.	Principal	2	8
Woolpert, Inc.	Senior Technician	2	12
Woolpert, Inc.	Supervisor - Other	2	6
Woolpert, Inc.	Surveyor	1	1
Chustz Surveying, LLC	Surveyor	2	3
Woolpert, Inc.	Other (Survey Technician)	2	48
Chustz Survey, LLC	Other (Survey Technician)	4	14
Woolpert, Inc.	Other (Lidar Specialist)	5	31
Woolpert, Inc.	Other (Imagery Specialist)	3	25
Woolpert, Inc.	Other (Pilot)	2	16
Woolpert, Inc.	Other (Sensor Operator)	2	16
Woolpert, Inc.	Other (ASPRS Certified Photogrammetrist)	3	11
Woolpert, Inc.	Other (ASPRS Certified Mapping Scientist-Lidar)	2	2

****For evaluation purposes only**, and as referenced in the Scope of Services on page 2 of IDIQ advertisements only, the consultant shall assume the number of concurrently active task orders specified in the advertisement and shall identify the number of **committed** personnel accordingly.*

14. Organizational Chart:

Provide an organizational chart showing ALL **relevant** prime consultant and sub-consultant (if applicable) personnel assigned to the contract, area of project responsibility for each, and reporting lines for the purposes of this contract. An individual's role does not necessarily have to match their DOTD job classification identified in Section 13.



15. Minimum Personnel Requirements:

Use the table below to identify both prime consultant and sub-consultant staff designated to work on this contract meeting the Minimum Personnel Requirements (MPRs) specified in the advertisement. Ensure the résumé reflects the required experience stated in the MPR. Make sure the P.E. discipline is also listed (highlighted in table) that is meeting the MPR; e.g. professional civil engineer should show the discipline of the license as civil if meeting that MPR.

MPR No. Do not insert wording from ad	Personnel being used to meet the MPR (Individual(s) may not satisfy more than one MPR unless specifically allowed by Attachment B of the advertisement)	Firm employed by	Type of license and discipline meeting MPR/ certification & number (Ex: PE # - Civil)	State of license	License/certification expiration date
1.	John Gerhard, CP	Woolpert, Inc.	ASPRS Certified Photogrammetrist (#R1236CP)	National	05/07/2029
1.	Brian Stevens, CP, GISP	Woolpert, Inc.	ASPRS Certified Photogrammetrist (#R1293CP) GISCI Certified GIS Professional (#67817)	National	03/27/2026 02/25/2026
2.	Michael Meiser, CMS-Lidar, PMP	Woolpert, Inc.	ASPRS CMS-Lidar (#R005L)	National	02/01/2026
2.	Grant Twilley, CH, CMS-Lidar	Woolpert, Inc.	ASPRS CMS-Lidar (#072L)	National	03/25/2027
3.	Christopher Jaeger, CP, GISP, PMP	Woolpert, Inc.	ASPRS Certified Photogrammetrist (#R1458CP) Surveyor Photogrammetrist (#0408000109) GISCI Certified GIS Professional (#45557) Project Management Professional (#1272141)	National VA National National	08/08/2030 03/31/2026 02/25/2028 06/09/2028
3.	Casey Johnston, CP, GISP	Woolpert, Inc.	ASPRS Certified Photogrammetrist (#1682CP) GISCI Certified GIS Professional (#161035)	National	06/01/2029 07/25/2027
3.	Brian Foster, CP, PMP	Woolpert, Inc.	ASPRS Certified Photogrammetrist (#R1460CP)	National	12/31/2025
4.	Kyle Manderson, CP, CMS, PMP	Woolpert, Inc.	ASPRS Certified Photogrammetrist (#R1595) ASPRS CMS-Remote Sensing (#R230RS)	National	04/05/2026 04/06/2026
4.	Karen Hart	Woolpert, Inc.	N/A	N/A	N/A
5.	Todd Odham, PLS	Woolpert, Inc.	Professional Land Surveyor (#5378)	LA	09/30/2025
5.	Jimmy Chustz, PLS	Chustz Surveying, LLC	Professional Land Surveyor (#4657)	LA	03/31/2026
5.	Evan Chiasson, PLS	Chustz Surveying, LLC	Professional Land Surveyor (#5139)	LA	03/31/2026
6.	David Swain	Woolpert, Inc.	FAA-Certified Pilot (#2045777)	National	Date of issue: 4/7/2020
6.	Ryan Comer	Woolpert, Inc.	FAA-Certified Pilot (#3885672)	National	Date of issue: 10/24/2024

16. Staff Experience:

Firm employed by	Woolpert, Inc.				
Name	John Gerhard, CP			Years of relevant experience with this employer	36
Title	Principal			Years of relevant experience with other employer(s)	4
Degree(s) / Years / Specialization			Bachelor of Science/1995/Geography		
Active registration number / state / expiration date			#R1236 / National / 05/2029		
Year registered	2009	Discipline	ASPRS Certified Photogrammetrist		
Contract role(s) / brief description of responsibilities			Principal / ASPRS Certified Photogrammetrist professionally competent in remote sensing and experienced in editing and processing large-area raw imagery into orthoimages. Exceeds the 5 years of experience minimum and meets MPR 1 (and MPR 3, as needed).		

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
06/2021 – 01/2022	**NOAA/NPS Bathymetric Lidar Data Collection at Sleeping Bear Dunes National Lakeshore | Michigan.** Project Principal and ASPRS Certified Photogrammetrist who coordinated topographic/bathymetric lidar data acquisition and processing, data delivery, schedule and budget. Scope: Woolpert acquired and processed aerial topographic lidar for ±30 square miles over Sleeping Bear Dunes in Michigan to support multiple agencies including the National Park Service, Michigan Department of Natural Resources, NOAA OCM, and other regional partner mapping and modeling needs. This project expanded the existing hydrographic coverage around Sleeping Bear Dunes by providing high-resolution lidar bathymetry. Data was collected using a Leica HawkEye 4x system to 25-meter depths at a vertical accuracy of ≤ 15 cm RMSE. Cost: $229,544
08/2022 – 09/2023	**2022 Shoreline Mapping Project, LA2208-TB-C | Louisiana.** Project Principal and ASPRS Certified Photogrammetrist who coordinated topographic/bathymetric lidar data acquisition and processing, data delivery, schedule and budget. Scope: NOAA NGS selected Woolpert to acquire and process topographic/bathymetric lidar and imagery covering ±272 square miles over the coastal Louisiana as part of supplemental funding for Hurricane Ida. This data will be used for the updating of the national shoreline and to support other mapping, charting, geodetic, and coastal uses. Lidar was collected in fall 2022 to meet a ≥ 2.0 ppsm density and 1.5 secchi depth in accordance with the QL2B as specified in the National Coastal Mapping Strategy 1.0 Document. The bathymetric lidar data was collected to support 100% coverage to meet IHO Order 1b specifications. Cost: $516,726
09/2022 – 07/2024	**Lidar and Imagery Collection, Processing and Shoreline Mapping, Chesapeake Bay Shoreline Mapping | Maryland and Virginia.** Project Principal and ASPRS Certified Photogrammetrist who coordinated topographic/bathymetric lidar data acquisition and processing, data delivery, schedule and budget. Scope: NOAA NGS selected Woolpert to provide topographic/bathymetric lidar data, digital imagery, and shoreline mapping updates over Tangier Sound in Chesapeake Bay in Maryland and Virginia and over Chincoteague Bay in Maryland and Virginia. The combined project areas covered approximately 1,738 linear miles of shoreline for photogrammetric compilation. Woolpert used a Leica HawkEye 4X (HE4X) sensor to acquire the topographic/bathymetric lidar data during time periods of optimal water clarity with a goal of reaching three Secchi depth or greater. The 25-centimeter pixel 4-band RGB/NIR imagery was acquired with a Leica Airborne Digital Sensor (ADS100). The ADS100 imagery was utilized for photogrammetric compilation of the Continually Updated Shoreline Product and for digital orthophoto production. Cost: $3,520,430
04/2018 – 04/2019	**Operations and Technical Support for the USACE and JALBTCX - JALBTCX CZMIL Sensors in Support of USACE National Coastal Mapping Program and Related USACE Mapping Requirements on the US Atlantic and Great Lakes Coasts and Survey of Puerto Rico (Post Hurricane Maria Mapping).** Project Principal and ASPRS Certified Photogrammetrist for team management involving the collection and processing of airborne topographic and bathymetric lidar, digital and hyperspectral imagery data. Scope: The scope of this task order involved the collection of topographic and bathymetric lidar, digital imagery, and hyperspectral imagery data for the coastline of Puerto Rico and the Vieques National Wildlife Refuge. The data was used to analyze the coastal impacts of Hurricane Maria. Additional requirements included ground control survey support and field data processing, as well as hardware, software, shipping, logistics, office data processing, administrative, and technical support. Cost: $$4,913,247
04/2023 – 11/2023	**San Joaquin River Restoration Program (SJRRP), U.S. Bureau of Reclamation | California.** Project Principal and ASPRS Certified Photogrammetrist for team management involving the collection and processing of airborne topographic and bathymetric lidar, digital and hyperspectral imagery data. Scope: Woolpert was contracted to acquire aerial lidar, aerial imagery, and multibeam bathymetry for two AOIs near Dos Palos and Mendota, CA, for the U.S. Bureau of Reclamation (USBR). Approximately 23 square miles of aerial imagery and seven square miles of topographic lidar were collected. Multibeam hydrographic survey data was collected in the river channels. Cost: $184,936

Firm employed by Woolpert, Inc.				
Name	Brian Stevens, CP, GISP		Years of relevant experience with this employer	29
Title	Principal		Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization			Bachelor of Science/1995/Geography-GIS	
Active registration number / state / expiration date			#R1236 / National / 03/2026 #67817 / National / 02/2026	
Year registered	03/2011 02/2015	Discipline	ASPRS Certified Photogrammetrist GISCI Certified GIS Professional	
Contract role(s) / brief description of responsibilities			Principal / ASPRS Certified Photogrammetrist professionally competent in remote sensing and experienced in editing and processing large-area raw imagery into orthoimages. Exceeds the 5 years of experience minimum and meets MPR 1 (and MPR 3, as needed).	

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
06/2017 – 06/2023	**Ohio Statewide Imagery Program (OSIP) 3 | Ohio.** Project Principal and ASPRS Certified Photogrammetrist who has managed/directed the OSIP program since its inception. Scope: The Ohio Statewide Imagery Program 3 is a contract issued by the State of Ohio for the acquisition of professional geospatial services such as orthoimagery, lidar, oblique imagery, parcel conversion, and remote sensing analysis. The scope of this contract includes the entire geographic area of the state of Ohio (41,276 square miles) and immediately adjacent territory. Cost: $1,787,244
03/2020 / 05/2023	**3-inch, 4-band Countywide Orthoimagery, 1-foot contours and Hydrology | Allen County, Ohio.** Scope: This project involved acquiring new orthoimagery covering the entire ±406.9 square mile county (to include a 100-foot buffer along the perimeter of the project area) . Aerial imagery was collected during leaf-off conditions with a 3-inch pixel resolution using an VisionMap A3 Edge digital sensor. With economy in mind, both new and existing ground control was used. Orthophotos were delivered as a countywide dataset, consisting of 1,250-foot x 1,250-foot uncompressed 8-bit, 4-band color GeoTIFF format with TIFF world files. Additional deliverables included countywide color and color infrared Gen3 MrSID (Multi resolution Seamless Image Database) images (20x and 100x compressions), FGDC CSDGM compliant metadata per file, and tile index provided in Esri shapefile format. Ownership of the data products resides with Allen County and the state of Ohio. Orthoimagery and ancillary data products produced through this contract are public domain data. Cost:
05/2022 – 10/2023	**Countywide Orthophotography, Planimetric, and Base Mapping, Macon-Bibb, Georgia.** Project Principal and ASPRS Certified Photogrammetrist for team management and production oversight for orthoimagery, building outlines and impervious surface mapping. Scope: Woolpert produced 3-inch (0.25- foot), 4-band orthoimagery and base mapping for the entire project area (267 square miles). The County was also interested in upgrading base map datasets to enhance its GIS program. Using the newly acquired orthoimagery produced for countywide base mapping services, Woolpert generated the following: Single-layer impervious dataset, with generalized building polygons, Hydrography network, and 1-foot contours utilizing existing lidar. Cost: $512,628
01/2025 – 06/2025	**Clinton County Base Mapping Program and Imagery Hosting | Ohio.** Project Principal and ASPRS Certified Photogrammetrist for maintaining a 20 plus year history with Clinton County dating back to 1999 when Woolpert provided the County with digital orthophoto-based GIS and parcel map conversion services. Scope: Most recently Woolpert collected new 4-band, 8-bit digital orthoimagery at a 3-inch and 6-inch pixel resolution to update the existing countywide orthoimagery collected by Woolpert in 2014. The project area encompassed all 412.4 square miles of the county, with an additional 100-foot buffer zone to ensure seamless mosaicking of the tiled orthophotos. Cost: $233,460
10/2020 – 09/2025	**Fairfield County Base Mapping Program | Ohio**. Project Principal and ASPRS Certified Photogrammetrist responsible for orthoimagery production services to Fairfield County since 2006. Scope: The 2020-2025 project involved a new 5-year base mapping program – Countywide 12-inch orthoimagery and CAUV crop delineation (Summer of 2020, 2022 and 2025), QL0 lidar upgrade (Fall of 2020), Countywide 3-inch orthoimagery (Spring of 2021 and 2024). The new color 8-bit, 4-band stacked digital orthoimagery encompassed the entire land area of the county, or ±508.5 square miles including a 100-foot buffer zone outside the county boundary. Cost: $583,422

Firm employed by	Woolpert, Inc.		
Name	Michael Meiser, CMS-Lidar, PMP	Years of relevant experience with this employer	19
Title	Responsible Member (Lidar Specialist)	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization		Bachelor of Science / 2004 / Geography	
Active registration number / state / expiration date		#005 / National / 02/2026 2106645 / National / N/A	
Year registered	2016 2017	Discipline	ASPRS Certified Mapping Scientist-Lidar Project Management Professional
Contract role(s) / brief description of responsibilities		ASPRS Certified Mapping Scientist – Lidar professionally competent in acquiring and processing large-area lidar data. Contributes significantly to the advancement of lidar data acquisition and production processes, designing and managing strategic programs to develop and implement new remote sensing technologies focused on meeting the evolving needs of geospatial data users. Exceeds the 5 years of experience minimum and meets MPR 2.	

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
04/2016 – 02/2018	**Eastern TN Lidar 2016, USGS Lidar | Tennessee.** Lidar Specialist responsible for supervision of the lidar data processing including data calibration, ground filtering, classification, DEM creation, intensity imagery production, data QA/QC, and accuracy analysis. Scope: This task order involved the acquisition and subsequent processing of new QL2 lidar data for 7,679 square miles in Eastern Tennessee to help support the needs of several federal and state agencies. Lidar processing services included geometric calibration, ground filtering, DEM QA/QC, hydrologic compilation and flattening, intensity imagery production, accuracy analysis, and reporting. Utilizing the newly acquired lidar data as a base layer for the extraction of additional useful geospatial data, building footprints were extracted as 2D polygon features for the entire AOI. Cost: $1,768,670
06/2022 – 03/2024	**TN_Davidson Lidar 2022, USGS Lidar | Tennessee.** Lidar Specialist responsible for supervision of the lidar data processing including data calibration, ground filtering, classification, DEM creation, intensity imagery production, data QA/QC, and accuracy analysis. Scope: Spring leaf-off 2022 QL1 lidar was acquired at an aggregate NPS of 0.35-meters (8-points per square meter) over ±533 square miles in the state of Tennessee for Davidson County. The task order included enhanced specifications for hydrologic flattening conditions; vegetation and building classification; and 2-foot contours. Task order specifications are based on the U.S. Geological Survey "National Geospatial Program Lidar Base Specification 2022, Revision A". Cost: $253,737
04/2022 – 06/2024	**MN_Lidar Central Miss River B22 | Minnesota**. Lidar Specialist responsible for supervision of the lidar data processing including data calibration, ground filtering, classification, DEM creation, intensity imagery production, data QA/QC, and accuracy analysis. Scope: Spring 2022 leaf-off lidar survey acquired ±10,940 square miles (9,302 square miles at QL1 - 8-points per square meter and 1,638 square miles of QL0 - 30-points per square meter) for an AOI of 19 full and partial counties in central and southeastern Minnesota. This project supports the 3DEP mission, as well as other state and local agencies. Task specifications are based on the "U.S. Geological Survey National Geospatial Program Lidar Base Specification 2021, Revision A". Cost: 4,508,130
08/2023 – 05/2025	**OR_ Southeast_D22, USGS Lidar | Oregon**. Lidar Specialist responsible for supervision of the lidar data processing including data calibration, ground filtering, classification, DEM creation, intensity imagery production, data QA/QC, and accuracy analysis. Scope: Fall leaf-off 2022 QL1 lidar surveys collected over a base area of approximately 31,682 square miles and an option area of approximately 1,190 square miles, for a total Defined Project Area of approximately 32,872 square miles. The data is used for updates and enhancements to existing work by local governments for stormwater management, urban planning, historic and natural resource preservation, emergency services and hazard assessment support, and provide current, consistent data for regional planning efforts, and the 3DEP mission. Task order specifications are based on the U.S. Geological Survey "National Geospatial Program Lidar Base Specification 2022, Revision A" (LBS 2022, Revision A). Cost: $$9,851,366
09/2022 – 01/2025	**WY_GrandTetonNP_D22, USGS Lidar | Wyoming.** Scope: This task order was for the planning, acquisition, processing, and derivative products of QL1 lidar was acquired at an aggregate nominal pulse spacing of 0.35-meters at 8-points per square meter. It required a fall leaf-off 2022 acquisition over approximately 1,874 square miles in the states of Montana and Wyoming. The base order covered approximately 521 square miles of Grand Teton National Park and approximately 1,353 square miles of flood impacted areas in Yellowstone National Park. The task order data deliverables included automated classification of building footprints, a Digital Surface Model, and 1-foot contours. Task order specifications are based on the U.S. Geological Survey "National Geospatial Program Lidar Base Specification 2022, Revision A" (LBS 2022, Revision A). Cost: $684,883

Firm employed by Woolpert, Inc.			
Name	Grant Twilley, CH, CMS-Lidar	Years of relevant experience with this employer	8
Title	Responsible Member (Lidar Specialist)	Years of relevant experience with other employer(s)	4
Degree(s) / Years / Specialization		Master of Science / 2021 / Hydrographic Science Bachelor of Science / 2015 / Environmental Science and Anthropology	
Active registration number / state / expiration date		#L072 / National / 03/2027 #345 / National / 12/2026	
Year registered	02/2022 12/2024	Discipline	ASPRS Certified Mapping Scientist, Lidar NSPS-THSOA Certified Hydrographer
Contract role(s) / brief description of responsibilities		ASPRS Certified Mapping Scientist – Lidar professionally competent in acquiring and processing large-area lidar data. Specializes in mission planning, execution, briefing, debriefing, communications, and safety protocol reviews. Is a Certified Hydrographer with experience in both acoustic and lidar bathymetric surveying; including data collection, processing, and generating final product deliverables for charting and navigation projects. Exceeds the 5 years of experience minimum and meets MPR 2.	

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
04/2018 – 04/2019	**Operations and Technical Support for the USACE and JALBTCX - JALBTCX CZMIL Sensors in Support of USACE National Coastal Mapping Program and Related USACE Mapping Requirements on the US Atlantic and Great Lakes Coasts and Survey of Puerto Rico (Post Hurricane Maria Mapping.** Lidar Specialist responsible for the airborne operations acquiring topographic/bathymetric lidar and 10-centimeter imagery and performing post-collection data downloading and coverage checks. Scope: The scope of this task order involved the collection of topographic and bathymetric lidar, digital imagery, and hyperspectral imagery data for the coastline of Puerto Rico and the Vieques National Wildlife Refuge. The data was used to analyze the coastal impacts of Hurricane Maria. Additional requirements included ground control survey support and field data processing, as well as hardware, software, shipping, logistics, office data processing, administrative, and technical support. Cost: $$4,913,247
06/2021 – 01/2022	**NOAA/NPS Bathymetric Lidar Data Collection at Sleeping Bear Dunes National Lakeshore | Michigan. Lidar Specialist** responsible for the airborne operations acquiring topographic/bathymetric lidar using a Leica HawkEye 4X system and performing post-collection data downloading and coverage checks. Scope: Woolpert acquired and processed aerial topographic lidar for ±30 square miles over Sleeping Bear Dunes in Michigan to support multiple agencies including the National Park Service, Michigan Department of Natural Resources, NOAA OCM, and other regional partner mapping and modeling needs. This project expanded the existing hydrographic coverage around Sleeping Bear Dunes by providing high-resolution lidar bathymetry. Data was collected using a Leica HawkEye 4x system to 25-meter depths at a vertical accuracy of ≤ 15 cm RMSE. Cost: $229,544
05/2018 – 09/2019	**Operations and Technical Support for the USACE and JALBTCX: JALBTCX NCMP (Post-Florence and Post-Michael).** Lidar Specialist responsible for the airborne operations acquiring topographic/bathymetric lidar and imagery data and performing post-collection data downloading and coverage checks. Scope: The scope of this task order involves the collection of topographic and bathymetric lidar, digital imagery, and hyperspectral imagery data for the shoreline of Lake Erie in New York, the coastline of North Carolina in support of post-Florence storm response, and the Florida panhandle coastline in support of the post-Michael storm response. Two aircraft with CZMIL sensors were deployed for the dual airborne operations for the data collection at multiple locations. For the data collection in support, field personnel were deployed to Mobile, AL, as all required lidar data processing and editing was performed in the field. This delivery order required the operation and maintenance of two (2) CZMIL sensors (dual operations). Cost: $2,571,375
09/2022 – 07/2024	**Lidar and Imagery Collection, Processing and Shoreline Mapping Chesapeake Bay Shoreline Mapping | Maryland and Virginia.** Lidar Specialist responsible for the airborne operations acquiring topographic/bathymetric lidar using a Leica HawkEye 4X system and performing post-collection data downloading and coverage checks. Scope: NOAA NGS selected Woolpert to provide topographic/bathymetric lidar data, digital imagery, and shoreline mapping updates over Tangier Sound in Chesapeake Bay in Maryland and Virginia and over Chincoteague Bay in Maryland and Virginia. The combined project areas covered ±1,738 linear miles of shoreline for photogrammetric compilation. Woolpert used a Leica HawkEye 4X sensor to acquire the topographic/bathymetric lidar data during time periods of optimal water clarity with a goal of reaching three Secchi depth or greater. The 25-centimeter pixel 4-band RGB/NIR imagery was acquired with a Leica ADS100. The imagery was utilized for photogrammetric compilation of the Continually Updated Shoreline Product and for digital orthophoto production. Cost: $3,520,430

Firm employed by	Woolpert, Inc.		
Name	Christopher Jaeger, CP, GISP, PMP	Years of relevant experience with this employer	24
Title	Responsible Member (Geospatial Specialist)	Years of relevant experience with other employer(s)	20

Degree(s) / Years / Specialization			Associate of Applied Science / 1990 / General Studies
Active registration number / state / expiration date			#1458 / National / 08/2030 # 0408000109 / VA / 03/2031 #00045557 / National / 02/2028 #1272141 / National / N/A
Year registered	08/2015 03/2010 02/2004 06/2013	Discipline	ASPRS Certified Photogrammetrist Surveyor Photogrammetrist GISCI Certified GIS Professional Project Management Professional
Contract role(s) / brief description of responsibilities			Responsible Member professionally competent in all facets of photogrammetry and lidar including survey control, flight planning, data processing, and quality for local, state, and federal clients. Well-versed in several types of mapping standards including ASPRS, National Map Accuracy Standard, and National Standards for Spatial Data Accuracy. Exceeds the 3 years of experience minimum and meets MPR 3.

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
12/2017 – 01/2020	**Bayou Nezpique Lidar Survey | Louisiana.** Project Manager and Certified Photogrammetrist responsible for the planning and management of this 3,772 square mile project. Scope: Woolpert performed a lidar survey over an area of interest in south-central Louisiana which covered ±3,772 square miles and included the parishes of Acadia, Jefferson Davis, Allen, Evangeline and portions of St. Landry, Lafayette, Vermillion, Rapides, and Calcasieu to meet USGS QL1 standards (8 ppsm) in compliance with NGP Lidar Base Specification v1.2. The project required the classification of bare-earth data and hydro-flattening breakline collection. Cost: $980,000
08/2022 – 08/2023	**2023 Orthophotography, Lidar, and Planimetric Mapping | Lee County, Alabama.** Project Manager and Certified Photogrammetrist responsible for the acquisition and production of aerial imagery and lidar. Scope: The County Cooperative comprises Lee County, the Cities of Auburn and Opelika, and Auburn University. Woolpert acquired and processed aerial imagery and 4 ppsm topographic lidar to support the generation of 3-inch GSD, digital 4-band orthophotography and planimetric and topographic mapping encompassing the 654-square mile area of the County. Cost: $533,980
12/2019 – 10/2020	**Mississippi River Corridor Low Water Lidar Acquisition | Louisiana.** Project Manager and Certified Photogrammetrist responsible for the acquisition and production of aerial lidar. Scope: Woolpert acquired and processed lidar elevation data along the Mississippi River corridor from Old River to just above Venice, Louisiana, near river mile 12 within the New Orleans District. The proposed 575-square-mile project supported channel improvement and obtains measurements of the bare-ground surface as well as top surface elevation data for USACE analysis. This project was a follow-on project to a 3-inch ground GSD, 4-band orthophotography project previously completed. Cost: $455,531
09/2021 – 02/2022	**Post-Hurricane Ida, 3-inch Aerial Imagery and Lidar Collection, Louisiana.** Project Manager and Certified Photogrammetrist responsible for the acquisition and production of aerial imagery and lidar. Scope: Woolpert acquired and processed 3-inch, 4-band digital aerial imagery and lidar elevation data that supported emergency response for damage assessment following Hurricane Ida in Louisiana. This project included the collection of data along six levee systems within the New Orleans District: New Orleans to Venice Levee System (NOV and NOV NF); Westbank and Vicinity Levee System (WBV); Larose to Golden Meadow Levee System (LGM); Morganza to the Gulf Levee System (LGM); Lake Pontchartrain and Vicinity Levees (LPV); and Lafitte and Braithwaite Levees. Cost: $591,529
12/2024 / 02/2025	**Color IR Digital Orthophotography for the Beneficial Use Monitoring Program (BUMP) (FY25), Louisiana.** Project Manager and Certified Photogrammetrist responsible for the acquisition and processing of color infrared aerial imagery and orthophotography. Scope: This USACE New Orleans District task order involved the acquisition and processing of color infrared aerial imagery and orthophotograph. Woolpert has collected and processed this data annually for over the last ten years. This project consisted of six locations totaling 1,043 square miles along the Louisiana Gulf Coast: Calcasieu, Louisiana (229.6 mi^2); Atchafalaya, Louisiana (109.9 mi^2); Houma, Louisiana (82.5 mi^2); Lafourche, Louisiana (50.2 mi^2); Barataria, Louisiana (64.6 mi^2); and Mississippi River, Louisiana (505.8 mi^2). Cost: $114,249

Firm employed by	Woolpert, Inc.			
Name	Casey Johnston, CP, GISP		Years of relevant experience with this employer	4
Title	Responsible Member (Geospatial Specialist)		Years of relevant experience with other employer(s)	7
Degree(s) / Years / Specialization			Master of Science, Forestry (2017) | Bachelor of Science, Geographic Information Science (2014)	
Active registration number / state / expiration date			#1682 / National / 06/01/2029 #161035 / National / 07/25/2027	
Year registered	2024 2021	Discipline	ASPRS Certified Photogrammetrist GISCI Certified GIS Professional	
Contract role(s) / brief description of responsibilities			Responsible member professional component in both photogrammetry and lidar. Proficient in the development and management of workflows for lidar, hyperspectral, and RGB imagery processing. *Specific to LADOTD, Casey consolidated, standardized, and published Louisiana's remote sensing data for public access and data preservation; created the Louisiana Imagery Download App.; supported DOTD GIS & lidar groups with data production; and collaborated on workshop presentations and contributed to DOTD GIS winning the 2020 Esri Enterprise Award.* Exceeds the 5 years of experience minimum and meets MPR 3.	

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
09/2020 – 12/2021	**Operations and Technical Support for the USACE and JALBTCX | US Atlantic (GA, NC), Gulf (FL, MS, and TX) and Pacific Coast (AK); Kiln, MS.** Geospatial Specialist who, during field operations, monitored all efforts related to data collection and processing to meet the quality assurance metrics defined in the SOW. He performed RGB camera and hyperspectral imaging sensor calibration, supporting the field crew with processing issues, and office processing and editing. Casey also developed custom software for lidar, GNSS, and imagery data processing, visualization, and quality control. Scope: The scope of this task order involved providing support for the operation of the JALBTCX Coastal Zone Mapping and Imaging Lidar (CZMIL) sensors in support of the U.S. Army Corps of Engineers (USACE) National Coastal Mapping Program (NCMP) requirements along the coastlines of Alaska, Florida, Georgia, Mississippi, North Carolina, and Texas. The coverage of the collection includes 500 meters inland, and 1000 meters offshore, for the entirety of the mapping requirements. Cost: $5,043,256
09/2023 – 09/2025	**Operations and Technical Support for the USACE and JALBTCX | Alaska, California, Florida, Hawaii, Mississippi, Oregon, Florida, Hawaii, Mississippi, Oregon.** Geospatial Specialist who, during field operations, monitored all efforts related to data collection and processing to meet the quality assurance metrics defined in the SOW. He performed RGB camera and hyperspectral imaging sensor calibration, supporting the field crew with processing issues, and office processing and editing. Casey also developed custom software for lidar, GNSS, and imagery data processing, visualization, and quality control. Scope: This task order involved acquiring topographic/bathymetric lidar data in the nearshore zone, specifically targeting areas up to 500-meters inland and 1,000-meters offshore. Woolpert performed dual operation surveys in response to Hurricane Milton post-storm response. One aircraft was mobilized with Woolpert-owned Leica HawkEye-5 and Chiroptera-5 lidar sensors to collect data on Florida's western coast. A second aircraft was deployed along with the JALBTCX Coastal Zone Mapping and Imaging Lidar to collect data on Florida's eastern coast. Cost: $10,384,368
03/2020 – 03/2021	**Operations and Technical Support for the USACE and JALBTCX - Surveying & Mapping Services for the JALBTCX and USACE National Coastal Mapping Program | US Atlantic (NC), Pacific (OR and WA), and Great Lakes Coasts.** Geospatial Specialist who, during field operations, monitored all efforts related to data collection and processing to meet the quality assurance metrics defined in the SOW. He performed RGB camera and hyperspectral imaging sensor calibration, supporting the field crew with processing issues, and office processing and editing. Casey also developed custom software for lidar, GNSS, and imagery data processing, visualization, and quality control.
08/2021 – 02/2022	**Operations and Technical Support for the USACE and JALBTCX | Texas, California, King's Bay in Florida, and North Carolina.** Geospatial Specialist who monitored all efforts related to data collection and processing to meet the quality assurance metrics defined in the SOW. He performed RGB camera and hyperspectral imaging sensor calibration, supporting the field crew with processing issues, and office processing and editing. Scope**:** This USACE Mobile/JALBTCX task order involved the acquisition of topographic/bathymetric lidar, digital imagery, and hyperspectral imagery data. The scope also included terrestrial mapping and research into the beneficial use of dredged materials including ArcPy software development. Cost**:** $6,085,110

Firm employed by	Woolpert, Inc.		
Name	Brian Foster, CP, PMP	Years of relevant experience with this employer	24
Title	Responsible Member (Geospatial Specialist)	Years of relevant experience with other employer(s)	9
Degree(s) / Years / Specialization		Bachelor of Arts / 1991 / Geography-Cartography	
Active registration number / state / expiration date		#R1460 / National / 12/2025 #3020466 / National /N/A	
Year registered	2010 2021	Discipline	ASPRS Certified Photogrammetrist PMI Project Management Professional
Contract role(s) / brief description of responsibilities		Responsible Member professionally competent in all facets of photogrammetry and lidar including survey control, flight planning, data processing, and quality for local, state, and federal clients. Experienced in all aspects of photogrammetry, including surveying, aerotriangulation, orthophotography, lidar, and remote sensing including surface models, digital orthophotos, planimetric features geodatabases, and impervious surfaces maps. Exceeds the 3 years of experience minimum and meets MPR 3.	

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
04/2020 – 11/2021	**Table Mountain Colorado Multiple Geospatial Products | Colorado.** Certified Photogrammetrist for the acquisition and processing of high resolution digital imagery, aerial and terrestrial lidar and 3D model development over a 13 square mile area centered around the ITS Table Mountain Field Site, Boulder, CO. Scope: Woolpert deployed field surveyors to perform ground control and leveling using GPS/RTK technology and terrestrial scanning using a Leica P50 to scan a building site on top of the mountain. Additionally, imagery was collected to deliver colorized point clouds. Aerial lidar was collected at 40 PPSM using an Optech Galaxy lidar system. 4-band digital aerial imagery was collected at 3cm GSD using a Vexcel UltraCam Eagle camera system. Woolpert provided imagery at a 3.5cm pixel resolution over the entire AOI. A digital elevation model (DEM) was created and delivered for each tile. Project level FGDC compliant metadata was also delivered. Cost: $297,261
04/2023 – 11/2023	**San Joaquin River Restoration Program (SJRRP), U.S. Bureau of Reclamation | California.** Certified Photogrammetrist who oversaw the production of deliverables that included vector shapefiles of the lidar flight lines and imagery footprints, raw and classified LAS point clouds, a hydrologically flattened DEM derived from the aerial lidar, 3-inch NIR orthoimagery, and a Civil 3D AutoCAD drawing of the bathymetric and lidar surveys containing a single cohesive bare earth digital TIN surface containing multibeam bathymetric and aerial lidar ground points, contours, and planimetrics. Scope: Woolpert acquired aerial lidar, aerial imagery, and multibeam bathymetry for two AOIs near Dos Palos and Mendota, CA. Approximately 23 mi2 of imagery and 7 square miles of topographic lidar were collected, multibeam data was collected in the river channels. Cost: $184,936
10/2022 – 12/2023	**Aerial Lidar, Imagery and Planimetric Mapping, Fort Leavenworth | Kansas City, Kansas.** Certified Photogrammetrist for the acquisition of 3-inch, 4-band orthoimagery and 4 ppsm lidar for a 8.9 mi2 to support the installation's Real Property SDSFIE Database Update to include installation planning, design, research, and topographic mapping purposes. Scope: Woolpert conducted an aerial imagery and lidar survey of the Fort Leavenworth installation for the purpose of creating an accurate map to support the real property database. Cost: $146,161
09/2023 – 06/2024	**Infrastructure Utility Mapping and Planimetric Data at Soto Cano Air Base | Comayagua, Honduras.** Certified Photogrammetrist for collection of the planimetric data and survey to meet requirements for 1"=30' mapping. Scope: Woolpert was contracted to provide surveying and mapping services for the purpose of obtaining infrastructure utility and planimetric data at Soto Cano Air Base located near Comayagua, Honduras. The mapping/data collection was for the entirety of the approximate six square mile installation. Cost: $475,048
08/2022 – 08/2023	**2023 Orthophotography, Lidar, and Planimetric Mapping | Lee County, Alabama.** Certified Photogrammetrist responsible for the production of aerial imagery and lidar. Scope: The County Cooperative comprises Lee County, the Cities of Auburn and Opelika, and Auburn University. Woolpert acquired and processed aerial imagery and 4 ppsm topographic lidar to support the generation of 3-inch GSD, digital 4-band orthophotography and planimetric and topographic mapping encompassing the 654-square mile area of the County. Cost: $533,980

Firm employed by	Woolpert, Inc.			
Name	Kyle Manderson, CP, CMS, PMP		Years of relevant experience with this employer	9
Title	Bathymetric Lidar Specialist		Years of relevant experience with other employer(s)	11
Degree(s) / Years / Specialization			Associate of Applied Science / 2006 / Graphic Design and Digital Animation	
Active registration number / state / expiration date			#1595 / National / 04/2026 # R230RS / National / 04/2026 #1825488 / National / N/A	
Year registered	2016 2016 2016	Discipline	ASPRS Certified Photogrammetrist ASPRS Certified Mapping Scientist PMI Certified Project Management Professional	
Contract role(s) / brief description of responsibilities			Professionally competent in the acquisition and processing of bathymetric lidar data. Airborne lidar bathymetry (ALB) specialist who currently manages over $20 million in active tasking related to aerial topo-bathymetric lidar acquisition and processing, shoreline mapping, and orthometric imagery collection for the USACE/JALBTCX and multiple federal and commercial contracts. Exceeds the 3 years of experience minimum and meets MPR 3.	

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
09/2022 – 03/2025	**Operations and Technical Support for the USACE and JALBTCX | Alaska, Florida, Georgia, Hawaii, Michigan, Mississippi, New Jersey, New York, Kwajalein, Wake Island.** Airborne Lidar Bathymetry (ALB) Specialist who performed/directed field operations and provided logistical coordination for the acquisition and processing of bathymetric lidar data. Scope: Woolpert was tasked with the comprehensive collection of topographic and bathymetric lidar data, RGB imagery, and hyperspectral imagery using the Teledyne CZMIL, Teledyne Galaxy, ITRES CASI 1500, and Phase One RGB camera sensors in support of the USACE National Coastal Mapping Program (NCMP) requirements along the referenced coastlines as well as post-storm response efforts in Florida and Pacific operations in Kwajalein and Wake Island. Cost: 15,053,939
09/2023 – 09/2025	**Operations and Technical Support for the USACE and JALBTCX | Alaska, California, Florida, Hawaii, Mississippi, and Oregon.** Airborne Lidar Bathymetry (ALB) Specialist who performed/directed field operations and provided logistical coordination for the acquisition and processing of bathymetric lidar data. Scope: Woolpert was tasked with the comprehensive collection of topographic and bathymetric lidar data, RGB imagery, and hyperspectral imagery using the Teledyne CZMIL, Teledyne Galaxy, ITRES CASI 1500, and Phase One RGB camera sensors in support of the USACE National Coastal Mapping Program (NCMP) requirements along the referenced coastlines. The primary focus was on acquiring lidar data in the nearshore zone, specifically targeting areas up to 500 meters inland and 1,000 meters offshore. Cost: $10,384,368
06/2023 – 09/2025	**Operations and Technical Support for the USACE and JALBTCX |** Alaska, Georgia, Hawaii, Mississippi. Airborne Lidar Bathymetry (ALB) Specialist who performed/directed field operations and provided logistical coordination for the acquisition and processing of bathymetric lidar data. Scope: Woolpert was tasked with the comprehensive collection of topographic and bathymetric lidar data, RGB imagery, and hyperspectral imagery using the Teledyne CZMIL, Teledyne Galaxy, ITRES CASI 1500, and Phase One RGB camera sensors in support of the USACE National Coastal Mapping Program (NCMP). Our Efforts centered on the acquisition of lidar within the nearshore zone, targeting areas from 500 meters inland to 1,000 meters offshore. Cost: $8,328,496
09/2023 – 03/2026	**Operations and Technical Support for the USACE and JALBTCX | Federated States of Micronesia, New Jersey.** Airborne Lidar Bathymetry (ALB) Specialist who performed/directed field operations and provided logistical coordination for the acquisition and processing of bathymetric lidar data. Scope: The scope of this task involved the collection and processing of airborne bathymetric lidar, hyperspectral, and RGB imagery utilizing government-furnished equipment—a Coastal Zone Mapping and Imaging Lidar (CZMIL) sensor—in the Federated States of Micronesia in support of the ALH program for the Naval Oceanographic Office (NAVOCEANO). Cost: 2,290,078
08/2021 – 02/2022	**Operations and Technical Support for the USACE and JALBTCX | Texas, California, King's Bay in Florida, and North Carolina.** Airborne Lidar Bathymetry (ALB) Specialist who performed/directed field operations and provided logistical coordination for the acquisition and processing of bathymetric lidar data.. Scope**:** This USACE Mobile/JALBTCX task order involved the acquisition of topographic/bathymetric lidar, digital imagery, and hyperspectral imagery data. The scope also included terrestrial mapping and research into the beneficial use of dredged materials including ArcPy software development. Cost**:** $6,085,110

Firm employed by	Woolpert, Inc.			
Name	Karen Hart		Years of relevant experience with this employer	3
Title	Bathymetric Lidar Specialist		Years of relevant experience with other employer(s)	20
Degree(s) / Years / Specialization			Master of Science / 2000 / Oceanography Bachelor of Science / 1998 / Geography	
Active registration number / state / expiration date			N/A	
Year registered	N/A	Discipline	N/A	
Contract role(s) / brief description of responsibilities			Professionally competent in the acquisition and processing of bathymetric lidar data. Airborne lidar bathymetry (ALB) specialist for hydrographic survey operations, data processing, and analysis; marine GIS applications and cloud data storage; oceanographic operations and data analysis; and unmanned systems. Exceeds the 3 years of experience minimum and meets MPR 3.	

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
10/2023 – 12/2024	**Bathymetric Lidar Data Collection | Collier to Dade Counties, Florida.** Airborne lidar bathymetry (ALB) specialist who coordinated topographic/bathymetric lidar data acquisition and processing, data delivery, schedule and budget. Scope: Woolpert was contracted collect and process bathymetric lidar for 0m – 20m water depths within the Keys (3) Region of Florida, ±20,099 square kilometers. Staff developed the flight plan, planned, and performed the ground control survey fieldwork, acquired bathymetric lidar data, and is performing bathymetric lidar data point cloud classification, editing, and quality control. After all data is collected and processed, Woolpert generated DEMs and delivered final lidar data products, project reports, and metadata. Woolpert deployed a Leica HawkEye 4X topo-bathymetric lidar sensor to acquire the bathymetric lidar. This system provided denser data than previous traditional bathymetric lidar systems given its ability to collect topographic lidar, shallow channel, deep channel bathymetric lidar, and 4-band digital camera imagery simultaneously. Cost: $12,879,900
08/2022 – 09/2023	**2022 Shoreline Mapping Project, LA2208-TB-C | Louisiana.** Airborne lidar bathymetry (ALB) specialist who coordinated topographic/bathymetric lidar data acquisition and processing, data delivery, schedule and budget. Scope: NOAA NGS selected Woolpert to acquire and process topographic/bathymetric lidar and imagery covering ±272 square miles over the coastal Louisiana as part of supplemental funding for Hurricane Ida. This data will be used for the updating of the national shoreline and to support other mapping, charting, geodetic, and coastal uses. Lidar was collected in fall 2022 to meet a ≥ 2.0 ppsm density and 1.5 secchi depth in accordance with the QL2B as specified in the National Coastal Mapping Strategy 1.0 Document. The bathymetric lidar data was collected to support 100% coverage to meet IHO Order 1b specifications. Cost: $516,726
09/2022 – 09/2023	**2022 Shoreline Mapping AS2201-TB-C | Pacific Islands and American Samoa**. Airborne lidar bathymetry (ALB) specialist who coordinated topographic/bathymetric lidar data acquisition and processing, data delivery, schedule and budget. Scope**:** Woolpert acquired and processed ±277 square miles of topographic/bathymetric lidar and imagery over Tutuila Island, Ofu, and Olosega Island, Tau Island, Rose Atoll, and Swains Island in American Samoa for use in updating the national shoreline and to support other mapping, charting, geodetic, and coastal uses. Cost**:** $1,708,872
06/2021 – 01/2022	**NOAA/NPS Bathymetric Lidar Data Collection at Sleeping Bear Dunes National Lakeshore | Michigan.** Airborne lidar bathymetry (ALB) specialist who coordinated topographic/bathymetric lidar data acquisition and processing, data delivery, schedule and budget. Scope: To fill critical gaps in understanding benthic habitat within Lake Michigan at Sleeping Bear Dunes National Lakeshore (SLBE), Woolpert acquired new bathymetric lidar to support multiple agencies. The total estimated area of bathymetric data acquisition was approximately 78 square kilometers. The lidar data was collected in late summer 2021 using a Leica HawkEye 4x system to reach the 25-meter depth limit at an aggregate nominal pulse density (ANPD) ≥ 1 pulse per square meter (ppsm) with a desired vertical accuracy of ≤ 15-cm RMSE (24.9-cm accuracy). After the data acquisition, coverage files were generated in the field to ensure data quality. Once the collected data was accepted the lidar data point cloud was classified. Cost: 229,544
12/2022 – 09/2024	**Topography/Bathymetry, Lidar and Imagery Collection/Processing, NOAA NGS | Northwestern Hawaii.** Airborne lidar bathymetry (ALB) specialist who coordinated topographic/bathymetric lidar data acquisition and processing, data delivery, schedule and budget. Scope: Woolpert acquired and processed topo-bathymetric lidar and imagery for ±1,687 square miles over the Islands Nihoa, Necker, Niihau, and French Frigate in Hawaii for updating nautical charts and other uses. The data was produced to meet the National Coastal Mapping Strategy (NCMS) for bathymetric lidar v1.0 standard. Cost**:** $3,170,567

Firm employed by	Chustz Surveying, LLC			
Name	James Chustz, Jr., PLS		Years of relevant experience with this employer	30
Title	Professional Land Surveyor		Years of relevant experience with other employer(s)	21
Degree(s) / Years / Specialization			Boundary Surveying Classes (LSU) / 1983 / Surveying	
Active registration number / state / expiration date			#4657 / Louisiana / 03/31/2026	
Year registered	1992	Discipline	Professional Land Surveyor	
Contract role(s) / brief description of responsibilities			Professional Land Surveyor registered in the State of Louisiana with experience in control surveys. Exceeds the 5 years of experience minimum and meets MPR 5.	

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
05/2023 – 02/2025	**LA 44: Roundabouts @ I-10, LADOTD, H.015569.5.** Professional Land Surveyor in responsible charge for the overall management of this task order. Scope: This LADOTD task order consisted of performing topographic and ground control surveys utilizing mobile lidar, uncrewed aerial lidar, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included a drainage map and Bentley InRoads DGN, DTM, and ALG files. Cost: $212,000
02/2024 – 07/2024	**US 71: UPRR Overpass CLR Adjustment, LADOTD, H.015119.5.** Professional Land Surveyor in responsible charge for the overall management of this task order. Scope: This task order consisted of performing a topographic and ground control surveys utilizing mobile and stationary lidar, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included a Drainage Map and Bentley InRoads DGN, DTM, and ALG files. Cost: $148,000
05/2023 / 12/2023	**LA 44: Pelican Point Roundabout & Widen, LADOTD, H.015568.5.** Professional Land Surveyor in responsible charge for the overall management of this task order. Scope: This task order consisted of performing a topographic and ground control surveys utilizing mobile lidar, uncrewed aerial lidar, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included a Drainage Map and Bentley InRoads DGN, DTM, and ALG files. Cost: $120K
03/2022 – 08/2022	**LA 20: LA 304 – LA 307, Lafourche Parish, LADOTD, H.014728.5.** Professional Land Surveyor in responsible charge for the overall management of this task order. Scope: This task order consisted of performing a topographic and ground control surveys, uncrewed single beam hydrographic, uncrewed aerial lidar and photogrammetry, conventional, RTK, and GPS/GNSS surveys to meet LA DOTD specifications. Deliverables included a Drainage Map and Bentley InRoads DGN, DTM, and ALG files. Cost**:** $204,000
11/2021 – 02/2022	**LA 73 Bayou Manchac Bridge, Ascension and East Baton Rouge Parishes.** Professional Land Surveyor in responsible charge for the overall management of this task order. Scope: This task order consisted of performing a topographic and ground control surveys utilizing mobile lidar, uncrewed aerial lidar, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: $101,000
08/2021 – 12/2021	**LA 301 Priest Canal Bridge, Crown Point, LADOTD, H.014284.5.** Professional Land Surveyor in responsible charge for the overall management of this task order. Scope: This task order consisted of topographic, control, and hydrographic surveys utilizing conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: $83K
07/2021 – 10/2021	**LA 29 Bayou Cocodrie Bridge Scour Repair, Ville Platte, LADOTD, H.014633.5.** Professional Land Surveyor in responsible charge for the overall management of this task order. Scope: This task order consisted of topographic, control, and hydrographic surveys utilizing conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: $75K
05/2017 – 09/2017	**I-10 Cable Barrier, Lafayette to Jennings, SJB - DOTD, H.010962.** Professional Land Surveyor responsible for the overall management of this task order consisting of topographic and ground control surveys, uncrewed aerial lidar and photogrammetry, RTK, and GPS/GNSS surveys to meet LA DOTD specifications. Deliverables included ASCII and LAS Files. Cost: $105,000

Firm employed by	Chustz Surveying, LLC			
Name	Evan Chiasson, PLS		Years of relevant experience with this employer	5
Title	Professional Land Surveyor		Years of relevant experience with other employer(s)	10
Degree(s) / Years / Specialization			Bachelor of Science / 2011 / Geomatics	
Active registration number / state / expiration date			#5139 / Louisiana / 03/31/2026	
Year registered	1992	Discipline	Professional Land Surveyor	
Contract role(s) / brief description of responsibilities			Professional Land Surveyor registered in the State of Louisiana with experience in control surveys. Exceeds the 5 years of experience minimum and meets MPR 5.	

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
05/2023 – 02/2025	**LA 44: Roundabouts @ I-10, LADOTD, H.015569.5.** Professional Land Surveyor responsible for team and crew management as well as the logistical aspects of the task order to ensure project compliance. Scope: This LADOTD task order consisted of performing topographic and ground control surveys utilizing mobile lidar, uncrewed aerial lidar, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included a drainage map and Bentley InRoads DGN, DTM, and ALG files. Cost: $212,000
02/2024 – 07/2024	**US 71: UPRR Overpass CLR Adjustment, LADOTD, H.015119.5.** Professional Land Surveyor responsible for team and crew management as well as the logistical aspects of the task order to ensure project compliance Scope: This task order consisted of performing a topographic and ground control surveys utilizing mobile and stationary lidar, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included a Drainage Map and Bentley InRoads DGN, DTM, and ALG files. Cost: $148,000
05/2023 / 12/2023	**LA 44: Pelican Point Roundabout & Widen, LADOTD, H.015568.5.** Professional Land Surveyor responsible for team and crew management as well as the logistical aspects of the task order to ensure project compliance Scope: This task order consisted of performing a topographic and ground control surveys utilizing mobile lidar, uncrewed aerial lidar, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included a Drainage Map and Bentley InRoads DGN, DTM, and ALG files. Cost: $120K
03/2022 – 08/2022	**LA 20: LA 304 – LA 307, Lafourche Parish, LADOTD, H.014728.5.** Professional Land Surveyor responsible for team and crew management as well as the logistical aspects of the task order to ensure project compliance. Scope: This task order consisted of performing a topographic and ground control surveys, uncrewed single beam hydrographic, uncrewed aerial lidar and photogrammetry, conventional, RTK, and GPS/GNSS surveys to meet LA DOTD specifications. Deliverables included a Drainage Map and Bentley InRoads DGN, DTM, and ALG files. Cost**:** $204,000
11/2021 – 02/2022	**LA 73 Bayou Manchac Bridge, Ascension and East Baton Rouge Parishes.** Professional Land Surveyor responsible for team and crew management as well as the logistical aspects of the task order to ensure project compliance. Scope: This task order consisted of performing a topographic and ground control surveys utilizing mobile lidar, uncrewed aerial lidar, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: $101,000
10/2016 – 03/2017	**East Marsh Island Surveys, Iberia Parish**. Professional Land Surveyor in responsible charge for the overall management of this task order. Scope: This task order consisted of performing topographic, control, and hydrographic surveys utilizing conventional, RTK, and GPS/GNSS survey methods to conduct volume calculations. Cost: $285,000
12/2024 – 01/2025	**LA 1206: Creek Bridge, Rapides Parish, LADOTD, H.016313.5.** Professional Land Surveyor responsible for team and crew management as well as the logistical aspects of the task order to ensure project compliance. Scope: This task order consisted of performing a topographic and control surveys utilizing conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. **Cost:** $53,000
06/2023 – 04/2025	**LA HWY 22 Gapping Project ROW Maps, Ascension Parish.** Professional Land Surveyor in responsible charge for the overall management of this task order. Scope: This task order consisted of performing topographic surveys, property surveys, right-of-way surveys, research, title take-off, and acquisition of parcels utilizing conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included MicroStation InRoads DGN, DTM, and ALG files, PDF maps, and title reports. **Cost**: $200,000

Firm employed by	Woolpert, Inc.		
Name	Todd Odham, PLS	Years of relevant experience with this employer	1
Title	Professional Land Surveyor	Years of relevant experience with other employer(s)	34

Degree(s) / Years / Specialization			Bachelor of Science / 1991 / Industrial Technology
Active registration number / state / expiration date			PLS.0005378 / LA / 09/2025 AZ #73602-06/2027 | CO #0038893-10/2025 | FL #LS7446-02/2027 | KY #4265-06/2026 | MS #31303-12/2026 | NV #030743-12/2025 | NM #29099-12/2025 | NC #5383-12/2025 | SD #14956-09/2026 | TX #6062-12/2025 | UT #14111453-2201-03/2027 | VA #403003455-05/2027
Year registered	04/2025 05/2021 / 08/2024 / 11/2022 / 07/2019 / 08/2020 / 12/2022 / 10/2023 / 11/2020 / 09/2020 / 07/2008 / 09/2024 / 05/2021	Discipline	Professional Land Surveyor
Contract role(s) / brief description of responsibilities			Professional Land Surveyor registered in the State of Louisiana with experience in control surveys. Exceeds the 5 years of experience minimum and meets MPR 5.

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
04/2025	**Rio Grande Valley Border Sectors 2, 4, and 10 Gaps Project | Texas.** Professional Land Surveyor for the collection of accuracy ground control points and independent check points to support the airborne acquisition along the Rio Grande border. Scope: Woolpert acquired aerial imagery and lidar to support the design-build of border wall gaps along Rio Grande Valley. Tasks involved acquiring high-resolution (5 cm) 4-band imagery and high-density (20 ppsm) lidar for approximately 18 miles of border wall gaps from Mission, TX to Brownsville, TX and the production of digital orthophotography, planimetric mapping, and topographic mapping. Cost: $200,000
05/2023 – 03/2025	**Survey Director, EnsiteUSA | Houston, Texas.** Professional Land Surveyor with responsibilities included client relations/business development, project management, strategic planning committee, preparation and approval of proposals, overseeing the development of key project execution and on time delivery, assisting with the day-to-day operations, people management, training and mentoring field and office personnel, and plat reviews/signing.
03/2022 – 05/2023	**Director of Surveying, Landpoint, LLC | Houston, Texas**. Professional Land Surveyor responsible for business development, leading the internal standards committee, planning, preparation and approval of proposals, and overseeing the development of key project execution and on time delivery. He also assisted with the day-to-day efficient operation of two regional offices in addition to hiring and mentoring field and office personnel.
06/2019 – 03/2022	**Survey Manager, TRC Pipeline Services | Houston, Texas.** Professional Land Surveyor who managed surveying activities for major midstream pipeline clients. Specifically, he was tasked with project estimation and budgeting, field crew onboarding and scheduling, plat generation/certification and client relations/business development.
10/2018 – 06/2019	**Survey Project Manager, McKim & Creed | Houston, Texas.** Professional Land Surveyor in charge of managing Texas Department of Transportation (TxDOT) projects for the Houston office. His responsibilities included project estimation and budgeting, right-of-way boundary resolution, design of control networks, and review/certification of right-of way plans.
03/2017 – 10/2018	**Survey Project Manager, Tablerock Survey, LLC | The Woodlands, Texas.** Todd was tasked with managing survey activities for oil/gas pipeline projects. He reviewed/certified pipeline easement plats, permit drawings, and valve site easements. He also oversaw right-of-way verification and utility location surveys for a major cell phone infrastructure provider in various regions across Texas.
02/2016 – 03/2017	**Survey Project Manager, Weisser Engineering Company | Houston, Texas.** Professional Land Surveyor who conducted day-to-day project management duties and field crew coordination for various projects, including GPS control surveys, subsidence surveys, Texas Department of Transportation (TxDOT) route surveys, oil and water pipeline as-built and route surveys, utility easements, flood elevation certificates, and land development projects. He also performed appraisal district and courthouse deed research.

Firm employed by Woolpert, Inc.				
Name	David Swain		Years of relevant experience with this employer	13
Title	FAA-Certified Pilot		Years of relevant experience with other employer(s)	38
Degree(s) / Years / Specialization			Bachelor of Engineering / 1975 / Mechanical Engineering	
Active registration number / state / expiration date			#2045777 / National / N/A	
Year registered		Discipline	FAA-Certified Pilot	
Contract role(s) / brief description of responsibilities			FAA-Certified Pilot professionally competent in aerial data acquisition. Experienced general aviation pilot with more than 10,000 flight hours supporting aerial data acquisition missions, with extensive experience in lidar and imagery collection flight planning for federal clients that include the USGS, USACE, NOAA, and the USAF. The projects range from installation planning and emergency response/preparedness to large-scale projects. Exceeds the 5 years of experience minimum and meets MPR 6.	

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
09/2016 – 07/2017	**LA Chenier Plain Lidar 2017 B16, USGS | Louisiana.** Aerial Pilot responsible for the safe operation of the aircraft during data collection, transit activities, and coordination with FAA ATC authorities. Scope: Woolpert collected QL2 lidar for 2,898 square miles in southern Louisiana. The data provided coastal managers with an updated and accurate map of the topography of this complex coastal area. Cost: $640,772
08/2021 – 08/2023	**Minnesota SE Driftless Lidar, USGS | Minnesota.** Aerial Pilot responsible for the safe operation of the aircraft during data collection and transit activities. He coordinated with Woolpert survey field personnel and FAA ATC authorities daily to address any airspace issues. Scope: Woolpert collected and processed ±7,006 square miles of high resolution lidar in SE Minnesota, 1385 square miles was collected to meet requirements for QL0. The remaining 6,365 square miles was collected to meet requirements for QL1. Cost: $2,402,708
08/2022 – 09/2023	**2022 Shoreline Mapping Project, LA2208 | Louisiana**. Aerial Pilot responsible for the safe operation of the aircraft during data collection and transit activities. He coordinated with Woolpert survey field personnel and FAA ATC authorities daily to address any airspace issues. Scope: Woolpert acquired and processed topographic/bathymetric lidar and imagery for ±272 square miles over coastal Louisiana in response to Hurricane Ida for updating the national shoreline, nautical charts and other uses. The data produced meets the National Coastal Mapping Strategy for bathymetric lidar v1.0 standard. Cost: $ 516,725
09/2020 – 06/2022	**Upper Colorado Topobathy 2020 D20, USGS | Colorado.** Aerial Pilot responsible for the safe operation of the aircraft during data collection and transit activities. He coordinated with Woolpert survey field personnel and FAA ATC authorities daily to address any airspace issues. Scope: Woolpert was selected to provide photogrammetric and lidar mapping services to support the 3D Elevation Program (3DEP) mission, the Federal Emergency Management Agency (FEMA) Risk Mapping, Assessment and Planning (MAP) program, and the United States Forest Service (USFS) for several applications such as resource management and conservation planning, engineering design and design reviews, geologic hazard mitigation, hydrologic modeling, and flood risk management. The collection area consisted of two areas of interest in Colorado, identified as Upper Colorado and Gunnison, totaling approximately 45 square miles. Woolpert conducted a simultaneous collection of topographic lidar and bathymetric lidar using its Leica Chiroptera 4X sensor. All topographic lidar data was collected to meet USGS, Quality Level 1 (QL1) with a minimum of 8 ppsm at an accuracy of 10-cm RMSEz. A minimum of 2 ppsm was acquired for the bathymetric lidar data. Imagery data was also collected at 10-cm for use in point cloud editing and classification. Cost: 196,000
03/2020 – 03/2021	**Lidar Collections, Bare Earth and Seafloor Bathymetry Extractions| Great Lakes, North Carolina, Oregon, and Washington.** Aerial Pilot responsible for the safe operation of the aircraft during data collection and transit activities. Scope: this task order involved providing support for the operation of JALBTCX Coastal Zone Mapping and Imaging Lidar (CZMIL) sensors in support of the U.S. Army Corps of Engineers (USACE) National Coastal Mapping Program (NCMP) requirements along the coastlines in the Great Lakes, North Carolina, Oregon, and Washington. The collection's coverage included 500-meters inland and 1000-meters offshore for the entire mapping requirements illustrated in figures below. The team provided all planning, supervision, administration, labor, equipment, materials, supplies, and technical support necessary to perform the required data collection. This included the operation and maintenance of the CZMIL sensor, and the production of standard surveying, mapping, engineering, and charting products from the CZMIL data to meet NCMP specifications. Cost: 6,743,102

Firm employed by	Woolpert, Inc.			
Name	Ryan Comer		Years of relevant experience with this employer	7
Title	FAA-Certified Pilot		Years of relevant experience with other employer(s)	11
Degree(s) / Years / Specialization			Bachelor of Science / 2000 / Marine Transportation	
Active registration number / state / expiration date			#3885672 / National / N/A	
Year registered	2017	Discipline	FAA-Certified Pilot	
Contract role(s) / brief description of responsibilities			FAA-Certified Pilot professionally competent in aerial data acquisition. Experienced general aviation pilot and certified flight instructor with more than 2,700 flight hours supporting aerial data acquisition missions, with extensive experience in lidar and imagery collection flight planning for state and federal clients that include the USGS, USACE, and NOAA. The projects range from installation planning and emergency response/preparedness to large-scale projects. Exceeds the 5 years of experience minimum and meets MPR 6.	

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
09/2022 – 07/2024	**Lidar and Imagery Collection, Processing and Shoreline Mapping, Chesapeake Bay Shoreline Mapping | Maryland and Virginia.** Aerial Pilot responsible for the safe operation of the aircraft during data collection and transit activities. Scope: NOAA NGS selected Woolpert to provide topographic/bathymetric lidar data, digital imagery, and shoreline mapping updates over Tangier Sound in Chesapeake Bay in Maryland and Virginia and over Chincoteague Bay in Maryland and Virginia. The combined project areas covered approximately 1,738 linear miles of shoreline for photogrammetric compilation. Woolpert used a Leica HawkEye 4X (HE4X) sensor to acquire the topographic/bathymetric lidar data during time periods of optimal water clarity with a goal of reaching three Secchi depth or greater. The 25-centimeter pixel 4-band RGB/NIR imagery was acquired with a Leica Airborne Digital Sensor (ADS100). The ADS100 imagery was utilized for photogrammetric compilation of the Continually Updated Shoreline Product and for digital orthophoto production. Cost: $3,520,430
06/2017 – 06/2023	**Ohio Statewide Imagery Program (OSIP) 3 | Ohio.** Aerial Pilot responsible for the safe operation of the aircraft during data collection and transit activities. Scope: The Ohio Statewide Imagery Program 3 is a contract issued by the State of Ohio for the acquisition of professional geospatial services such as orthoimagery, lidar, oblique imagery, parcel conversion, and remote sensing analysis. The scope of this contract includes the entire geographic area of the state of Ohio (41,276 square miles) and immediately adjacent territory. Cost: $1,787,244
08/2022 – 08/2023	**2023 Orthophotography, Lidar, and Planimetric Mapping.** Aerial Pilot responsible for the safe operation of the aircraft during data collection and transit activities. Scope: Woolpert acquired and processed aerial imagery and topographic lidar to support the generation of 3-inch GSD, digital 4-band orthophotography and planimetric and topographic mapping encompassing the 654-square mile area of the County. Cost: $533,980
12/2019 – 10/2020	**Mississippi River Corridor Low Water Lidar Acquisition | Louisiana.** Aerial Pilot responsible for the safe operation of the aircraft during data collection and transit activities. Scope: Woolpert acquired and processed lidar elevation data along the Mississippi River corridor from Old River to just above Venice, Louisiana, near river mile 12 within the New Orleans District. The proposed 575-square-mile project supported channel improvement and obtains measurements of the bare-ground surface as well as top surface elevation data for USACE analysis. This project was a follow-on project to a 3-inch ground GSD, 4-band orthophotography project previously completed. Cost: $455,531
09/2021 – 02/2022	**Post-Hurricane Ida, 3-inch Aerial Imagery and Lidar Collection, Louisiana.** Aerial Pilot responsible for the safe operation of the aircraft during data collection and transit activities. Scope: Woolpert acquired and processed 3-inch, 4-band digital aerial imagery and lidar elevation data that supported emergency response for damage assessment following Hurricane Ida in Louisiana. This project included the collection of data along six levee systems within the New Orleans District: New Orleans to Venice Levee System (NOV and NOV NF); Westbank and Vicinity Levee System (WBV); Larose to Golden Meadow Levee System (LGM); Morganza to the Gulf Levee System (LGM); Lake Pontchartrain and Vicinity Levees (LPV); and Lafitte and Braithwaite Levees. Cost: $591,529
04/2023 – 11/2023	**San Joaquin River Restoration Program (SJRRP), U.S. Bureau of Reclamation | California.** Aerial Pilot responsible for the safe operation of the aircraft during data collection and transit activities. Scope: Woolpert acquired seven square miles of aerial topographic lidar, 23 square miles of aerial imagery, and multibeam hydrographic survey data was collected in the river channels. Cost: $184,936

Firm employed by Woolpert, Inc.			
Name	Tim Summey	Years of relevant experience with this employer	6
Title	Program Manager	Years of relevant experience with other employer(s)	36
Degree(s) / Years / Specialization			
Active registration number / state / expiration date			
Year registered	Discipline		
Contract role(s) / brief description of responsibilities		Program Manager and Senior Geospatial Specialist with over three decades of client development experience ensuring client goals and objectives are met by serving as a conduit for communication between clients and Woolpert staff. Mr. Summey is expert at steering projects toward success through strategic planning, scheduling and resource management. Brings to clients a comprehensive background in the large and small surveying and mapping projects along with the GIS industry, which encompasses both technical and business operational aspects.	

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
12/2017 – 01/2020	**Bayou Nezpique Lidar Survey | Louisiana.** Program Manager and Client Development Specialist who facilitated communications and coordinated activities between Woolpert and this USACE New Orleans District for this task order. Scope: Woolpert performed a lidar survey over an area of interest in south-central Louisiana which covered ±3,772 square miles and included the parishes of Acadia, Jefferson Davis, Allen, Evangeline and portions of St. Landry, Lafayette, Vermillion, Rapides, and Calcasieu to meet USGS QL1 standards (8 ppsm) in compliance with NGP Lidar Base Specification v1.2. The project required the classification of bare-earth data and hydro-flattening breakline collection. Cost: $980,000
08/2022 – 08/2023	**2023 Orthophotography, Lidar, and Planimetric Mapping | Lee County, Alabama.** Program Manager and Client Development Specialist who facilitated communications and coordinated activities between Woolpert and Lee County. Scope: Woolpert acquired and processed aerial imagery and 4 ppsm topographic lidar to support the generation of 3-inch GSD, digital 4-band orthophotography and planimetric and topographic mapping encompassing the 654-square mile area of the County. Cost: $533,980
12/2019 – 10/2020	**Mississippi River Corridor Low Water Lidar Acquisition | Louisiana.** Program Manager and Client Development Specialist who facilitated communications and coordinated activities between Woolpert and the USACE New Orleans District. Scope: Woolpert acquired and processed lidar elevation data along the Mississippi River corridor from Old River to just above Venice, LA, near river mile 12 within the New Orleans District. The 575 square-mile project supported channel improvement and obtains measurements of the bare-ground surface as well as top surface elevation data for USACE analysis. This project was a follow-on project to a 3-inch ground GSD, 4-band orthophotography project previously completed. Cost: $455,531
09/2021 – 02/2022	**Post-Hurricane Ida, 3-inch Aerial Imagery and Lidar Collection, Louisiana.** Program Manager and Client Development Specialist who facilitated communications and coordinated activities between Woolpert and this USACE New Orleans District for this task order. Scope: Woolpert acquired and processed 3-inch, 4-band digital aerial imagery and lidar elevation data that supported emergency response for damage assessment following Hurricane Ida in Louisiana. This project included the collection of data along six levee systems within the New Orleans District: New Orleans to Venice Levee System (NOV and NOV NF); Westbank and Vicinity Levee System (WBV); Larose to Golden Meadow Levee System (LGM); Morganza to the Gulf Levee System (LGM); Lake Pontchartrain and Vicinity Levees (LPV); and Lafitte and Braithwaite Levees. Cost: $591,529
12/2024 - 02/2025	**Color IR Digital Orthophotography for the Beneficial Use Monitoring Program (BUMP) (FY25), Louisiana.** Program Manager and Client Development Specialist who facilitated communications and coordinated activities between Woolpert and this USACE New Orleans District for this task order Scope: This USACE New Orleans District task order involved the acquisition and processing of color infrared aerial imagery and orthophotograph. Woolpert has collected and processed this data annually for over the last ten years. This project consisted of six locations totaling 1,043 square miles along the Louisiana Gulf Coast: Calcasieu, Louisiana (229.6 mi^2); Atchafalaya, Louisiana (109.9 mi^2); Houma, Louisiana (82.5 mi^2); Lafourche, Louisiana (50.2 mi^2); Barataria, Louisiana (64.6 mi^2); and Mississippi River, Louisiana (505.8 mi^2). Cost: $114,249
03/2020 – 06/2020	**2020 Mississippi River Corridor Imagery | Louisiana.** Program Manager and Client Development Specialist who facilitated communications and coordinated activities between Woolpert and the USACE New Orleans District. Scope: Woolpert acquired and processed digital 4-band aerial imagery and 3" GSD orthophotography for ±629 mi2 of the MS River corridor from Old River to the end of SW Pass, Gulf of Mexico. A photogrammetric control survey was performed to support accuracy of the final orthophoto products. Cost: $610,296

Firm employed by	Woolpert, Inc.			
Name	Luis (Michael) Venegas, CP, LSSYB, LIA		Years of relevant experience with this employer	11
Title	Quality Manager		Years of relevant experience with other employer(s)	16
Degree(s) / Years / Specialization			Bachelor of Arts / 1998 / Geography	
Active registration number / state / expiration date			#1568 / National / 06/18/2029 LSSYB (ID 48960220) ID C-433282	
Year registered	2014 2022 2022	Discipline	ASPRS Certified Photogrammetrist Lean Six Sigma Yellow Belt (LSSYB) Certified ISO 9001:2015 Lead Internal Auditor	
Contract role(s) / brief description of responsibilities			Works with all levels of data production and management to develop quality policy, objectives, track and report key performance metrics and manages all ISO 9001:2015 required documentation. He supports internal management review as well as external surveillance and re-certification audits; and conducts all internal ISO audits, identifies nonconformance, documents corrective actions and verifies the resolution. His responsibilities include verifying all Quality Management System (QMS) materials (workflows, checklists, quality plans) are aligned to project requirements, are applied during production operations, and are generating performance metrics to drive project evaluation and provide continual improvements.	

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
12/2017 – 01/2020	**Bayou Nezpique Lidar Survey | Louisiana. Quality Manager** who provided oversight and adherence to Woolpert's ISO Program and project specifications. He was involved in the evaluation of performance metrics during the production tasks and incorporation of the data validation reports for process improvements. Scope: Woolpert performed a lidar survey over an area of interest in south-central Louisiana which covered ±3,772 square miles and included the parishes of Acadia, Jefferson Davis, Allen, Evangeline and portions of St. Landry, Lafayette, Vermillion, Rapides, and Calcasieu to meet USGS QL1 standards (8 ppsm) in compliance with NGP Lidar Base Specification v1.2. The project required the classification of bare-earth data and hydro-flattening breakline collection. Cost: $980,000
09/2021 – 02/2022	**Post-Hurricane Ida, 3-inch Aerial Imagery and Lidar Collection, Louisiana. Quality Manager** who provided oversight and adherence to Woolpert's ISO Program and project specifications. He was involved in the evaluation of performance metrics during the production tasks and incorporation of the data validation reports for process improvements. Scope: Woolpert acquired and processed 3-inch, 4-band digital aerial imagery and lidar elevation data that supported emergency response for damage assessment following Hurricane Ida in Louisiana. This project included the collection of data along six levee systems within the New Orleans District: New Orleans to Venice Levee System (NOV and NOV NF); Westbank and Vicinity Levee System (WBV); Larose to Golden Meadow Levee System (LGM); Morganza to the Gulf Levee System (LGM); Lake Pontchartrain and Vicinity Levees (LPV); and Lafitte and Braithwaite Levees. Cost: $591,529
08/2022 – 09/2023	**2022 Shoreline Mapping Project, LA2208-TB-C | Louisiana. Quality Manager** who provided oversight and adherence to Woolpert's ISO Program and project specifications. He was involved in the evaluation of performance metrics during the production tasks and incorporation of the data validation reports for process improvements. Scope: NOAA NGS selected Woolpert to acquire and process topographic/bathymetric lidar and imagery covering ±272 square miles over the coastal Louisiana as part of supplemental funding for Hurricane Ida. This data will be used for the updating of the national shoreline and to support other mapping, charting, geodetic, and coastal uses. Lidar was collected in fall 2022 to meet a ≥ 2.0 ppsm density and 1.5 secchi depth in accordance with the QL2B as specified in the National Coastal Mapping Strategy 1.0 Document. The bathymetric lidar data was collected to support 100% coverage to meet IHO Order 1b specifications. Cost: $516,726
08/2022 – 08/2023	**2023 Orthophotography, Lidar, and Planimetric Mapping | Lee County, Alabama. Quality Manager** who provided oversight and adherence to Woolpert's ISO Program and project specifications. He was involved in the evaluation of performance metrics during the production tasks and incorporation of the data validation reports for process improvements. Scope: The County Cooperative comprises Lee County, the Cities of Auburn and Opelika, and Auburn University. Woolpert acquired and processed aerial imagery and 4 ppsm topographic lidar to support the generation of 3-inch GSD, digital 4-band orthophotography and planimetric and topographic mapping encompassing the 654-square mile area of the County. Cost: $533,980

Firm employed by	Woolpert, Inc.			
Name	Daniel Kuxhausen		Years of relevant experience with this employer	26
Title	Party Chief		Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization				
Active registration number / state / expiration date			FAA IDLE (#20100609-00007) / National / N/A	
Year registered	2010	Discipline	Survey	
Contract role(s) / brief description of responsibilities			Seasoned Party Chief who performs necessary field calculations to perform construction staking; data reduction of field collected data; documentation of field work to effectively communicate project information; limited document research including obtaining tax maps, survey records, deeds, and utility maps; uses CAD tools to view and assimilate data collected and to compile survey plans; and performs QA/QC of all data recorded and collected.	

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
01/2022 – 08/2022	**SD FLAP CE23A (1) Delta Access Road, Boundary, Topographic and Right-of-Way Surveying and Mapping | South Dakota**. Party Chief who performed the field topographic mapping survey, managed equipment, and quality-controlled data for this roadway improvement project. Scope**:** The scope of this project involved performing surveying and right-way-way services as well as engineering, hydraulic, geotechnical, and pavement design towards delivery of a final set of plans, specifications, and an estimate for the FHA, Central Federal Lands Highway Division's (CFLHD) proposed improvements to 0.59 miles of Jackson County CS-23A. Cost**:** $23,769
11/2021 – 03/2022	**Topographic Survey for the City of Colorado Springs on Tech Center Drive | El Paso County, Colorado**. Party Chief for a topographic survey of ±.25 miles. Dan supervised a team who performed traffic control to conduct topographic surveying in the crown of the road, existing striping, and other features that are located on the hard surface within the limits of the survey. The topographic and control diagram was delivered in MicroStation. Scope: Woolpert was contracted to provide land surveying services consisting of a complete topographic survey. Cost: $9,500
10/2021 – 10-2022	**CFLHD NV FLAP NYE Bob Ruud Memorial Hwy | Nevada.** Party Chief who performed the field topographic mapping survey, managed equipment, and quality-controlled data for this roadway improvement project. Scope: The general scope of roadway improvements was programmed as rehabilitating and paving 15 miles of Bob Ruud Memorial Highway and 5.6 miles of Bell Vista Avenue. Additional work included drainage improvements, upgraded to meet new standards. The road was widened to 28 feet. These improvements were designed and implemented in accordance with CFLHD and AASHTO Highway Design Standards. Cost: $217,679
04/2023 – 11/2023	**San Joaquin River Restoration Program (SJRRP), U.S. Bureau of Reclamation | California.** Party Chief who oversaw the establishment of ground control to support aerial data acquisition. Scope: The team acquired seven square miles of aerial lidar, 23 square miles of aerial imagery, alongside multibeam bathymetry, all while supporting ground control around two river channels for two AOIs near Dos Palos and Mendota, California. Cost: $184,936
03/2016 – 09/2017	**Hampton Roads Bridge Tunnel Expansion – Mobile and Terrestrial Lidar and SUE Services | Norfolk, Virginia**. Party Chief who deployed and managed the survey crews to perform services that included Safety/Traffic Control/MOT, SUE Services for Major Utility Crossings (Quality Level B), Surveying Services for Storm Drainage and Sanitary Sewer, Supplemental Survey Control for Terrestrial Scanning/Mobile lidar, Pavement/Hardscape Collection/DTM Augmentation, and Data Fusion of new hardscape and aerial mapping of softscape. Woolpert adhered to the prescribed Work Area Protection Manual while working within the limited access right of way and coordinated with VDOT LCAMS and Virginia Traffic Systems to ensure compliance of the seven-day advance notification procedures. Cost: $1,156,460
08/2022 – 09/2023	**2022 Shoreline Mapping Project, LA2208-TB-C | Louisiana.** Party Chief who oversaw the establishment of ground control to support aerial data acquisition. Scope: NOAA NGS selected Woolpert to acquire and process topographic/bathymetric lidar and imagery covering ±272 square miles over the coastal Louisiana as part of supplemental funding for Hurricane Ida. This data will be used for the updating of the national shoreline and to support other mapping, charting, geodetic, and coastal uses. Lidar was collected in fall 2022 to meet a ≥ 2.0 ppsm density and 1.5 secchi depth in accordance with the QL2B as specified in the National Coastal Mapping Strategy 1.0 Document. The bathymetric lidar data was collected to support 100% coverage to meet IHO Order 1b specifications. Cost: $516,726

Firm employed by	Woolpert, Inc.			
Name	Zachary Hearon		Years of relevant experience with this employer	14
Title	Survey Technician		Years of relevant experience with other employer(s)	11
Degree(s) / Years / Specialization				
Active registration number / state / expiration date			#4274663 / National / 02/2027	
Year registered	2019	Discipline	FAA Remote Pilot	
Contract role(s) / brief description of responsibilities			Experience Survey Technical who performs boundary, ALTA/ACSM, topographic, construction, GPS control, and deed research for private and government clients. Adept at preparing necessary documentation of field work (electronic and hardcopy) to effectively communicate project information, and is responsible for overseeing field procedures from start to finish and providing final checks on field data computations. He is proficient in the use of Real-Time Kinematic (RTK) GPS total station equipment and associated data collection software.	

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
09/2021 – 02/2022	**Post-Hurricane Ida, 3-inch Aerial Imagery and Lidar Collection, Louisiana.** Survey Technician responsible for setting ground control collecting and analyzing geospatial data using advanced aerial mapping technologies to ensure accurate and detailed topographical information for project planning and development. Scope: Woolpert acquired and processed 3-inch, 4-band digital aerial imagery and lidar elevation data that supported emergency response for damage assessment following Hurricane Ida in Louisiana. This project included the collection of data along six levee systems within the New Orleans District: New Orleans to Venice Levee System (NOV and NOV NF); Westbank and Vicinity Levee System (WBV); Larose to Golden Meadow Levee System (LGM); Morganza to the Gulf Levee System (LGM); Lake Pontchartrain and Vicinity Levees (LPV); and Lafitte and Braithwaite Levees. Cost: $591,529
12/2024 / 02/2025	**Color IR Digital Orthophotography for the Beneficial Use Monitoring Program (BUMP) (FY25), Louisiana.** Survey Technician responsible setting ground control and for collecting and analyzing geospatial data using advanced aerial mapping technologies to ensure accurate and detailed topographical information for project planning and development. Scope: This USACE New Orleans District task order involved the acquisition and processing of color infrared aerial imagery and orthophotograph. Woolpert has collected and processed this data annually for over the last ten years. This project consisted of six locations totaling 1,043 square miles along the Louisiana Gulf Coast: Calcasieu, Louisiana (229.6 mi^2); Atchafalaya, Louisiana (109.9 mi^2); Houma, Louisiana (82.5 mi^2); Lafourche, Louisiana (50.2 mi^2); Barataria, Louisiana (64.6 mi^2); and Mississippi River, Louisiana (505.8 mi^2). Cost: $114,249
10/2020 – 06/2021	**Norfolk Lake Encroachment Survey and Mapping | Baxter County, Arkansas**. Survey Technician who located and mapped the existing Government Fee Taking Line (GFTL) monuments. Scope: The team surveyed encroachments that crossed over the GFTL onto government property at previously surveyed portions of Norfolk Lake. Work included locating and mapping the existing GFTL monuments on each side of, and along any, found encroachments at each area. Cost: $35,267
08/2018 – 01/2020	**Boundary and Right of Way (ROW) Services for Catwalk Road—Federal Highway Administration | New Mexico.** Survey Technician who performed right-of-way and survey services towards delivery of a final set of right of way plans, exhibits, and descriptions for proposed improvements to NM 174/Catwalk Road for 4.5 miles. Scope**:** This project involved both private property and national forest and included establishing existing ROW for the entire project length, locating additional Public Land Corners and private property pins, developing draft and final right of way plans according to New Mexico DOT standards, providing descriptions and exhibits for acquisition of private parcels according to NMDOT standards, and providing exhibits and centerline description for a national forest parcel. Cost**:** $91,765
04/2020 – 11/2020	**Range Point Rehabilitation Project, City and County of Denver | Denver, Colorado.** Survey Technician responsible for locating survey monuments in the roadway. Scope: The team conducted a diligent search for all range points and land corners within the project limits and then installed a new monument box and 3" riser ring at all found range point and land corner locations. Survey staff prepared a city/state monument tie-sheet showing monument locations and all found or set tie and provided a traffic control on arterial and collector streets per MUTCD standards. Cost: $99,900

Firm employed by	Woolpert, Inc.			
Name	Woolpert, Inc.		Years of relevant experience with this employer	10
Title	Ben Beckman		Years of relevant experience with other employer(s)	4
Degree(s) / Years / Specialization			Bachelor of Science / 2007 / Geographic Information Systems	
Active registration number / state / expiration date				
Year registered		Discipline		
Contract role(s) / brief description of responsibilities			Responsible for performing and leading the calibration and processing of lidar data acquired by aerial lidar systems, employing and/or developing software, integrations, and methodologies for lidar calibration, automation, point cloud filtering, and QA/QC as well as proprietary data calibration procedures to optimize data accuracy.	

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
04/2023 – 11/2023	**San Joaquin River Restoration Program (SJRRP), U.S. Bureau of Reclamation | California.** Lidar Lead responsible for managing the topographic lidar discipline team, and performed IMU and lidar point processing, calibration, editing and classified lidar data and adhering to project-specific workflows and QA/QC processes. Scope: Woolpert was contracted to acquire aerial lidar, aerial imagery, and multibeam bathymetry for two AOIs near Dos Palos and Mendota, CA, for the U.S. Bureau of Reclamation (USBR). Approximately 23 square miles of aerial imagery and seven square miles of topographic lidar were collected. Multibeam hydrographic survey data was collected in the river channels. Cost: $184,936
08/2022 – 09/2023	**2022 Shoreline Mapping Project, LA2208-TB-C | Louisiana.** Lidar Lead responsible for managing the topographic lidar discipline team, and performed IMU and lidar point processing, calibration, editing and classified lidar data and adhering to project-specific workflows and QA/QC processes. Scope: NOAA NGS selected Woolpert to acquire and process topographic/bathymetric lidar and imagery covering ±272 square miles over the coastal Louisiana as part of supplemental funding for Hurricane Ida. This data will be used for the updating of the national shoreline and to support other mapping, charting, geodetic, and coastal uses. Lidar was collected in fall 2022 to meet a ≥ 2.0 ppsm density and 1.5 secchi depth in accordance with the QL2B as specified in the National Coastal Mapping Strategy 1.0 Document. The bathymetric lidar data was collected to support 100% coverage to meet IHO Order 1b specifications. Cost: $516,726
08/2022 – 08/2023	**2023 Orthophotography, Lidar, and Planimetric Mapping | Lee County, Alabama.** Lidar Lead responsible for managing the topographic lidar discipline team, and performed IMU and lidar point processing, calibration, editing and classified lidar data and adhering to project-specific workflows and QA/QC processes. Scope: The County Cooperative comprises Lee County, the Cities of Auburn and Opelika, and Auburn University. Woolpert acquired and processed aerial imagery and 4 ppsm topographic lidar to support the generation of 3-inch GSD, digital 4-band orthophotography and planimetric and topographic mapping encompassing the 654-square mile area of the County. Cost: $533,980
12/2019 – 10/2020	**Mississippi River Corridor Low Water Lidar Acquisition | Louisiana.** Lidar Lead responsible for managing the topographic lidar discipline team, and performed IMU and lidar point processing, calibration, editing and classified lidar data and adhering to project-specific workflows and QA/QC processes. Scope: Woolpert acquired and processed lidar elevation data along the Mississippi River corridor from Old River to just above Venice, Louisiana, near river mile 12 within the New Orleans District. The proposed 575-square-mile project supported channel improvement and obtains measurements of the bare-ground surface as well as top surface elevation data for USACE analysis. This project was a follow-on project to a 3-inch ground GSD, 4-band orthophotography project previously completed. Cost: $455,531
09/2021 – 02/2022	**Post-Hurricane Ida, 3-inch Aerial Imagery and Lidar Collection, Louisiana.** Lidar Lead responsible for managing the topographic lidar discipline team, and performed IMU and lidar point processing, calibration, editing and classified lidar data and adhering to project-specific workflows and QA/QC processes. Scope: Woolpert acquired and processed 3-inch, 4-band digital aerial imagery and lidar elevation data that supported emergency response for damage assessment following Hurricane Ida in Louisiana. This project included the collection of data along six levee systems within the New Orleans District: New Orleans to Venice Levee System (NOV and NOV NF); Westbank and Vicinity Levee System (WBV); Larose to Golden Meadow Levee System (LGM); Morganza to the Gulf Levee System (LGM); Lake Pontchartrain and Vicinity Levees (LPV); and Lafitte and Braithwaite Levees. Cost: $591,529

Firm employed by Woolpert, Inc.				
Name	Qian Xiao, CP		Years of relevant experience with this employer	25
Title	Lidar Specialist/Analyst		Years of relevant experience with other employer(s)	8
Degree(s) / Years / Specialization			Master of Science / 1989 / Computing Science and Mathematics Master of Science / 1992 / Geodetic Science and Surveying Bachelor of Science / 1989 / Mathematics	
Active registration number / state / expiration date			#1281 / National / 01/01/2026	
Year registered	2006	Discipline	ASPRS Certified Photogrammetrist	
Contract role(s) / brief description of responsibilities			Lidar Specialist/Analyst skilled in sensor calibration and the post processing of data acquired by aerial, terrestrial and mobile systems with extensive experience with developing software and methodology for lidar data calibration, process automation, QA/QC and custom applications and assists with various automation and processing methodologies. He has extensive experience in delivering lidar data in various formats, including file geodatabases and accurately fusing aerial and terrestrial lidar together with a wide spectrum of imagery data, and develops proprietary lidar data calibration procedures to optimize point cloud filtering for final data products.	

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
05/2019 – 03/2020	**High-Resolution Topographic Lidar, USGS – OH Columbus 2019 B19 Columbus, Ohio.** Lidar Specialist/analyst who performed the post-acquisition data review and QC, trajectory processing and QC, and calibration of the collected lidar data. Scope: This task involved the collection and processing of QL0 lidar data (12 ppsm) totaling 755 mi2 across the City of Columbus Ohio area and including the full county of Franklin and partial counties of Delaware, Fairfield, Licking, Madison, Marion, Pickaway, and Union. The project data will support the 3DEP mission and was processed according to the methodology outlined in USGS' "National Geospatial Program Lidar Base Specification, Version 1.3" document. Cost: $278,099
09/2022 – 01/2025	**Air Force Civil Engineer Command (AFCEC) Installation Aerial Imagery Data Collection, Phase IX | Locations Worldwide.** Lidar Specialist/Analyst who performed post processing of IMU data using Leica Cloud Pro and Applanix POSPac position and orientation system software. Also provided an in-brief with AFSOC technical staff to outline the collection and processing plans for each installation. Scope: Airborne data collection, ground control surveys, and processing of high-resolution color orthoimagery and high-density lidar data for 21 USAF locations worldwide in 10 different countries (3 CONUS and 18 OCONUS installation sites) totaling 2,381 km². Cost:$ 4,700,000
04/2016 – 04/2020	**Tennessee 3DEP Statewide 0.7M NPS Lidar | Tennessee.** Lidar Specialist/Analyst who performed the post-acquisition data review and QC, trajectory processing and QC, and calibration of the collected lidar data. Scope: Under several separate USGS task orders, Woolpert acquired new high resolution, QL2, 0.7-meter NPS lidar data across 93 Tennessee counties, approximately 41,908 square miles, directly in support of the 3D Elevation Program (3DEP). The fifth task order covers three counties in western Tennessee and meets 3DEP standards. Cost: $6,497,569
08/2023 – 05/2025	**OR_ Southeast_D22, USGS Lidar | Oregon**. **Lidar Specialist** responsible for the processing (data calibration, ground filtering, classification, DEM creation, hydrologic breakline compilation and DEM flattening, intensity imagery production, data QA/QC, accuracy analysis. Scope: Fall leaf-off 2022 QL1 lidar surveys collected over a base area of approximately 31,682 square miles and an option area of approximately 1,190 square miles, for a total Defined Project Area of approximately 32,872 square miles. The data is used for updates and enhancements to existing work by local governments for stormwater management, urban planning, historic and natural resource preservation, emergency services and hazard assessment support, and provide current, consistent data for regional planning efforts, and the 3DEP mission. Task order specifications are based on the U.S. Geological Survey "National Geospatial Program Lidar Base Specification 2022, Revision A" (LBS 2022, Revision A). Cost: $$9,851,366
09/2018 - 092019	**High-Resolution Topographic Lidar, USGS – Oklahoma Panhandle | Oklahoma City, Oklahoma.** Lidar Specialist who performed the post-acquisition data review and QC, trajectory processing and QC, and calibration of the collected lidar at an NPS of 0.71 meters (QL2) for multiple AOIs totaling ±7,176 square miles over the Oklahoma Panhandle region. Scope: This task order involved the collection of lidar data at an NPS of 0.71 meters (QL2) for multiple AOIs totaling ±7,176 square miles, processing included ground filtering, DEM production and QA/QC, hydrologic compilation, and flattening, intensity imagery production, accuracy analysis, and reporting. The DEM was created from the bare earth surface model created during the post-processing of the raw point cloud data. Cost: $1,506,628

Firm employed by Woolpert, Inc.			
Name	Zach Shuler	Years of relevant experience with this employer	18
Title	Topographic Lidar Processing Specialist	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization		Bachelor of Arts / 2007 / Geography	
Active registration number / state / expiration date			
Year registered	Discipline		
Contract role(s) / brief description of responsibilities		Responsible for development and implementation of project-specific lidar data processing workflows and developing proprietary methodologies for lidar data calibration, process automation, data QA/QC and custom applications. He oversees lidar production workflows including resource allocation, adherence to project specifications, lidar classification and editing, and the generation of deliverable products and derivatives. Derivative products have included: bare earth DEMs, intensity images, TINs, seamless topographic/bathymetric datasets, tile indexes, contours, structure footprints/ LAG elevations, and reports.	

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
09/2021 – 08/2023	**AZ_Black Rock Goodwin 2021 D21, USGS Lidar | Arizona.** Lidar team lead for the data processing that included data calibration, ground filtering, classification, DEM creation, hydrologic breakline compilation and DEM flattening, intensity imagery production, and accuracy analysis. Scope: Fall leaf-off 2021 high-resolution QL1 lidar was acquired at an aggregate nominal pulse spacing of 0.35-meters (8-points per square meter) over an Area of Interest covering ±786 square miles in southeastern Arizona. Task order specifications are based on the "U.S. Geological Survey National Geospatial Program Lidar Base Specification 2021, Revision A". Cost: $312,673
03/2024 – 11/2026	**CA_FEMAR9Southeast_D24, USGS Lidar | California.** Lidar team lead for the data processing that included data calibration, ground filtering, classification, DEM creation, hydrologic breakline compilation and DEM flattening, intensity imagery production, and accuracy analysis. Scope: This project involved the acquisition of ±23,007 square miles of QL1 lidar data over southeastern California. The data will support FEMA, BLM, and the USGS 3DEP and the Earth MRI programs.Task order specifications are based on the U.S. Geological Survey "National Geospatial Program Lidar Base Specification 2024, Revision A"." Cost: $6,882,597
04/2023 – 11/2023	**San Joaquin River Restoration Program (SJRRP), U.S. Bureau of Reclamation | California.** Lidar team lead for the data processing that included data calibration, ground filtering, classification, DEM creation, hydrologic breakline compilation and DEM flattening, intensity imagery production, and accuracy analysis. Scope: Woolpert was contracted to acquire aerial lidar, aerial imagery, and multibeam bathymetry for two AOIs near Dos Palos and Mendota, CA, for the U.S. Bureau of Reclamation (USBR). Approximately 23 square miles of aerial imagery and seven square miles of topographic lidar were collected. Multibeam hydrographic survey data was collected in the river channels. Cost: $184,936
09/2022 – 01/2025	**WY_GrandTetonNP_D22, USGS Lidar | Wyoming.** Lidar team lead for the data processing that included data calibration, ground filtering, classification, DEM creation, hydrologic breakline compilation and DEM flattening, intensity imagery production, and accuracy analysis. Scope: This task order was for the planning, acquisition, processing, and derivative products of QL1 lidar was acquired at an aggregate nominal pulse spacing of 0.35-meters at 8-points per square meter. It required a fall leaf-off 2022 acquisition over ±1,874 square miles in the states of Montana and Wyoming. The base order covered ±521 square miles of Grand Teton National Park and approximately 1,353 square miles of flood impacted areas in Yellowstone National Park. The task order data deliverables included automated classification of building footprints, a Digital Surface Model, and 1-foot contours. Task order specifications are based on the U.S. Geological Survey "National Geospatial Program Lidar Base Specification 2022, Revision A". Cost: $ 684883
07/2023 – 03/2026	**CO_ArapahoRooseveltPikeNF_D23, USGS Lidar | Colorado.** Lidar team lead for the data processing that included data calibration, ground filtering, classification, DEM creation, hydrologic breakline compilation and DEM flattening, intensity imagery production, and accuracy analysis. Scope: Summer leaf-on 2023 lidar surveys to be collected of ±3,379 square miles over a portion of the Arapahoe, Roosevelt, and Pike-San Isabel National Forests along with the Cimarron and Comanche National Grasslands in Colorado. The data was collected to QL1 specifications using 55% sidelap during acquisition. The purpose of this project was to obtain high quality elevation data to support the estimation of forest inventory parameters, assist in post-fire damage assessment, and provide for high quality baseline data across the landscape that will aid future GIS analysis, change detection activities, and support the 3DEP mission. Task order specifications are based on the U.S. Geological Survey "National Geospatial Program Lidar Base Specification 2022, Revision A". Cost: $ 1,378,757

Firm employed by Woolpert, Inc.			
Name	Nick Wilson	Years of relevant experience with this employer	7
Title	Bathymetric Lidar Processing Specialist	Years of relevant experience with other employer(s)	2
Degree(s) / Years / Specialization		Master of Science / 2017 / Civil Engineering Bachelor of Science / 2014 / Civil Engineering	
Active registration number / state / expiration date		N/A	
Year registered	N/A	Discipline	N/A
Contract role(s) / brief description of responsibilities		Possesses technical and theoretical expertise in developing radiometric calibration procedures for bathymetric lidar from algorithm development through implementation; assessing lidar intensity corrections and calibration techniques and their effectiveness in applications using the intensity information from a variety of systems. He is instrumental in the development of best practices and processing workflows for bathymetric lidar and sonar workflows as well as operating bathymetric lidar sensor and GPS systems for controlling data acquisition.	

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
10/2023 – 12/2024	**Bathymetric Lidar Data Collection | Collier to Dade Counties, Florida.** Lidar Specialist responsible for reflectance correction, lidar editing and processing, and final product generation. Scope: Woolpert was contracted collect and process bathymetric lidar for 0m – 20m water depths within the Keys (3) Region of Florida, ±20,099 square kilometers. Staff developed the flight plan, planned, and performed the ground control survey fieldwork, acquired bathymetric lidar data, and is performing bathymetric lidar data point cloud classification, editing, and quality control. After all data is collected and processed, Woolpert generated DEMs and delivered final lidar data products, project reports, and metadata. Woolpert deployed a Leica HawkEye 4X topo-bathymetric lidar sensor to acquire the bathymetric lidar. This system provided denser data than previous traditional bathymetric lidar systems given its ability to collect topographic lidar, shallow channel, deep channel bathymetric lidar, and 4-band digital camera imagery simultaneously. Cost: $12,879,900
08/2022 – 09/2023	**2022 Shoreline Mapping Project, LA2208-TB-C | Louisiana.** Lidar Specialist responsible for reflectance correction, lidar editing and processing, and final product generation. Scope: NOAA NGS selected Woolpert to acquire and process topographic/bathymetric lidar and imagery covering ±272 square miles over the coastal Louisiana as part of supplemental funding for Hurricane Ida. This data will be used for the updating of the national shoreline and to support other mapping, charting, geodetic, and coastal uses. Lidar was collected in fall 2022 to meet a ≥ 2.0 ppsm density and 1.5 secchi depth in accordance with the QL2B as specified in the National Coastal Mapping Strategy 1.0 Document. The bathymetric lidar data was collected to support 100% coverage to meet IHO Order 1b specifications. Cost: $516,726
09/2022 – 09/2023	**2022 Shoreline Mapping AS2201-TB-C | Pacific Islands and American Samoa**. Lidar Specialist responsible for bathymetric lidar data calibration, reflectance correction, lidar editing and processing, calculating and providing TPU, and final product generation. Scope**:** Woolpert acquired and processed ±277 square miles of topographic/bathymetric lidar and imagery in American Samoa for use in updating the national shoreline and to support other mapping, charting, geodetic, and coastal uses. Cost**:** $1,708,872
06/2021 – 01/2022	**NOAA/NPS Bathymetric Lidar Data Collection at Sleeping Bear Dunes National Lakeshore | Michigan.** Lidar Specialist responsible for reflectance correction, lidar editing and processing, and final product generation. Scope: To fill critical gaps in understanding benthic habitat within Lake Michigan at Sleeping Bear Dunes National Lakeshore (SLBE), Woolpert acquired new bathymetric lidar to support multiple agencies. The total estimated area of bathymetric data acquisition was approximately 78 square kilometers. The lidar data was collected in late summer 2021 using a Leica HawkEye 4x system to reach the 25-meter depth limit at an aggregate nominal pulse density (ANPD) ≥ 1 pulse per square meter (ppsm) with a desired vertical accuracy of ≤ 15-cm RMSE (24.9-cm accuracy). After the data acquisition, coverage files were generated in the field to ensure data quality. Once the collected data was accepted the lidar data point cloud was classified. Cost: 229,544
12/2022 – 09/2024	**Topography/Bathymetry, Lidar and Imagery Collection/Processing, NOAA NGS | Northwestern Hawaii.** Lidar Specialist responsible for reflectance correction, lidar editing and processing, and final product generation. Scope: Woolpert acquired and processed topo-bathymetric lidar and imagery for ±1,687 square miles over the Islands Nihoa, Necker, Niihau, and French Frigate in Hawaii for updating nautical charts and other uses. The data was produced to meet the National Coastal Mapping Strategy (NCMS) for bathymetric lidar v1.0 standard. Cost**:** $3,170,567

Firm employed by	Woolpert, Inc.			
Name	Kayla Keller		Years of relevant experience with this employer	7
Title	Lidar Products Manager		Years of relevant experience with other employer(s)	5
Degree(s) / Years / Specialization			Master of Science / 2017 / GIS (Sustainability) Bachelor of Science / 2012 / Geography (Atmospheric Sciences	
Active registration number / state / expiration date				
Year registered		Discipline		
Contract role(s) / brief description of responsibilities			Lidar Products Manager who manages the creation of FGDC-compliant metadata for delivery in the appropriate client format (e.g., ArcGIS, XML) and assist in the development of the geodatabase, verifies accuracy, completeness, consistency, and aesthetics of final data products, and develops and implements project-specific classification processes using filtering algorithms and perform manual edits on the bare-earth surface to produce a rasterized DEM.	

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
08/2022 – 08/2023	**2023 Orthophotography, Lidar, and Planimetric Mapping | Lee County, Alabama.** Lidar Products Manager who gathered all necessary data and set up project files, oversaw tech work, answered tech questions, performed QC, and formatted the final deliverable to client specifications. Scope: The County Cooperative comprises Lee County, the Cities of Auburn and Opelika, and Auburn University. Woolpert acquired and processed aerial imagery and 4 ppsm topographic lidar to support the generation of 3-inch GSD, digital 4-band orthophotography and planimetric and topographic mapping encompassing the 654-square mile area of the County. Cost: $533,980
09/2021 – 09/2022	**Countywide Planimetric Updates, Rutherford County, Tennessee.** Lidar Products Manager who gathered all necessary data and set up project files, oversaw tech work, answered tech questions, performed QC, and formatted the final deliverable to client specifications. Scope: Woolpert was selected to update all planimetric data across the county for hydrology (polygons and lines), structures (polygon with elevation), and tree and transportation (polygon) GIS features using the existing county GIS schema. The project area consisted of tile deliveries of the entire Rutherford County boundary. Woolpert utilized the most recent aerial imagery provided by the county. The accuracy of planimetric data met the accuracy of the orthoimagery. Woolpert identified what had changed by doing a change detection process used for all updated planimetric features, including the 3D update for buildings. Woolpert delivered a geodatabase of updated county planimetric data in four incremental deliveries throughout the lifespan of the project as well as FGDC Metadata. This included buildings with a 3D height attribute depicting the tallest point of the buildings. Cost: $180,000
04/2022 – 09/2022	**Countywide Orthoimagery, Delaware County, Ohio.** Lidar Products Manager and Remote Sensing Technician who gathered all necessary data and set up project files, oversaw tech work, answered tech questions, performed QC, and formatted the final deliverable to client specifications. She also captured crop data and classified it per the project plan, communicated with project manager, and monitored the budget. Scope: Existing ground control and lidar data were utilized to provide the County with the most economical product. The orthoimagery was delivered as a countywide dataset, consisting of 5,000' x 5,000' uncompressed 8-bit, 4-band color GeoTIFF files. Each GeoTIFF ortho file was approximately 100 megabytes in size. Additional deliverables included countywide color and color infrared MrSID images (20x and 100x compressions), tile index provided in Esri shapefile format, and Current Agricultural Use Value (CAUV) crop delineation layer in Esri GDB format. Cost: $106,116
05/2020 – 06/2021	**GIS Building Outline Dataset Enhancement, Franklin County Auditor for Columbus, Ohio.** Lidar Products Manager and Remote Sensing Technician who gathered all necessary data and set up project files, oversaw tech work, answered technical questions, performed QC, and formatted the final deliverable to client specifications. She also captured buildings per client specifications, communicated with the project manager, and monitored the budget. Scope: Franklin County, Ohio hired Woolpert to update and enhance its building outlines to support both local municipality and county GIS business objectives. Woolpert performed high-resolution photography services for the City of Columbus, covering approximately 544 square miles, in 2019. Utilizing that imagery, Woolpert applied a proprietary analysis process to validate the outlines of discreet buildings in highly dense urban areas. Woolpert used an interactive automated feature extraction process to produce the building outlines. The team utilized off-the-shelf remote sensing software alongside proprietary software and applications to perform automated feature analysis incorporating both imagery and lidar data. Cost: $491,919

Firm employed by Woolpert, Inc.			
Name	Brandon McKenzie	Years of relevant experience with this employer	25
Title	Orthoimagery Manager	Years of relevant experience with other employer(s)	2
Degree(s) / Years / Specialization		Bachelor of Arts / 1998 / GIS/Remote Sensing/Technical Geography	
Active registration number / state / expiration date			
Year registered	Discipline		
Contract role(s) / brief description of responsibilities		Proficient in mosaicking, rectification, triangulation, cartography, and compilation. He routinely uses Xpro to process digital and lidar data from Woolpert's airborne digital sensors and has additional knowledge in softcopy digital ortho imagery procedures using Intergraph ImageStation, Inpho, OrthoPro, GeoCue, Socket Set, ERDAS, and TerraModel.	

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
04/2020 – 12/2021	**Table Mountain Colorado Multiple Geospatial Products, USGS | Colorado.** Imagery Specialist who processed four-band digital aerial imagery acquired at 3cm GSD was collected with a Vexcel UltraCam Eagle Mark 3 camera system during leaf-off conditions. Imagery collection was synchronized with the collection of the airborne lidar. **Scope:** Using this USACE contracting vehicle, the NGA required Research Directorate required dense ground control, high resolution digital imagery, high accuracy aerial lidar, terrestrial lidar and 3D models, and research analytics over a 13 mi2 area centered around the ITS Table Mountain Field Site, Boulder, CO. **Cost:** $311,716
08/2020 – 08/2021	**Lidar and Orthoimagery Project | Missouri.** Imagery Specialist who produced 7 cm high resolution orthoimagery across three AOIs along the Missouri River. Brandon processed, analyzed and quality control the orthoimagery data for delivery to the client. Scope**:** Woolpert acquired and processed lidar and imagery products to support the USACE Omaha District's planning, design, research, and mapping for three locations on the River: Garrison Reach (407.9 km^2) in North Dakota; Fort Randall Reach (242.9 km^2) and Gavins Point Reach (232.1 km^2) along the South Dakota/Nebraska border. Cost: $330,473
09/2021 – 02/2022	**Post-Hurricane IDA, 3-inch Aerial Imagery and Lidar Collection | Louisiana**. Imagery Specialist who produced 3-inch 4-band digital aerial imagery acquired along 6 levee systems covering 443 square miles within the District that supported emergency response for damage assessment following Hurricane Ida. Scope**:** This New Orleans District task order was for the acquisition and processing of digital aerial imagery and lidar elevation data along 6 levee systems covering 443 square miles that supported emergency response for damage assessment following Hurricane Ida. Woolpert deployed four aircraft to collect the airborne data. Deliverables included digital orthos and digital surface/terrain models. Cost: $591,529
03/2021 - 10/2022	**Lidar and Imagery | Florida Division of Emergency Management.** Imagery Specialist who produced high resolution 7 cm orthoimagery for back-to-back days in support of change detection at the Piney Point reservoir leak location. Brandon was responsible for resource planning and scheduling the project phase, as well as the processing, analysis, and QA/QC of the orthoimagery data for delivery to the client. Scope**:** Woolpert mobilized fixed wing aerial acquisition assets and completed the first day's data collection within 8 hours of receipt of the emergency request. Woolpert processed the lidar and imagery data and provided the "day one" collected deliverables to FDEM via Woolpert's FTP site within 48 hours of data collection. Cost**:** $29,500
10/2022 – 12/2023	**Aerial Lidar, Imagery and Planimetric Mapping, Fort Leavenworth | Kansas City, Kansas.** Imagery Specialist responsible for the processing of 4-band imagery to produce a 3-inch orthorectified imagery to meet ASPRS Class 1 accuracy standards. Scope**:** Woolpert was contracted to conduct an aerial imagery and lidar survey of the Fort Leavenworth installation to create an accurate map to support the real property database. Tasks involved acquiring 3-inch, 4-band orthoimagery and 4 ppsm lidar for the ±8.9 square mile area to support the installation's Real Property SDSFIE database update to include installation planning, design, research, and topographic mapping purposes. Cost: $146,161
09/2021 – 08/2022	**LA_CRMS Ortho QAQC 2021 D21, USGS Orthoimagery QA/QC. .** Imagery Specialist responsible for performing imagery QA/QC. Scope: This task order consisted of the quality assurance of 1-meter GSD, 4-band true color and near infrared digital orthoimagery acquired over ±20,116 square miles of the Louisiana coast. The task order also included the quality assurance of 12-inch GSD, 4-band true color and near infrared digital orthoimagery acquired as a part of the Coastwide Reference Monitoring System Program in Louisiana. This task order required a 100% visual inspection of the digital orthoimagery features that cannot be tested or evaluated by automated means. Cost: $ 136,692

Firm employed by	Woolpert, Inc.			
Name	Thomas Freeman, CP		Years of relevant experience with this employer	13
Title	Aerial Triangulation Specialist		Years of relevant experience with other employer(s)	22
Degree(s) / Years / Specialization				
Active registration number / state / expiration date			#1360 / National / 06/23/2028	
Year registered	2008	Discipline	ASPRS Certified Photogrammetrist	
Contract role(s) / brief description of responsibilities			Certified Photogrammetrist who leads a team of aerial triangulation, 3D stereo feature extraction, and data development experts in producing highly-accurate deliverables. Specialist at compiling features needed for a specific project and performs post processing of planimetric and topographic feature data using standard cartographic macros designed to ensure the compliance of data to project specifications.	

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
09/2021 – 02/2022	**2021 Post-Hurricane IDA, 3-inch Aerial Imagery and Lidar Collection | Louisiana**. Certified Photogrammetrist responsible for aerial triangulation of the imagery to tie to real world coordinates, digital orthophotography processing, and stereo compilation along six levee systems within the New Orleans District that supported emergency response for damage assessment following Hurricane Ida in Louisiana. Scope: Woolpert deployed four aircraft to acquire aerial imagery and lidar of a 575 square mile project area to support channel improvement and obtain measurements of the bare ground surface and top surface elevation data for USACE analysis. Cost: $591,529
08/2022 – 08/2023	**2023 Orthophotography, Lidar, and Planimetric Mapping | Lee County, Alabama.** Certified Photogrammetrist responsible for aerial triangulation of the imagery to tie the imagery to real world coordinates, digital orthophotography processing, and stereo compilation. Scope: The County Cooperative comprises Lee County, the Cities of Auburn and Opelika, and Auburn University. Woolpert acquired and processed aerial imagery and 4 ppsm topographic lidar to support the generation of 3-inch GSD, digital 4-band orthophotography and planimetric and topographic mapping encompassing the 654-square mile area of the County. Cost: $533,980
12/2024 / 02/2025	**Color IR Digital Orthophotography for the Beneficial Use Monitoring Program (BUMP) (FY25), Louisiana.** Certified Photogrammetrist responsible for aerial triangulation of the imagery to tie the imagery to real world coordinates, digital orthophotography processing, and stereo compilation. Scope: This USACE New Orleans District task order involved the acquisition and processing of color infrared aerial imagery and orthophotograph. Woolpert has collected and processed this data annually for over the last ten years. This project consisted of six locations totaling 1,043 square miles along the Louisiana Gulf Coast: Calcasieu, Louisiana (229.6 mi^2); Atchafalaya, Louisiana (109.9 mi^2); Houma, Louisiana (82.5 mi^2); Lafourche, Louisiana (50.2 mi^2); Barataria, Louisiana (64.6 mi^2); and Mississippi River, Louisiana (505.8 mi^2). Cost: $114,249
01/2021 – 04/2021	**St. Charles Parish Lidar Topographic Mapping | Louisiana.** Certified Photogrammetrist responsible for aerial triangulation of the imagery to tie the imagery to real world coordinates, digital orthophotography processing, and stereo compilation. Scope: Woolpert acquired parish-wide (331 square miles) of 3-inch GSD 4-band orthophotography. Cost: $120,660
02/2024 – 05/2024	**Aerial Orthorectified Photography and Lidar | Southwest Missouri. Certified** Photogrammetrist responsible for aerial triangulation of the imagery, digital orthophotography processing, and stereo compilation. Scope: Woolpert was contracted to collect and subsequently processed ortho-rectified photography and lidar for an area in Southwest Missouri. Tasks for this USACE Kansas City task order involved acquiring 3-inch, 4-band orthoimagery and 12 ppsm (QL 1) lidar for a 0.5-mile wide corridor from Stockton Lake to Springfield Fellows Lake and a one-mile wide corridor from Fellows Lake west. Cost: $267,420
08/2021 – 06/2023	**CIP Extraction/Update via Imagery | Mid-Atlantic Region Installations.** Certified Photogrammetrist responsible for aerial triangulation of the imagery to tie the imagery to real world coordinates, digital orthophotography processing, and stereo compilation for 19 installations in the Mid-Atlantic region. Scope**:** Woolpert provided aerial acquisition, control surveying, digital orthophotography, and the stereo collection of updated/new CIP planimetric features. All vector data was delivered in Esri geodatabases compliant with the SDSFIE NDM. Cost: $485,389

Firm employed by	Woolpert, Inc.			
Name	Zach Rahbek		Years of relevant experience with this employer	26
Title	Orthoimagery Specialist		Years of relevant experience with other employer(s)	3
Degree(s) / Years / Specialization			Associates / 1996 / CAD Technology Associates / 2006 / Computer Animation	
Active registration number / state / expiration date				
Year registered		Discipline		
Contract role(s) / brief description of responsibilities			Geospatial Technician with responsibilities that include all phases of orthophoto production, including project initialization, DEM generation, orthorectification, mosaic processing, QC and correction, administration of SmartView QC Tool for client review, tile indexing, SID generation, image header metadata, and other related deliverables.	

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
09/2018 – 09/2019	**LA MS Coastwide Ortho 2018 D18 QA/QC.** Imagery Specialist who performed quality assurance of 1-meter pixel, 4-band true color and near-infrared digital orthoimagery acquired over approximately 20,116 square miles of the Louisiana coast and 12-inch pixel, 4-band true color and near-infrared digital orthoimagery acquired over approximately 54 square miles of the Mississippi coastal barrier islands (MSCIP). Woolpert used our SmartView™ Connect, a web-based QA/QC tool, to host and review the digital orthoimagery provided for this task order. Cost**:** $136,897
09/2016 – 09/2017	**RI Coastal Ortho QA 2016 D16, USGS Imagery.** Imagery Specialist who performed quality assurance of digital orthophoto imagery data acquired by a prime contractor under contract with USGS. Scope:. Woolpert used our SmartViewTM Connect (SVC - http://maps.woolpert.com/), a web-based redline tool, to host the digital orthoimagery provided for this task order. Additionally, the provided ground control, aerial triangulation, and project reports and metadata were reviewed for completeness and compliancy. Cost: $9,618
09/2016 – 09/2017	**CA Central Valley Lidar 2016 D16, USGS Imagery.** Imagery Specialist for the production of 4-band orthophotos. Scope**:** NRCS Central Valley QL2 – This task order was for the planning, acquisition, processing, and derivative products of lidar data to be collected over California's San Joaquin Valley. The Central Valley portion of this project consisted of 1,399 square miles ofQL2 lidar data collected at 2 points per square meter (2 ppsm). Additionally, for an optional area, Sacramento California Delta QL1, Woolpert collected 1,312 square miles of lidar at 8 ppsm along with 4-band imagery at a 12-inch pixel resolution for the production of 30 cm digital orthophotos. For both the QL1 and QL2 lidar production phase of this project, ground check points uniformly dispersed over the Central Valley and Sacramento Delta AOI were distributed generally proportionally among the various vegetated land cover types in the project and were provided to USGS to perform their independent accuracy analysis. For the 0.3 meter (12-inch GSD) orthoimagery production, Woolpert acquired control points of higher accuracy to be used for aerotriangulation and initial georeferencing of the imagery. Woolpert provided lidar processing services including geometric calibration, ground filtering, DEM QAQC, hydrologic compilation and flattening, intensity imagery production, accuracy analysis, and reporting. The 4-band digital orthophotos were delivered as 16 bit red, green, blue, and near infrared bands at a 0.3 meter GSD in uncompressed GeoTIFF format, with associated TFW files. FGDC compliant metadata to the current standard was provided in .xml format. Cost: $931,581
08/2022 – 08/2023	**2023 Orthophotography, Lidar, and Planimetric Mapping | Lee County, Alabama.** Imagery Specialist for the production of 4-band orthophotos. Scope: The County Cooperative comprises Lee County, the Cities of Auburn and Opelika, and Auburn University. Woolpert acquired and processed aerial imagery and 4 ppsm topographic lidar to support the generation of 3-inch GSD, digital 4-band orthophotography and planimetric and topographic mapping encompassing the 654-square mile area of the County. Cost: $533,980
06/2017 – 06/2023	**Ohio Statewide Imagery Program (OSIP) 3 | Ohio.** Imagery Specialist for the production of 3-band and 4-band orthophotos. Scope: The Ohio Statewide Imagery Program 3 is a contract issued by the State of Ohio for the acquisition of professional geospatial services such as orthoimagery, lidar, oblique imagery, parcel conversion, and remote sensing analysis. The scope of this contract includes the entire geographic area of the state of Ohio (41,276 square miles) and immediately adjacent territory. Cost: $1,787,244

Firm employed by	Chustz Surveying, LLC			
Name	Craig Villemarette, TCS		Years of relevant experience with this employer	25
Title	Field and Traffic Control Supervisor		Years of relevant experience with other employer(s)	4
Degree(s) / Years / Specialization				
Active registration number / state / expiration date				
Year registered		Discipline		
Contract role(s) / brief description of responsibilities			Surveyor who coordinates and manages field data collection and field safety. Traffic Control Supervisor.	

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
05/2023 – 02/2025	**LA 44: Roundabouts @ I-10, LADOTD, H.015569.5.** Field and Traffic Control Supervisor responsible for field data collection, survey crew management and adherence to safety protocols during collection activities. Scope: This LADOTD task order consisted of performing topographic and ground control surveys utilizing mobile lidar, uncrewed aerial lidar, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included a drainage map and Bentley InRoads DGN, DTM, and ALG files. Cost: $212,000
02/2024 – 07/2024	**US 71: UPRR Overpass CLR Adjustment, LADOTD, H.015119.5.** Field and Traffic Control Supervisor responsible for field data collection, survey crew management and adherence to safety protocols during collection activities. Scope: This task order consisted of performing a topographic and ground control surveys utilizing mobile and stationary lidar, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included a Drainage Map and Bentley InRoads DGN, DTM, and ALG files. Cost: $148,000
03/2022 – 08/2022	**LA 20: LA 304 – LA 307, Lafourche Parish, LADOTD, H.014728.5** Field and Traffic Control Supervisor responsible for field data collection, survey crew management and adherence to safety protocols during collection activities. Scope: This task order consisted of performing a topographic and ground control surveys, uncrewed single beam hydrographic, uncrewed aerial lidar and photogrammetry, conventional, RTK, and GPS/GNSS surveys to meet LA DOTD specifications. Deliverables included a Drainage Map and Bentley InRoads DGN, DTM, and ALG files. Cost**:** $204,000
11/2021 – 02/2022	**LA 73 Bayou Manchac Bridge, Ascension and East Baton Rouge Parishes.** Field and Traffic Control Supervisor responsible for field data collection, survey crew management and adherence to safety protocols during collection activities. Scope: This task order consisted of performing a topographic and ground control surveys utilizing mobile lidar, uncrewed aerial lidar, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: $101,000
03/2022 – 08/2022	**LA 20: LA 304 – LA 307, Lafourche Parish, LADOTD, H.014728.5.** Field and Traffic Control Supervisor responsible for field data collection, survey crew management and adherence to safety protocols during collection activities. Scope: This task order consisted of performing a topographic and ground control surveys, uncrewed single beam hydrographic, uncrewed aerial lidar and photogrammetry, conventional, RTK, and GPS/GNSS surveys to meet LA DOTD specifications. Deliverables included a Drainage Map and Bentley InRoads DGN, DTM, and ALG files. Cost**:** $204,000
07/2021 – 10/2021	**LA 29 Bayou Cocodrie Bridge Scour Repair, Ville Platte, LADOTD, H.014633.5.** Field and Traffic Control Supervisor responsible for field data collection, survey crew management and adherence to safety protocols during collection activities. Scope: This task order consisted of performing topographic and hydrographic surveys utilizing conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included MicroStation InRoads DGN, DTM, and ALG files. Cost: $75,000
12/2024 – 01/2025	**LA 1206: Creek Bridge, Rapides Parish, LADOTD, H.016313.5.** Field and Traffic Control Supervisor responsible for field data collection, survey crew management and adherence to safety protocols during collection activities. Scope: This task order consisted of performing a topographic and control surveys utilizing conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. **Cost:** $53,000

Firm employed by	Chustz Surveying, LLC			
Name	Lonnie Dupont, CST, TCT		Years of relevant experience with this employer	25
Title	Party Chief / Traffic Control Technician		Years of relevant experience with other employer(s)	4
Degree(s) / Years / Specialization				
Active registration number / state / expiration date				
Year registered		Discipline		
Contract role(s) / brief description of responsibilities			Conducts field surveys. NSPS Certified Survey Technician #0214-4782. Traffic Control Technician.	

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
05/2023 – 02/2025	**LA 44: Roundabouts @ I-10, LADOTD, H.015569.5.** Party Chief who performed field topographic mapping survey, crew and equipment management, and quality-controlled data for this roadway improvement project. Scope: This LADOTD task order consisted of performing topographic and ground control surveys utilizing mobile lidar, uncrewed aerial lidar, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included a drainage map and Bentley InRoads DGN, DTM, and ALG files. Cost: $212,000
02/2024 – 07/2024	**US 71: UPRR Overpass CLR Adjustment, LADOTD, H.015119.5.** Party Chief who performed field topographic mapping survey, crew and equipment management, and quality-controlled data for this roadway improvement project. Scope: This task order consisted of performing a topographic and ground control surveys utilizing mobile and stationary lidar, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included a Drainage Map and Bentley InRoads DGN, DTM, and ALG files. Cost: $148,000
02/2022 – 12/2023	**West Baton Rouge Court St. Sidewalks, West Baton Rouge Parish.** Party Chief who performed field topographic mapping survey, crew and equipment management, and quality-controlled data for this roadway improvement project. Scope: This task order consisted of performing topographic and ground control surveys utilizing mobile lidar, uncrewed aerial lidar, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: $115,000
03/2022 – 08/2022	**LA 20: LA 304 – LA 307, Lafourche Parish, LADOTD, H.014728.5.** Party Chief who performed field topographic mapping survey, crew and equipment management, and quality-controlled data for this roadway improvement project. Scope: This task order consisted of performing a topographic and ground control surveys, uncrewed single beam hydrographic, uncrewed aerial lidar and photogrammetry, conventional, RTK, and GPS/GNSS surveys to meet LA DOTD specifications. Deliverables included a Drainage Map and Bentley InRoads DGN, DTM, and ALG files. Cost**:** $204,000
11/2021 – 02/2022	**LA 73 Bayou Manchac Bridge, Ascension and East Baton Rouge Parishes.** Party Chief who performed field topographic mapping survey, crew and equipment management, and quality-controlled data for this roadway improvement project. Scope: This task order consisted of performing a topographic and ground control surveys utilizing mobile lidar, uncrewed aerial lidar, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: $101,000
11/2023 – Current	**LA 22 @ 1085 Roundabout, St. Tammany Parish, LADOTD, H.013872.5.** Party Chief who performed field topographic mapping survey, crew and equipment management, and quality-controlled data for this roadway improvement project. Scope: This task order consisted of performing property surveys, right-of-way surveys, research, title take-off, and acquisition of parcels utilizing conventional survey methods to meet LA DOTD specifications. Deliverables included MicroStation DGN files, PDF maps, and title reports. **Cost:** $31,000
12/2023 – Current	**IMP@LA 13 & LA 100 & I-10 Acc. Rd (Crowley), Acadia Parish, LADOTD, H.011829.5.** Party Chief who performed field topographic mapping survey, crew and equipment management, and quality-controlled data for this roadway improvement project. Scope: This task order consisted of performing property surveys, right-of-way surveys, research, title take-off, and acquisition of parcels utilizing conventional survey methods to meet LA DOTD specifications. Deliverables included MicroStation DGN files, PDF maps, and title reports. Cost**:** $36,000
06/2023 – 04/2025	**LA HWY 22 Gapping Project ROW Maps, Ascension Parish.** Party Chief who performed field topographic mapping survey, crew and equipment management, and quality-controlled data for this roadway improvement project. Scope: This task order consisted of performing topographic surveys, property surveys, right-of-way surveys, research, title take-off, and acquisition of parcels utilizing conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included MicroStation InRoads DGN, DTM, and ALG files, PDF maps, and title reports. **Cost**: $200,000

Firm employed by Chustz Surveying, LLC			
Name	Eric Gardiner, LSI	Years of relevant experience with this employer	8
Title	Survey Technician	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization		Bachelor of Science in Agricultural Engineering Technology and Business / 2018 / Surveying and Geomatics	
Active registration number / state / expiration date		LSI #741 / Louisiana / 03/31/2027	
Year registered	2022	Discipline	Surveying
Contract role(s) / brief description of responsibilities		Land Surveyor Intern registered in the state of Louisiana. Responsibilities include conducting title research, creating legal descriptions, and performing MicroStation mapping. Also processes collected lidar data.	

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
05/2023 – 02/2025	**LA 44: Roundabouts @ I-10, LADOTD, H.015569.5.** Survey Technician who conducted title research, created legal descriptions, and performed final mapping for this task order consisting of property surveys, right-of-way surveys, research, title take-off, and acquisition of parcels utilizing conventional survey methods to meet LA DOTD specifications. Scope: This LADOTD task order consisted of performing topographic and ground control surveys utilizing mobile lidar, uncrewed aerial lidar, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included a drainage map and Bentley InRoads DGN, DTM, and ALG files. Cost: $212,000
02/2024 – 07/2024	**US 71: UPRR Overpass CLR Adjustment, LADOTD, H.015119.5.** Survey Technician who performed lidar data processing and mapping. Scope: This task order consisted of performing a topographic and ground control surveys utilizing mobile and stationary lidar, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included a Drainage Map and Bentley InRoads DGN, DTM, and ALG files. Cost: $148,000
03/2022 – 08/2022	**LA 3187: Creek Bridge, Evangeline Parish, LADOTD, H.016320.5.** Survey Technician who performed final mapping consisting of topographic and control surveys using conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Scope: This task order consisted of performing a topographic and control surveys using conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: $53,000
02/2022 – 12/2023	**West Baton Rouge Court St. Sidewalks, West Baton Rouge Parish.** Survey Technician who conducted title research, created legal descriptions, and performed final mapping. He also performed lidar data processing. Scope: This task order consisted of performing topographic and ground control surveys utilizing mobile lidar, uncrewed aerial lidar, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: $115,000
03/2022 – 08/2022	**LA 20: LA 304 – LA 307, Lafourche Parish, LADOTD, H.014728.5.** Survey Technician who performed lidar data processing and mapping. Scope: This task order consisted of performing a topographic and ground control surveys, uncrewed single beam hydrographic, uncrewed aerial lidar and photogrammetry, conventional, RTK, and GPS/GNSS surveys to meet LA DOTD specifications. Deliverables included a Drainage Map and Bentley InRoads DGN, DTM, and ALG files. Cost**:** $204,000
02/2022 – 12/2023	**West Baton Rouge Court St. Sidewalks, West Baton Rouge Parish.** Survey Technician who conducted title research, created legal descriptions, and performed final mapping. He also performed lidar data processing. Scope: This task order consisted of performing topographic surveys, property surveys, right-of-way surveys, and title research, utilizing mobile lidar, uncrewed aerial lidar, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included MicroStation InRoads DGN, DTM, and ALG files. Cost: $115,000
06/2023 – 04/2025	**LA HWY 22 Gapping Project ROW Maps, Ascension Parish.** Survey Technician who conducted title research, created legal descriptions, and performed final mapping. Scope: This task order consisted of performing topographic surveys, property surveys, right-of-way surveys, research, title take-off, and acquisition of parcels utilizing conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included MicroStation InRoads DGN, DTM, and ALG files, PDF maps, and title reports. **Cost**: $200,000

Firm employed by	Chustz Surveying, LLC		
Name	Claude Blake Conner, CST, TCT	Years of relevant experience with this employer	12
Title	Party Chief / Traffic Control Technician	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization			
Active registration number / state / expiration date			
Year registered		Discipline	
Contract role(s) / brief description of responsibilities	Conducts field surveys. NSPS Certified Survey Technician #0325-9002. Traffic Control Technician.		

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
05/2023 – 02/2025	**LA 44: Roundabouts @ I-10, LADOTD, H.015569.5.** Party Chief who performed field topographic mapping survey, crew and equipment management, and quality-controlled data for this roadway improvement project. Scope: This LADOTD task order consisted of performing topographic and ground control surveys utilizing mobile lidar, uncrewed aerial lidar, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included a drainage map and Bentley InRoads DGN, DTM, and ALG files. Cost: $212,000
02/2024 – 07/2024	**US 71: UPRR Overpass CLR Adjustment, LADOTD, H.015119.5.** Party Chief who performed field topographic mapping survey, crew and equipment management, and quality-controlled data for this roadway improvement project. Scope: This task order consisted of performing a topographic and ground control surveys utilizing mobile and stationary lidar, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included a Drainage Map and Bentley InRoads DGN, DTM, and ALG files. Cost: $148,000
05/2023 / 12/2023	**LA 44: Pelican Point Roundabout & Widen, LADOTD, H.015568.5.** Party Chief who performed field topographic mapping survey, crew and equipment management, and quality-controlled data for this roadway improvement project. Scope: This task order consisted of performing a topographic and ground control surveys utilizing mobile lidar, uncrewed aerial lidar, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included a Drainage Map and Bentley InRoads DGN, DTM, and ALG files. Cost: $120K
02/2022 – 12/2023	**West Baton Rouge Court St. Sidewalks, West Baton Rouge Parish.** Party Chief who performed field topographic mapping survey, crew and equipment management, and quality-controlled data for this roadway improvement project. Scope: This task order consisted of performing topographic and ground control surveys utilizing mobile lidar, uncrewed aerial lidar, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: $115,000
03/2022 – 08/2022	**LA 20: LA 304 – LA 307, Lafourche Parish, LADOTD, H.014728.5.** Party Chief who performed field topographic mapping survey, crew and equipment management, and quality-controlled data for this roadway improvement project. Scope: This task order consisted of performing a topographic and ground control surveys, uncrewed single beam hydrographic, uncrewed aerial lidar and photogrammetry, conventional, RTK, and GPS/GNSS surveys to meet LA DOTD specifications. Deliverables included a Drainage Map and Bentley InRoads DGN, DTM, and ALG files. Cost**:** $204,000
11/2021 – 02/2022	**LA 73 Bayou Manchac Bridge, Ascension and East Baton Rouge Parishes.** Party Chief who performed field topographic mapping survey, crew and equipment management, and quality-controlled data for this roadway improvement project. Scope: This task order consisted of performing a topographic and ground control surveys utilizing mobile lidar, uncrewed aerial lidar, conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included Bentley InRoads DGN, DTM, and ALG files. Cost: $101,000
12/2023 – Current	**IMP@LA 13 & LA 100 & I-10 Acc. Rd (Crowley), Acadia Parish, LADOTD, H.011829.5.** Party Chief who performed field topographic mapping survey, crew and equipment management, and quality-controlled data for this roadway improvement project. Scope: This task order consisted of performing property surveys, right-of-way surveys, research, title take-off, and acquisition of parcels utilizing conventional survey methods to meet LA DOTD specifications. Deliverables included MicroStation DGN files, PDF maps, and title reports. Cost**:** $36,000
06/2023 – 04/2025	**LA HWY 22 Gapping Project ROW Maps, Ascension Parish.** Party Chief who performed field topographic mapping survey, crew and equipment management, and quality-controlled data for this roadway improvement project. Scope: This task order consisted of performing topographic surveys, property surveys, right-of-way surveys, research, title take-off, and acquisition of parcels utilizing conventional, RTK, and GPS/GNSS survey methods to meet LA DOTD specifications. Deliverables included MicroStation InRoads DGN, DTM, and ALG files, PDF maps, and title reports. **Cost**: $200,000

17. Firm Experience:

Firm name	Woolpert, Inc.		Discipline(s)*	Data Collection | Survey | Other (derivative product development)	
Project name	Ohio Statewide Imagery Program (OSIP 3)			Firm responsibility (prime or sub?)	Prime
Project number	0A1177	Owner's name	State of Ohio, Ohio Dept. of Administrative Services, Office of Information Technology (OIT)		
Project location	Entire State of Ohio		Owner's Project Manager	Donovan Powers, Executive Director/GIO	
Owner's address, phone, email	Rhodes Tower, 30 E Broad Street, 28th Floor, Columbus, OH 43215 | 614.265.6772 | donovan.powers@das.ohio.gov				
Services commenced by this firm (mm/yy)	01/2017	Total consultant contract cost ($1,000's)		$1,787 (base contract)	
Services completed by this firm (mm/yy)	06/2023	Cost of consultant services provided by this firm ($1,000's)		$1,787 (base contract)	

The Ohio Statewide Imagery Program (OSIP) is a contract issued by the State of Ohio for the acquisition of professional geospatial services such as orthoimagery, lidar, oblique imagery, parcel conversion, and remote sensing analysis. The scope of this contract included the entire geographic area of the state of Ohio (±41,276 square miles) and immediately adjacent territory. In April 2024, Woolpert was selected for the 4th iteration of the OSIP Program (OSIP 4). We were first awarded the OSIP 1 program in 2006, and have been working with the State and their stakeholders ever since. **The state of Ohio is ±41,276 square miles**.

The OSIP program acquires high-resolution imagery and develops elevation data to benefit geographic information system users at all levels of Ohio government. Accurate imagery and elevation data serve as the backbone for the development of the additional data sets used by government decision-makers and the public. This program produces 6-inch pixel resolution, color digital orthoimagery, and a consistent digital elevation model generated from lidar. The orthoimagery is used by numerous state agencies, including ODOT, ODNR, OEPA, EMA, and ODA, to improve spatial applications and services such as economic development and the management of properties, utilities, and the environment. Emergency response agencies will also use the imagery to improve performance, safety, and public health. In addition to the base orthoimagery, OSIP provides state agencies and local governments the opportunity to purchase additional, value-added services through a cooperative purchasing agreement with the state of Ohio. This includes higher-resolution 4-band imagery, aerial and mobile lidar, oblique aerial imagery, topographic mapping, land use/land cover.

2019-2023 Statewide 3DEP QL1 Lidar—State of Ohio. During Fall 2019, Woolpert initiated the acquisition of new 3DEP QL1 lidar covering the entire state of Ohio. Of Ohio's 88 counties, several elected to enhance the base QL1 point density from 8 ppsm to either 12, 20 or 30 ppsm. Approximately 15% of Ohio's counties elected to upgrade either the vertical accuracy (from QL1 to QL0) and/or the lidar point density (greater than 8 ppsm). This project supported the 3DEP mission, the Natural Resources Conservation Service (NRCS) high-resolution elevation enterprise program, the FEMA Risk Mapping, Assessment, and Planning (MAP) program, and the U.S. Forest Service (USFS) for several applications such as resource management and conservation planning, engineering design and design reviews, geologic hazard mitigation, hydrologic modeling, and flood risk management. Ohio Statewide Lidar Phase 1 (2019) involved the collection and processing of high resolution QL1 lidar data (8 ppsm) for 30 counties in Ohio (±12,809 square miles). Phase 2 (2020) involved the collection and processing of QL1 lidar data (8 ppsm) for 24 counties in Ohio (±12,143 square miles), and Phase 3 (2021) involved the collection and processing of QL1 lidar data (8 ppsm) for 28 counties in Ohio (±13,150 square miles).

Surveying. Woolpert supplemented existing horizontal and vertical ground control with new airborne GPS to support orthoimagery meeting the new American Positional Accuracy Standards for Digital Geospatial Data (Edition 1, Version 1.0 – November 2014). Accuracy was reported and tested as per the FGDC Geospatial Positioning Accuracy Standards, Part 3: National Standard for Spatial Data Accuracy (NSSDA) (1998). **Ohio's Public Land Surveys.** All of Ohio's Public Land Surveys were taken into account before, during, and after the actual ground surveys performed for the state program. In the case of the state of Ohio, all survey has been overseen by Woolpert Ohio Professional Surveyors.

Aerial Photography. During the 2017 through 2020 leaf-off condition spring acquisition seasons, Woolpert acquired new 8-bit, 4-band color digital aerial imagery covering the entire 41,276-square-mile project area using digital aerial sensors. The imagery was collected at a flying height capable of producing statewide 6-inch pixel resolution orthoimagery.

Digital Orthoimagery. The ortho-rectified imagery was produced in a tiling format with a modular layout of 5,000 feet by 5,000 feet for 6-inch (statewide) defined by even NAD83 Ohio State Plane Coordinate grid lines. Woolpert's production staff clipped the ortho tiles to eliminate overlap between adjacent tiles and used an interactive mosaicking process for tone balancing and image mosaicking. The digital orthoimagery was produced and delivered in GeoTIFF format with a .tiff world file for geo-referencing. All tiled and mosaicked imagery met ASPRS positional accuracy standards (with a horizontal accuracy of approximately 2.4 feet). In addition to the base 6-inch orthoimagery, the state imagery program also consists of county and city buy-up equating to 1-, 1.5-, and 3.0-inch orthoimagery, feature extraction, and GIS base mapping.

Photogrammetry. Photogrammetric processes have been followed and implemented with the oversight of an ASPRS-approved certified photogrammetrist throughout all base mapping and GIS deliverables developed for the state (and counties/cities for mapping buy-ups).

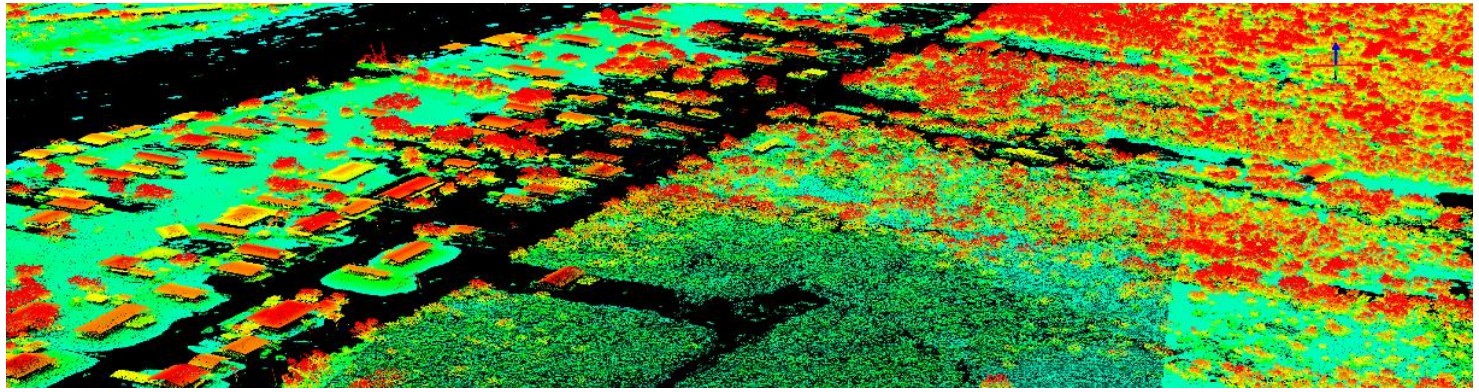
Key Staff: Brian Stevens, CP, GISP | John Gerhard, CP | Michael Meiser, CMS-Lidar, PMP | Brian Foster, CP, PMP | Ryan Comer | Zach Rahbek | Ben Beckman

Firm name	Woolpert, Inc.		Discipline(s)*	Data Collection	
Project name	Post-Hurricane Ida, 3-inch Aerial Imagery and Lidar Collection			Firm responsibility (prime or sub?)	Prime
Project number	Contract: W912P818D0002 Task Order: W912P821F0174	Owner's name	U.S. Army Corps of Engineers, New Orleans District		
Project location	Louisiana		Owner's Project Manager	Keith Marino, COR, CEMVN-EDD	
Owner's address, phone, email	7400 Leake Ave, New Orleans, LA 70118, 504.862.1358 | keith.j.marino@usace.army.mil				
Services commenced by this firm (mm/yy)	09/2021			$591	
Services completed by this firm (mm/yy)	02/2022	Cost of consultant services provided by this firm ($1,000's)		$591	

Woolpert acquired and processed 3-inch, 4-band digital aerial imagery and lidar elevation data that supported emergency response for damage assessment following Hurricane Ida in Louisiana. This project included the collection of data along six levee systems within the New Orleans District:

- New Orleans to Venice Levee System (NOV and NOV NF).
- Westbank and Vicinity Levee System (WBV).
- Larose to Golden Meadow Levee System (LGM).
- Morganza to the Gulf Levee System (LGM).
- Lake Pontchartrain and Vicinity Levees (LPV).
- Lafitte and Braithwaite Levees.

Immediately upon receipt of the task order, Woolpert deployed four aircraft to the project location to begin collection of the airborne data, as conditions allowed. Two aircraft were dedicated to the collection of aerial imagery and two aircraft were dedicated to the collection of the lidar. Airport closures and a lack of accommodations in the immediate vicinity of the project required these aircraft to be based out of airports in Lake Charles, Louisiana; Pensacola, Florida; and Picayune, Mississippi. Due to inclement weather following the hurricane, collection of all data took 11 days to complete.



Lidar used for damage assessment (above) following Hurricane Ida (top right)

Data processing was completed and delivered as the data was collected with initial deliveries beginning one-week post collection. Final delivery was made by the end of November 2021 with fully edited 4-band orthoimagery, classified lidar point clouds, and digital elevation models in both NAVD88 (2004.65) and NAVD88 (2009.55) vertical datums. Vertical accuracy of the lidar DEMs was assessed using existing control monumentation on the levee systems as well as control used for the production of recently completed orthophotography and lidar projects along the Mississippi River.

All deliveries for this project were made using the DoD Secure Access File Exchange (SAFE) website. In addition to the orthoimagery and lidar LAS and DEM deliveries, a series of reports and vector files were also generated and delivered, including Esri ArcGIS geodatabase containing flight lines, exposures, swath extents of the lidar, and index; a project report; flight reports; data processing report; lidar calibration report; lidar and ortho accuracy reports; and FGDC-compliant metadata.

Key Staff: Christopher Jaeger, CP, GISP | Tim Summey| Mike Venegas, CP, Thomas Freeman, CP | Ben Beckman | Zachary Hearon | Daniel Kuxhausen | Brandon McKenzie | Nick Wilson

Firm name	Woolpert, Inc.		Discipline(s)*	Data Collection | Survey	
Project name	2022 Shoreline Mapping Project, LA2208-TB-C | Louisiana			Firm responsibility (prime or sub?)	Prime
Project number	Contract: 1305M220DNCNL0065 Task Order: 1305M222FNCNL0367	Owner's name	NOAA, National Ocean Service, National Geodetic Survey, Remote Sensing Division (NGS)		
Project location	Louisiana		Owner's Project Manager	Mike Aslaksen, Jr., Chief, Remote Sensing Division, NOAA NGS	
Owner's address, phone, email	1315 East-West Hwy, Silver Spring, MD 20910 | 301.801.9024 | mike.aslaksen@noaa.gov				
Services commenced by this firm (mm/yy)	08/2022		Total consultant contract cost ($1,000's)	$516	
Services completed by this firm (mm/yy)	09/2023		Cost of consultant services provided by this firm ($1,000's)	$516	

Woolpert acquired and processed topographic/bathymetric lidar and imagery covering approximately 272 square miles over the coastal Louisiana as part of supplemental funding for Hurricane Ida. This data will be used for the updating of the national shoreline and to support other mapping, charting, geodetic, and coastal uses.

Topographic/Bathymetric Lidar Acquisition and Processing. Woolpert collected lidar in fall 2022 to meet a ≥ 2.0 points per square meter (ppsm) density and 1.5 secchi depth in accordance with the QL2B as specified in the National Coastal Mapping Strategy 1.0 Document. The bathymetric lidar data was collected to support 100% coverage to meet IHO Order 1b specifications. The topographic lidar data was collected to meet a vertical accuracy of 10-cm RMSE. Woolpert deployed a Leica Chiroptera 4X (CH4X) lidar system installed in a Cessna 406 aircraft to acquire both topographic/bathymetric lidar and imagery simultaneously using the RCD30 camera included in the CH4X. Imagery (10-cm) was acquired simultaneously with the lidar data during all flights. Due to many areas of the project being inaccessible for ground control survey collection, a QC flight line was acquired over designated control points established to ensure all flights were tied into the control network for accuracy.

Ground Control. A total of 65 ground survey points were collected in the project area and dispersed evenly across accessible areas; 35 were used for calibration points, 20 for non-vegetated vertical accuracy (NVA) and 10 for vegetated-vertical accuracy (VVA) ground survey.

Deliverables. Project deliverables included sensor and camera calibration reports, data coverage TIFFs to acquisition coverage review and acceptance, classified LAS point cloud data, topographic/bathymetric seamless lidar 1-meter Digital Elevation Model (DEM), lidar trajectory files, Total Propagated Uncertainty (TPU) rasters calculated using cBLUE software, normalized intensity rasters, 10-cm ortho-mosaic imagery, product level metadata, and acquisition summary, airborne positioning and orientation, and quality assurance reports.

Project Area Along the Coastal Louisiana Shoreline

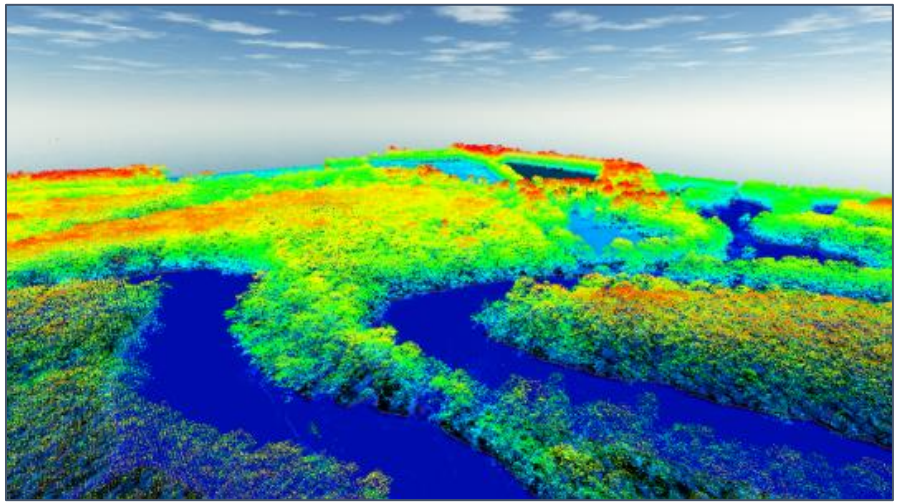
Key Staff: John Gerhard, CP | Michael Venegas, CP | Michael Meiser, CMS-Lidar, PMP | Ben Beckman | Nick Wilson

Firm name	Woolpert, Inc.	Discipline(s)*	Data Collection | Survey
Project name	Bayou Nezpique Lidar Survey	Firm responsibility (prime or sub?)	Prime
Project number	Contract Number: G17PC00007 Task Order Number: 40G1018F0024	Owner's name	United States Geological Survey (USGS)
Project location	Louisiana	Owner's Project Manager	Walter Kloth
Owner's address, phone, email	U.S. Geological Survey, NGTOC, P.O. Box 25046, MS 510, Denver, CO 80225-0046 | 720.201.4954 | wkloth@usgs.gov		
Services commenced by this firm (mm/yy)	12/2017	Total consultant contract cost ($1,000's)	$980
Services completed by this firm (mm/yy)	01/2020	Cost of consultant services provided by this firm ($1,000's)	$980

The scope of this task order involved performing a lidar survey over an area of interest in south-central Louisiana which covered a total of approximately 3,772 square miles and included the parishes of Acadia, Jefferson Davis, Allen, Evangeline and portions of St. Landry, Lafayette, Vermillion, Rapides, and Calcasieu. This high-resolution lidar data supports NRCS business needs for high-resolution topographic elevation data, the National Spatial Data Infrastructure (NSDI), and advances USGS efforts related to the 3D Elevation Program and The National Map.

This project was planned, acquired, and processed to meet USGS Quality Level 1 standards (minimum 8 points per square meter (ppsm)). The lidar data was acquired using a Leica high-density lidar sensor and supported point density and vertical accuracy requirements. A ground control survey was conducted to survey multiple control and check points used to control the lidar accuracy in accordance with USGS guidance for survey collection. Check points were used to independently assess the accuracy of the lidar DEM in various land cover categories. Lidar classification was performed with point cloud formatting in accordance with the USGS Lidar Base Specification. Hydro-flattened breaklines were collected with water bodies being at or just below the terrain and streams flowing perpendicular bank to bank. A total of 38,454 water bodies were hydro-flattened. The following deliverables were made:

- Classified Lidar
- Survey Control
- Survey Check points
- Hydro-flattened Breaklines
- Project Reports
- USGS Compliant Metadata



Key Staff: Christopher Jaeger, CP, GISP | Tim Summey | Mike Venegas, CP | Ben Beckman

Firm name	Woolpert, Inc.		Discipline(s)*	Data Collection | Survey | | Other (planimetric mapping)	
Project name	2023 Orthophotography, Lidar, and Planimetric Mapping			Firm responsibility (prime or sub?)	Prime
Project number		Owner's name	Chris Graff, Cooperative Representative		
Project location	Lee County, Alabama		Owner's Project Manager		
Owner's address, phone, email	144 Tichenor Avenue, Suite 4, Auburn, AL 36830 | 334.501.7207 | cgraff@auburnalabama.org				
Services commenced by this firm (mm/yy)	08/2022	Total consultant contract cost ($1,000's)	$533		
Services completed by this firm (mm/yy)	08/2023	Cost of consultant services provided by this firm ($1,000's)	$533		

The County Cooperative comprises Lee County, the Cities of Auburn and Opelika, and Auburn University. Woolpert acquired and processed aerial imagery and topographic lidar to support the generation of 3-inch GSD, digital 4-band orthophotography and planimetric and topographic mapping encompassing the 654-square mile area of the County.

Ground Control Surveys. Woolpert used Trimble GPS rovers connected to the ALDOT Real-Time Network (RTN) to collect 77 photo control/check points and 93 lidar control/check points. Forty-six photo control points and 31 photo check points were surveyed for this project based on the imagery flight plans. Woolpert also surveyed 13 lidar control points, 45 NVA check points, and 35 VVA check points for this project, based on USGS guidelines for a project the size of Lee County.

Aerial Imagery Data Acquisition. Using a Leica Digital Mapping Camera III (DMC 3) photogrammetric aerial imagery system, 4-band imagery was acquired to support the production of 3-inch digital orthophotography and the stereo compilation of 1"=100' scale planimetric data. For quality assurance purposes, the lidar data was processed immediately after the acquisition to verify the coverage had appropriate density, distribution, and no unacceptable data voids. The bare-earth lidar points underwent classification and QA/QC steps to verify that artifacts have been removed.

Aerial Lidar Data Acquisition and Processing. Woolpert used a Leica TerrainMapper to acquire USGS QL2 (4 ppsm) topographic lidar to support digital terrain modeling and 1-foot contour generation.

Woolpert mapping specialists performed hydrologic flattening of the lidar data. The point cloud data was classified according to the USGS lidar Base Specification classification standards, and a bare-earth surface (raster DEM) was created and delivered for each delivery tile. The first return DSM with no hydrologic flattening was delivered for each tile. One-foot contours were created meeting ASPRS accuracy standards. All lidar data deliverables were validated for accuracy using independent NVA and VVA surveyed check points throughout the project AOI.

Digital Orthophotography. 4-band, 3-inch GSD digital orthophotography covering the Cooperative's existing region-wide tile index. The imagery was processed immediately after the aerial imagery was acquired. The ground control and airborne GPS data surveyed was used to develop a fully analytical aerial triangulation adjustment and orthorectified the imagery into 4-band, RGBI TIF/TFW tile files and MrSID (8-bit) compressed mosaics.

Planimetric Mapping. Utilizing stereo imagery, planimetric features were digitized and compiled for structures (e.g., buildings, tanks/silos, mobile homes, swimming pools), edges and centerlines of paved and unpaved roadways, paved parking lots, sidewalks, and hydrography. The mapping was delivered in DWG file format. Of note: Three areas within the county were identified where building lean had been an issue with previous imagery projects. Woolpert increased the forward and side overlaps over these areas to reduce the amount of lean present in the taller structures.

Topography and Planimetric Features and Coverage Area

Metadata. Product-level FGDC compliant XML metadata and project level reports describing imagery, lidar, and GIS/CAD planimetric feature extraction production processing workflows and to include horizontal and vertical accuracy assessments were submitted as deliverables.

Key Staff: Christopher Jaeger, CP, GISP | Tim Summey | Ben Beckman | Thomas Freeman, CP | Kayla Keller | Zach Rahbek

Firm name	Chustz Surveying, LLC		Discipline(s)*	Survey	
Project name	LA 44: Roundabouts at I-10			Firm responsibility (prime or sub?)	Prime
Project number	H.015569.5		Owner's name	LA DOTD	
Project location	Ascension Parish, LA		Owner's Project Manager	Stan Ard	
Owner's address, phone, email	1201 Capitol Access Rd, Baton Rouge, LA, 70802| 225.379.1101 | Stanley.Ard@la.gov				
Services commenced by this firm (mm/yy)		05/2023	Total consultant contract cost ($1,000's)	$212	
Services completed by this firm (mm/yy)		02/2025	Cost of consultant services provided by this firm ($1,000's)	$212	

Chustz Surveying was tasked to conduct a comprehensive survey of LA 44 at the I-10 intersection for roundabout installations. The survey extended 1500 feet north and south of I-10 and to the end of the entrance and exit ramps along the interstate. All topographic features and utilities, both above and underground were collected.

For this project, Chustz deployed multiple crews to the site to establish site control and ground control for lidar in addition to the provided control points utilizing RTK with Trimble GPS/GNSS receivers and establish the centerline. Once the control and centerline were established, the crew began collecting the required topographic, utility and drainage features using RTK survey methods. Additional drainage features were collected within 300 ft of the project limits to facilitate the required Drainage Map. To collect the remaining data on the interstate and HWY 44, Chustz utilized both our Riegl VUX-1uav Mobile lidar system mounted to our truck and our Riegl miniVUX-1UAV from our BFD aerial surveying platform. This allowed us to collect the data in areas that would otherwise be dangerous or require a stoppage of interstate traffic.

The data was transferred to the office on a regular basis where it was processed utilizing Trimble Business Center (TBC) and verified against the provided control data. The lidar data was processed using the Riegl software and features were extracted using TBC. The datasets were then merged in Trimble Terramodel and mapped in Bentley InRoads adhering to the DOTD Software and Deliverable Standards for Electronic Plans and DOTD CAD Standards. Final deliverables included DGN, DTM, ALG, and ASCII files along with utility forms and a survey report. All work performed adhered to our QA/QC plan and was in accordance with the LA DOTD Location and Survey Manual.

Key Staff: James Chustz, Jr., PLS | Evan Chiasson, PLS | Eric Gardiner, LSI | Craig Villemarette, TCS | Lonnie Dupont, CST, TCT | Blake Conner, CST, TCT

Firm name	Chustz Surveying, LLC	Discipline(s)*	Survey		
Project name	US 71: UPRR Overpass Clr Adj		Firm responsibility (prime or sub?)	Prime	
Project number	H.0.15119.5	Owner's name	LA DOTD		
Project location	Rapides Parish, LA	Owner's Project Manager	Stan Ard		
Owner's address, phone, email	1201 Capitol Access Rd, Baton Rouge, LA, 70802| 225.379.1101 | Stanley.Ard@la.gov				
Services commenced by this firm (mm/yy)	02/2024	Total consultant contract cost ($1,000's)	$148		
Services completed by this firm (mm/yy)	07/2024	Cost of consultant services provided by this firm ($1,000's)	$148		

Chustz Surveying conducted a topographic survey of the US 71 bridge over the Union Pacific railroad in Rapides Parish. The survey consisted of collecting all topographic features and utilities, both above and underground along 3,000 feet of US 71 and 2,000 feet of railroad from apparent right of way to apparent right of way. Additional drainage features were located within 300 feet of the survey limits for the required Drainage Map.

To collect the required data, Chustz first deployed a crew to the site to establish site control and ground control for lidar with static GPS/GNSS and establish the centerline all using Trimble receivers. This project also required us to collect the low chord of the overpass structure, approximately 25 feet above the ground and under the structure. This effort required the use of our Trimble SX10 total station/terrestrial lidar scanner. Our crew was able to successfully set up under the structure and conduct numerous scans, capturing all girders, pilings, caps, abutments, and any other information needed to not only map the structure, but provide an accurate distance between the railroad tracks and the bottom of the overpass girders. To facilitate with data collection on US 71, we utilized our Riegl VUX-1uav Mobile lidar system mounted to our truck, safely obtaining the necessary data. The remaining topographic, utility, and drainage features were collected using RTK survey methods.

The terrestrial lidar, mobile lidar, and RTK data was all processed and adjusted to the static GPS/GNSS network. It was then mapped using Bentley InRoads adhering to the DOTD Software and Deliverable Standards for Electronic Plans and DOTD CAD Standards. Final deliverables included DGN, DTM, ALG, and ASCII files along with utility forms and a survey report. All survey work performed adhered to the firm's QA/QC plan and was in accordance with the LA DOTD Location and Survey Manual.

Key Staff: James Chustz, Jr., PLS | Evan Chiasson, PLS | Eric Gardiner, LSI | Craig Villemarette, TCS | Lonnie Dupont, CST, TCT | Blake Conner, CST, TCT

Firm name	Chustz Surveying, LLC	Discipline(s)*	Survey		
Project name	LA HWY 73 Bayou Manchac Bridge		Firm responsibility (prime or sub?)	Prime	
Project number	H.0.12563.5	Owner's name	LA DOTD		
Project location	Ascension Parish, LA	Owner's Project Manager	Stan Ard		
Owner's address, phone, email	1201 Capitol Access Rd, Baton Rouge, LA, 70802| 225.379.1101 | Stanley.Ard@la.gov				
Services commenced by this firm (mm/yy)	11/2021	Total consultant contract cost ($1,000's)	$101		
Services completed by this firm (mm/yy)	02/2022	Cost of consultant services provided by this firm ($1,000's)	$101		

Chustz Surveying conducted a bridge scour repair survey at Bayou Manchac. The survey along Bayou Manchac extended a minimum 175 feet upstream and 175 feet downstream from the faces of the bridge and extended a minimum 1150 feet south of the southern end of the bridge to 1675 feet north of the southern end of the bridge along HWY 73. A complete topographic survey including all utilities and all drainage features were surveyed. Bridge features surveyed included top of roadway deck elevations along centerline and right/left gutter lines, top of guard rail elevations, and centerline of bridge pier locations.

To accomplish this, Chustz deployed multiple crews to the site to begin the static GPS/GNSS survey utilizing Trimble GPS/GNSS receivers and establish the centerline. Once control was established, the crew began collecting the required topographic data using RTK and conventional survey methods with total stations.

Due to the narrow bridge and heavy traffic, Chustz had to collect the required bridge data using aerial lidar from our Reigl RI copter sUAS equipped with a Reigl VUX-1uav laser scanner. Additional terrestrial lidar was collected from our Trimble SX10 to determine bridge pile centerlines and any other required bridge features from below. Ground control points for the LiDAR were established utilizing RTK from the primary control. All data was processed utilizing Trimble Business Center where it was adjusted and constrained to the static GPS. The data was then mapped in Bentley InRoads and final deliverables included DGN, DTM, ALG, and ASCII files.

Key Staff: James Chustz, Jr., PLS | Evan Chiasson, PLS | Eric Gardiner, LSI | Craig Villemarette, TCS | Lonnie Dupont, CST, TCT | Blake Conner, CST, TCT

18. Approach and Methodology:

Woolpert, Inc. (Woolpert) is a professional architecture, engineering, and geospatial firm who employs more than 3,000 talented professionals serving clients globally from more than 75 offices on seven continents. Our certified photogrammetrists, certified CAT-A hydrographers and certified GISPs, registered land surveyors, and professional engineers with licensures in 50 states support our diverse, global client base that relies on our team for ground control survey field work, airborne remote sensing, and hydrographic data services. We provide end-to-end capability and capacity with our extensive array of owned/operated aircraft, airborne topographic/bathymetric lidar and imaging sensors, a fleet of hydrographic surveying vessels, remotely operated survey platforms, airborne and marine position and orientation systems, and survey equipment.

Chustz Surveying, LLC (CSI), located in New Roads, Louisiana, has been a key player in the surveying industry since its establishment in 1995. With registered land surveyors in Louisiana, together with Certified Survey Technicians, Traffic Control staff, Federal Aviation Administration (FAA)-certified remote pilots, and GIS analysts, they are well-equipped to meet the demands of the LA DOTD. CSI's specializes in conventional topographic ground control for aerial surveys, uncrewed aerial lidar and photogrammetry, GNSS, Static GPS/GNSS, C4G VRS, RTK, digital and conventional leveling, crewed and uncrewed automated hydrography with both single-beam and multibeam bathymetric systems with vessel mounted mobile lidar, vehicle mounted mobile laser scanning, as well as post-processing and mapping datasets from multiple sensors in Bentley CADD system, Bentley InRoads, and Bently OpenRoads in accordance with the LA DOTD Location and Survey Manual and utilizing the LA DOTD Software and Deliverable Standards for Electronic Plans and DOTD CAD Standards. Appointed by the Louisiana State Legislature, James "Jimmy" Chustz—our team's designated LA-licensed surveyor—is a member of the Louisiana Professional Engineering and Land Surveying (LAPELS) Board. This offers assurance to LADOTD that proper survey methodology with survey grade instrumentation will be used on this contract.

Surveying will be primary performed by our teaming partner, CSI. Upon receiving a DOTD task order, their team will conduct a thorough scope and site review then prepare a detailed plan before deploying to the project site. For surveying imagery control, data calibration, ground control, and vertical accuracy checkpoints, CSI will utilize RTK/VRS GPS with the use of cellular and/or radio modems for measuring the photogrammetric control stations and ground checkpoints. Rapid-static GPS surveying will be utilized for photogrammetric control stations and quality control checkpoints located in areas where radio link or cellular coverage does not exist.

CSI survey crews are well-versed in establishing and operating GPS base stations to support aerial data acquisition. Crews will follow best practices for logging and timing, ensuring positional integrity throughout the flight window, adhering to the specifications described in Chapter 4, Section 3 the DOTD Location and Survey Manual. All work will be conducted under the supervision of a Louisiana licensed Professional Land Surveyor in good standings with the Louisiana Professional Engineering and Land Surveying Board (LAPELS). Deliverables will include surveyor's certification reports consistent with the "Survey Point Delivery" of the most current USGS Lidar Base Specification or other approved reports.

Together, CSI and Woolpert offer extensive surveying capabilities, with CSI able to deploy eight 2- to 3-person crews equipped for property, topographic, GPS/GNSS, and hydrographic surveys using six robotic total stations, 29 GPS/GNSS receivers, 12 levels (including four digital), 13 trucks, eight Unmanned Aerial Systems (UAS) for lidar and imagery, three mobile lidar systems, and both crewed and uncrewed hydrographic vessels. Woolpert complements this with the capacity to field over 70 survey crews supported by more than 100 level instruments and total stations/data collectors, GPS/RTK base stations, rovers, and GNSS units. Their hydrographic survey fleet includes autonomous Z-boats and crewed survey vessels, while their scanning technology spans terrestrial systems, along with mobile systems.

Woolpert is very familiar with the various lidar industry standards including the **ASPRS Positional Accuracy Standards** for Digital Geospatial Data, the National Standard for Spatial Data Accuracy (NSSDA), the IHO Standards for Hydrographic Surveys (S-44 Edition 6.1.0), the National Coastal Mapping Strategy (NCMS) for Bathymetric Lidar (v1.0), and the current National Geospatial Program Lidar Base Specification 2025, Revision A" (LBS 2025, Revision A). To maintain that consistent methodologies are used on this contract, our team will follow project planning and execution and QA/QC procedures developed through Woolpert's certified ISO program in conjunction with the current LBS guidelines provided by the USGS.

For **aerial data acquisition**, Woolpert owns and operates a fleet of aircraft *(see Section 20)* configured with dual-sensor ports and equipped with an airborne kinematic global navigation satellite system (GNSS) to support topographic/bathymetric lidar, topographic lidar, and imagery data collection. All aircraft are operated under FAA regulations. Our team follows strict safety guidelines for the operation of all lidar systems, which are fully compliant and certified under the U.S. Department of Health and Human Services standard CDHR 1040.

Woolpert staff have been involved with combined topographic and bathymetric lidar efforts since 2001. Woolpert owns and operates two topographic/bathymetric lidar systems: the Chiroptera-5 (CH5) sensor (±1.7 secchi depth) bundled with the HawkEye-5 (HE5) sensor (±3.0 secchi depth). The sensors collect topographic lidar up to 500 kHz (12 ppsm) and

shallow bathymetric lidar at 200 kHz (5 ppsm). The HE5 includes an additional deep channel, collecting bathymetry at 40 kHz (1 ppsm). The sensor's full depth range meets IHO Order 1 horizontal and depth accuracy requirements. Woolpert has an in-depth understanding of topographic/bathymetric lidar data calibration, processing techniques, and the parameters used during processing such as the index of refraction, diffuse attenuation coefficient, surface, and channel selection.

Woolpert can provide topographic lidar capabilities with four Leica TerrainMapper sensors. The TerrainMapper sensor can collect lidar at flying heights between 1,000-feet and 18,000-feet. We provide the U.S. Geological Survey (USGS) lidar with Quality Level 0 (QL0) and Quilty Level 1 (QL1)data with at least 8 points per square meter while flying at heights up to 6,500-feet. This level of efficiency is ideal for large regional coastal mapping projects. In support of the USGS on the 3D Elevation Program (3DEP), Woolpert has acquired and processed more than 565,000 square miles of topographic lidar.

Woolpert routinely captures natural color and multispectral 4-band imagery. Our digital imagery sensors collect 4-band high-resolution images with 12-bit dynamic range in each multispectral band and enable 3D stereo viewing in all bands. Woolpert's digital imagery sensors, the Leica ADS100 and DMC-4H, are equipped with GPS and IMU technology as task order requirements and specifications dictate.

With our experienced staff and cutting-edge equipment, Woolpert can successfully perform UAS operations to support a wide variety of surveying, mapping, infrastructure, and design projects. Our UAS team supports missions with a wide variety of capabilities, including aerial photography and videography, mapping and photogrammetry, lidar, infrared, and thermal sensor imagery. Our team's systems-agnostic approach to providing commercial UAS services comprises of in-house airframes/sensors and a partnership program promoting the most suitable and cost-effective system to be leveraged as a solution. Our team's off-the-shelf capability is flown by more than 45 certified remote pilots who are trained and certified under a structured training program that requires FAA compliance and hands-on flight instruction.

Woolpert utilizes a combination of **commercial and proprietary software (e.g.,** TerraScan and/or LASTools) **to process, calibrate, and classify lidar data** to meet USGS lidar specifications. These tools facilitate the identification of tie points between overlapping swaths, allowing for the precise adjustment of the lidar point cloud data. Additionally, the integration of Global Navigation Satellite System (GNSS) data enhances the accuracy of the alignment process, contributing to the overall quality of the digital elevation model (DEM). The methodology for swath alignment involves meticulous attention to detail. Tie points are strategically identified in areas where swaths overlap, and adjustments are made to minimize any discrepancies in elevation or position. This rigorous adjustment process establishes that lidar point clouds from different swaths seamlessly blend into a cohesive dataset. Following processing, vertical accuracy testing is performed on the bare earth surface using independent lidar check points to determine the accuracy of the lidar point cloud. Utilizing the bare earth data and the lidar intensity imagery, hydrologic flattening of streams and water bodies is processed to create a hydrologically flattened DEM.

Woolpert commonly produces **additional lidar classifications**, expanded from the USGS Base Specification Classification standard. These often include Low, Medium, and High Vegetation (Classes 3, 4, and 5), Buildings (Class 6), and Road Surfaces (Class 11). With the introduction of Woolpert's high point-density lidar products, we are also able to classify more detailed features such as utility Towers/Poles (Class 15) and Wires (Class 14). Many of these additional lidar classifications are identified using a combination of planimetrically collected features and automated classification routines with the goal of 95% of the points accurately depicting their assigned class. Increased accuracy can be obtained through manual review, editing, and model retraining over time, again dependent on a client's individual requirements.

Our **hydro-flattening process is meticulously designed** to establish accurate representation and uniformity of water bodies in the generated lidar-derived Digital Elevation Models (DEMs). Hydro-flattening ensures consistent water body representation in DEMs using GIS tools such as Esri ArcGIS. Elevation thresholds, point density, and intensity values are utilized to delineate water features, which are smoothed to remove wave-induced undulations. Manual QC complements automated processes to ensure accuracy for water bodies over 2 acres and streams/rivers wider than 100 feet.

Our workflows are **designed to eliminate errors** through sensor calibration and rigorous QC checks, including hydro reclassification, drawing reviews, and vertical variance analysis. Product reviews involve geometry checks, DEM validation, and intensity imagery verification to meet USGS standards. If discrepancies arise, re-flights may be required, with corrective actions taken to ensure final deliverables meet quality expectations. Within 48 hours of acquisition, raw lidar data undergoes initial QC to confirm compliance with project guidelines, allowing timely re-flights if needed. In cases of flooding or snow, Woolpert consults with clients to determine acquisition feasibility. If issues arise post-season, we promptly notify clients and develop resolutions, including re-flights when necessary.

The lidar deliverable production process begins with the data collected from an airborne sensor. Once acquired, the lidar data undergoes a systematic process **to establish the**

generation of accurate and high-quality deliverables, in adherence to USGS Quality Level standards. The initial steps involve hydrographic checks, such as running the Hydro Reclass Macro with careful buffer considerations and conducting a Drawing Review to ensure completeness. Verification processes, including checks for vertical variance on lakes and rivers, polygon Z validation, and meticulous examinations for uniform values in vertices, are executed. Hydrologic and bridge breaklines are imported to LAS with overlapping checks, and deliverable breaklines for lakes, streams, and bridges are created. The entire hydrographic dataset is then clipped to the designated project area (DPA) to ensure alignment with project specifications.

The lidar data is then processed for topographic deliverables, beginning with the generation of GeoTIFF DEMs from LAS data. This involves a thorough review, including validation of grid size with the Project Plan and verification of breaklines enforcement using polygons. Edits are made as necessary, and tiles are reproduced if needed. The DEMs are clipped to the DPA, null values are set uniformly, and pixel-level zoom checks are conducted to identify gaps, overlaps, and offsets. Raster data undergoes rigorous scrutiny, encompassing checks for extreme values, null values, and cell size. The lidar data is also processed to create MSHR (Maximum Surface Height Raster) products and intensity imagery products, each subject to its specific QC checks, including interpolation method verification for MSHR and grid size verification for intensity imagery.

Following the completion of lidar data processing, the deliverable production transitions into the formal lidar data quality control phase. This involves a meticulous review of the deliverables, including compliance checks with USGS Lidar Delivery Guide standards. Various steps are taken, such as version verification, withheld flag checks, and bridge cleanup, ensuring the lidar data aligns with the specified project requirements. The lidar data is converted to the final .laz format, and additional processes, such as Las Thin, Las Split, and Las Boundary, are applied to refine the dataset. Shape files are cleaned, merged, and attributed according to USGS standards. Special attention is given to bridge points, maintaining their proper representation in the DEM without intersecting hydro-polygons.

In addition to topographic and hydrographic assessments, the overall lidar data undergoes inter-swath and intra-swath testing, with accuracy statements and shapefiles generated for detailed quality assessments. Vertical testing includes the creation of NVA (National Vertical Accuracy), VVA (Vertical Vegetation Accuracy), and control shapefiles, accompanied by comprehensive accuracy reports. The final stage involves the creation of a geo-package at the time of delivery, utilizing a USGS template and incorporating LAS WKT (Well-Known Text) information. Throughout these combined processes, meticulous attention to detail, compliance with USGS standards, and comprehensive quality control checks contribute to the production of lidar deliverables of the highest accuracy and consistency.

Raw **topographic/bathymetric lidar** data will be processed using Leica Lidar Survey Studio (LSS). Calibration information, along with processed trajectory information, is combined with the raw laser data to create the laser point cloud in LAS 1.4 format for both the topographic and bathymetric data. All points from the topographic/bathymetric laser include 16-bit intensity values.

Prior to processing, the hydrographer will adjust waveform sensitivity settings based on the environment encountered and enter a value for the refraction index to be used for bathymetry. The index of refraction is an indication of the water type (fresh/salty) and affects absolute depth accuracy, while the sensitivity settings affect which waveform peaks are classified as valid bottom and which peaks are classified as noise. To determine the optimal waveform sensitivity settings for final processing, sample areas are selected and processed with multiple different settings to iteratively find the best solution. Once optimal threshold settings are chosen, they are typically used for an entire survey area. After data is processed in LSS and the data integrity reviewed, data is organized into tiles within a TerraScan project for line-to-line calibration. Using the TerraMatch application, analysis is conducted to assess how well adjacent lines match.

Woolpert offers **a full complement of photogrammetric production** services beyond imagery acquisition and initial processing. For aerial triangulation of acquired imagery, we employ software that includes the suite of Leica XPro, along with SocetSet and ORIMA. We provide a full range of photogrammetric mapping products, including planimetric and topographic mapping and digital terrain model (DTM) development. Our team uses digital softcopy workstations to compile and extract features from the aerial data photogrammetrically and compliant with SDSFIE and A/E/C CADD Standards. Our digital orthophotography production team (using Leica Geosystem XPro, OrthoPro or BAE SocetSet software) brings a combined level of experience in orthophoto production unsurpassed in the industry. Merging this level of skill with successful workflow methodologies allows us to produce photogrammetric mapping and digital orthophoto products that meet project specifications.

Woolpert routinely compiles attributed planimetric detail in accordance with engineering standards. Using the client's photogrammetric compilation feature code list as a guide, the photogrammetric technician will compile and extract the feature data, digitizing one feature class at a time within each stereo-model. This will allow all features, such as roads, buildings, canals, dam, levees, vegetation, shorelines, river mile features, navigation features, to be captured with the correct code, color, symbol, line pattern, and text

size for delivery in the desired target system such as MicroStation, AutoCAD, or ArcGIS. Post-processing of all planimetric feature data involves the application of proprietary toolsets designed to ensure compliance of data to project specifications. Upon completion of each stereo model, we validate the accuracy and completeness of the data by running automated batch routines to evaluate, report, and mark any undershoots, overshoots, and other graphical problems.

The team uses softcopy photogrammetry to compile DTM and DEM data using scanned aerial film imagery, digital imagery and/or a combination of lidar and imagery. The photogrammetric technicians compile breaklines and mass points at appropriate areas for either natural and/or constructed features. Natural features include ditches, tops and bottoms of embankments, cliffs, and hydrologic features. Constructed slope breaks include roads, bridges, railroads, levies, and other man-made features. The density of the DTM/DEM data will depend on the topography of each stereo model. The topographic data will be collected to maximize efficiency to produce terrain data for the generation of contours, hydrologic modeling, and/or digital orthophotography rectification.

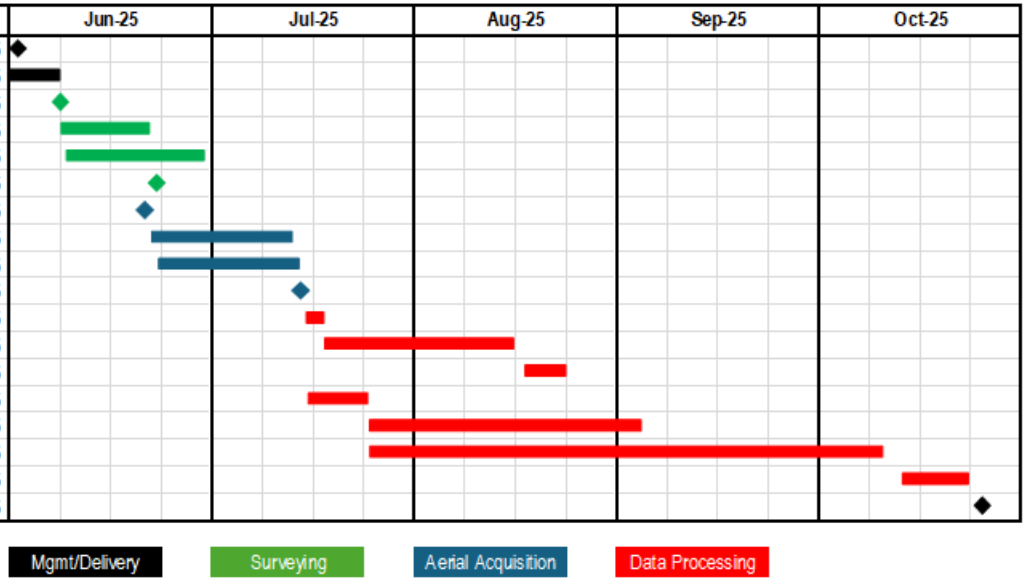
With the ability to deliver digital data in AutoCAD, ArcGIS, ERDAS Imagine, and Bentley MicroStation formats, our team brings the expertise necessary to manage a multitude of various geospatial data types in all wide variety of formats. From initial collection, to processing workflow and final product and dissemination, our experts fully understand how to support the enterprise architecture necessary to manage and display huge volumes of data associated with geospatial products.

Our team is experienced in performing data translations, coordinate conversions, editing, processing, and QA/QC of the mapping data. We are mindful that for data to be used in engineering applications software (such as AutoCAD/Civil3D, MicroStation V8i, InRoads, Open Roads Designer (ORD), and Trimble Business Center), it is imperative that the data is properly formatted and fully functional. To promote consistent methodologies on this contract, our team will follow project planning, project execution, and QA/QC procedures developed through Woolpert's ISO 9001:2015 certification and Lean Six Sigma methodologies.

Project Schedule.

Woolpert will prepare a project schedule based on the requirements of each task order. Below is a sample project schedule that will be created for each task order.

Task	Start	End
NTP	06/02/25	06/02/25
Planning	06/02/25	06/07/25
Survey Mobilization	06/09/25	06/10/25
Control Survey	06/10/25	06/20/25
Survey Data Processing/QC	06/11/25	06/27/25
Survey Demobilization	06/20/25	06/21/25
Flight Crew Mobilization	06/18/25	06/19/25
Aerial Data Acquisition	06/19/25	07/10/25
Raw Aerial Data Processing/QC	06/20/25	07/11/25
Flight Crew Demobilization	07/10/25	07/11/25
Lidar Calibration	07/14/25	07/18/25
Lidar Classification/Breaklines	07/17/25	08/15/25
Lidar Deliverables/QC	08/18/25	08/22/25
Aerial Triangulation	07/14/25	07/25/25
Ortho Processing	07/28/25	09/04/25
Stereo Planimetric Mapping	07/28/25	10/10/25
Photogrammetry Deliverables/QC	10/13/25	10/24/25
Delivery	10/27/25	10/27/25



19. Workload:

For all contracts where a firm on the team is a prime consultant or sub-consultant and where **a)** the consultant selection was made by DOTD, and **b)** a contract was executed by the consultant and the contracting entity by the date the advertisement for this proposal was posted, list all work meeting the following criteria:

1) one of the team's firms is responsible for the performance of the work;
2) authorization to perform the work has been provided, as provided in the contract between the consultant and the contracting entity;
3) the work has not yet been performed and invoiced; and
4) the work is not currently suspended for an indefinite period of time.

For indefinite delivery/indefinite quantity (IDIQ) contracts, list open Task Orders individually.
List only the portion of the fees attributable to firms on the team.

Firm(s) **ALL FIRMS** MUST BE REPRESENTED IN THIS TABLE	Discipline(s) *	Contract Number and State Project Number	Project Name	Remaining Unpaid Balance**
Woolpert, Inc. [1]	Planning	IDIQ44-17351, H.016018.5	Statewide Aviation System Planning Program	$91,410
Woolpert, Inc. [1]	Planning	4400017531 (Invoicing shows IDIQ44-17351), H.014380.5	IDIQ Contract for Statewide Aviation Program Update	$34,691
Chustz Surveying, LLC	Survey	4400021531 | SP H.011829	IMP@LA 13 & LA 100 & I-10 Acc. Rd (Crowley)	$16,119
Chustz Surveying, LLC	Survey	4400021531 | SP H.013872	LA 22 at LA 1085 Roundabout	$15,909
Chustz Surveying, LLC	Survey	4400021531 | SP H.014728	LA 20: LA 304-307	$48,764

DO NOT SUM

[1] = for the projects shown, Woolpert was a subcontractor to Infrastructure Consulting Engineering.

*** The only disciplines to be used are: Appraiser, Bridge, CE&I/OV, CPM, Data Collection, Environmental, Geotech, ITS, Other (must specify), Planning, Right-of-Way, Road, Survey, and Traffic.** If a firm has more than one discipline for any single project, the firm can use multiple rows to express the remaining unpaid balance per discipline.

** Round to the nearest dollar. **Do not** round to the nearest thousands. If there are no active contracts with a remaining unpaid balance, place N/A in the Remaining Unpaid Balance column. NOTE: **ALL** FIRMS MUST BE REPRESENTED IN THIS TABLE. LEAVING THE "REMAINING UNPAID BALANCE" COLUMN BLANK IS NOT ACCEPTABLE.

20. Certifications/Licenses:

If the advertisement requires submission of licenses and/or certificates, include them here. **Otherwise, leave this section blank**.

Woolpert – State of Louisiana, Secretary of State (SOS) Business License

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
WOOLPERT, INC.	Business Corporation (Non-Louisiana)	DAYTON	Active

Previous Names

Business: WOOLPERT, INC.
Charter Number: 35820651F
Registration Date: 11/22/2004
Domicile Address
4454 IDEA CENTER BLVD.
SUITE 100
DAYTON, OH 454301500
Mailing Address
4454 IDEA CENTER BLVD.
SUITE 100
DAYTON, OH 454301500
Principal Business Office
4454 IDEA CENTER BLVD.
SUITE 100
DAYTON, OH 454301500
Registered Office in Louisiana
3867 PLAZA TOWER DR.
BATON ROUGE, LA 70816
Principal Business Establishment in Louisiana
C/O 3867 PLAZA TOWER DRIVE
BATON ROUGE, LA 70816

Status

Status: Active
Annual Report Status: In Good Standing
Qualified: 11/22/2004
Last Report Filed: 10/24/2024
Type: Business Corporation (Non-Louisiana)

Registered Agent(s)

Agent: NATIONAL REGISTERED AGENTS, INC.
Address 1: 3867 PLAZA TOWER DR.
City, State, Zip: BATON ROUGE, LA 70816

Appointment Date: 12/15/2008

UNITED STATES OF AMERICA
State of Louisiana

Nancy Landry
SECRETARY OF STATE

As Secretary of State of the State of Louisiana I do hereby Certify that

WOOLPERT, INC.

A corporation domiciled in DAYTON, OHIO,

Filed charter and qualified to do business in this State on November 22, 2004,

I further certify that the records of this Office indicate the corporation has paid all fees due the Secretary of State, and so far as the Office of the Secretary of State is concerned is in good standing and is authorized to do business in this State.

I further certify that this Certificate is not intended to reflect the financial condition of this corporation since this information is not available from the records of this Office.

In testimony whereof, I have hereunto set my hand and caused the Seal of my Office to be affixed at the City of Baton Rouge on,

August 12, 2025

Secretary of State

Web 35820651F

STATE OF LOUISIANA · UNION · JUSTICE · CONFIDENCE · SECRETARY OF STATE

Certificate ID: 12073625#LJH62

To validate this certificate, visit the following web site, go to **Business Services, Search for Louisiana Business Filings, Validate a Certificate**, then follow the instructions displayed.
www.sos.la.gov

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Chustz Surveying, L.L.C. – State of Louisiana, Secretary of State (SOS) Business License

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
CHUSTZ SURVEYING, L.L.C.	Limited Liability Company	GALLIANO	Active

Previous Names

CHUSTZ SURVEYING, INC. (Changed: 12/31/2016)
CHUSTZ-GARRETT, INC. (Changed: 9/2/1998)
CHUSTZ SURVEYING, INC. (Changed: 11/5/1997)

Business: CHUSTZ SURVEYING, L.L.C.
Charter Number: 34494673K
Registration Date: 5/25/1995

Domicile Address

18838 HWY. 3235
GALLIANO, LA 70354

Mailing Address

P.O. BOX 820
GALLIANO, LA 70354

Status

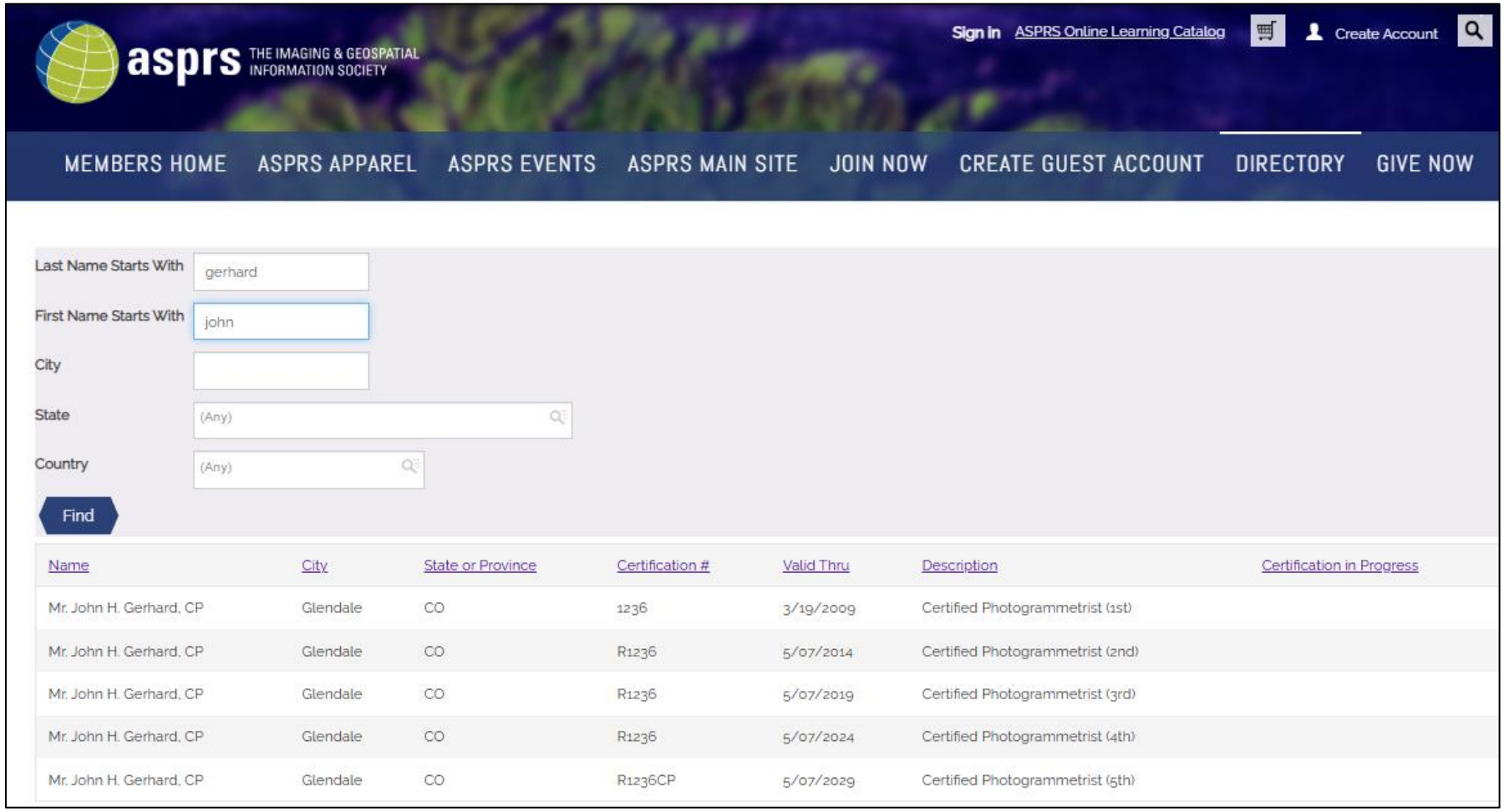
Status: Active
Annual Report Status: In Good Standing
File Date: 5/25/1995
Last Report Filed: 4/29/2025
Type: Limited Liability Company

Registered Agent(s)

Agent: DANIEL ST. GERMAINE
Address 1: 18838 HWY. 3235
City, State, Zip: GALLIANO, LA 70354
Appointment Date: 3/9/2022

Woolpert – ASPRS Certified Photogrammetrist Certifications (MPR 1)

John Gerhard, CP



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Last Name Starts With: gerhard

First Name Starts With: john

City:

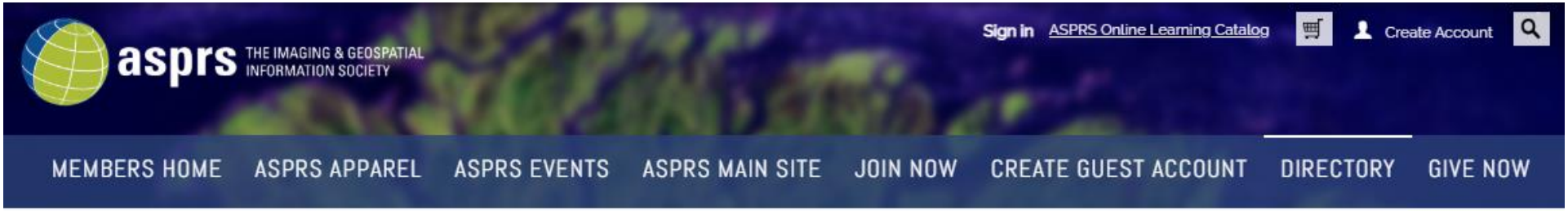
State: (Any)

Country: (Any)

Find

Name	City	State or Province	Certification #	Valid Thru	Description	Certification in Progress
Mr. John H. Gerhard, CP	Glendale	CO	1236	3/19/2009	Certified Photogrammetrist (1st)	
Mr. John H. Gerhard, CP	Glendale	CO	R1236	5/07/2014	Certified Photogrammetrist (2nd)	
Mr. John H. Gerhard, CP	Glendale	CO	R1236	5/07/2019	Certified Photogrammetrist (3rd)	
Mr. John H. Gerhard, CP	Glendale	CO	R1236	5/07/2024	Certified Photogrammetrist (4th)	
Mr. John H. Gerhard, CP	Glendale	CO	R1236CP	5/07/2029	Certified Photogrammetrist (5th)	

Brian Stevens, CP



Last Name Starts With: stevens

First Name Starts With: brian

City:

State: (Any)

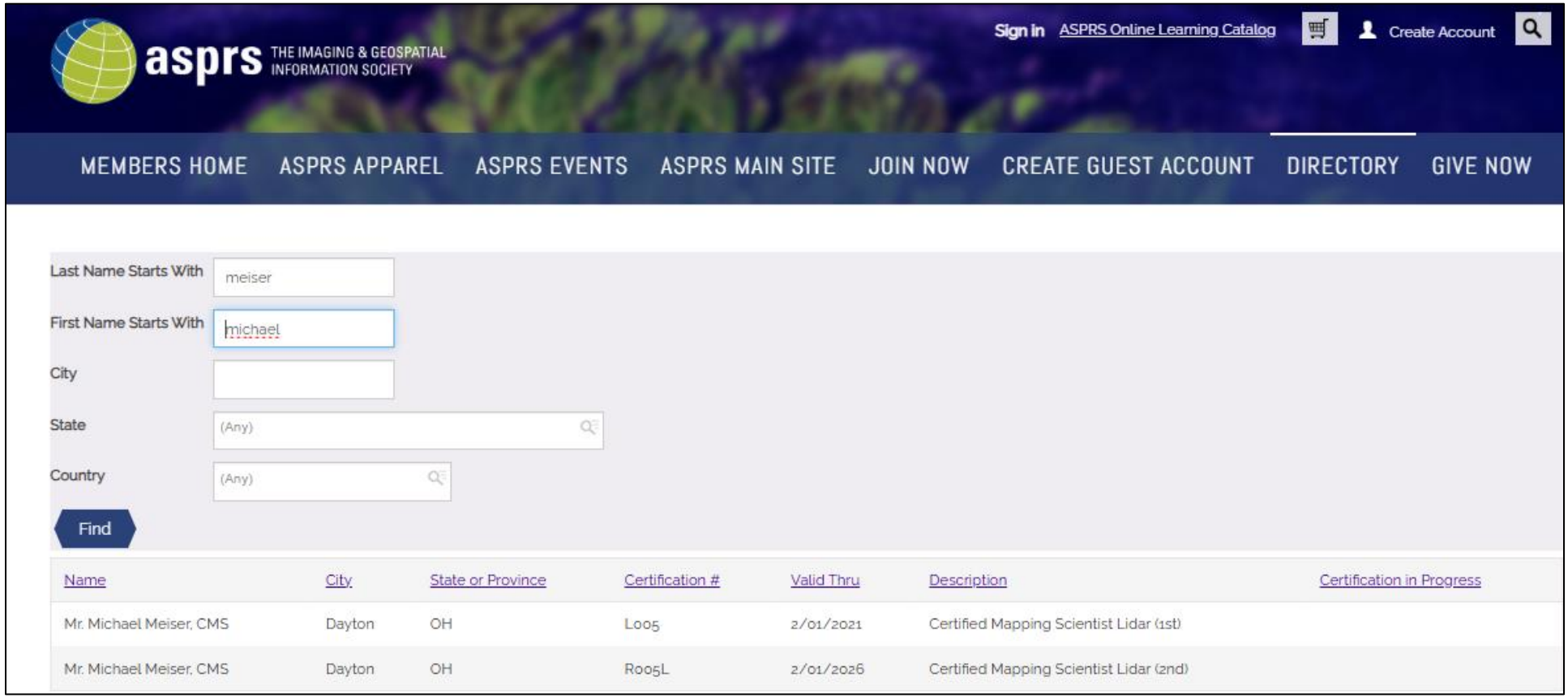
Country: (Any)

Find

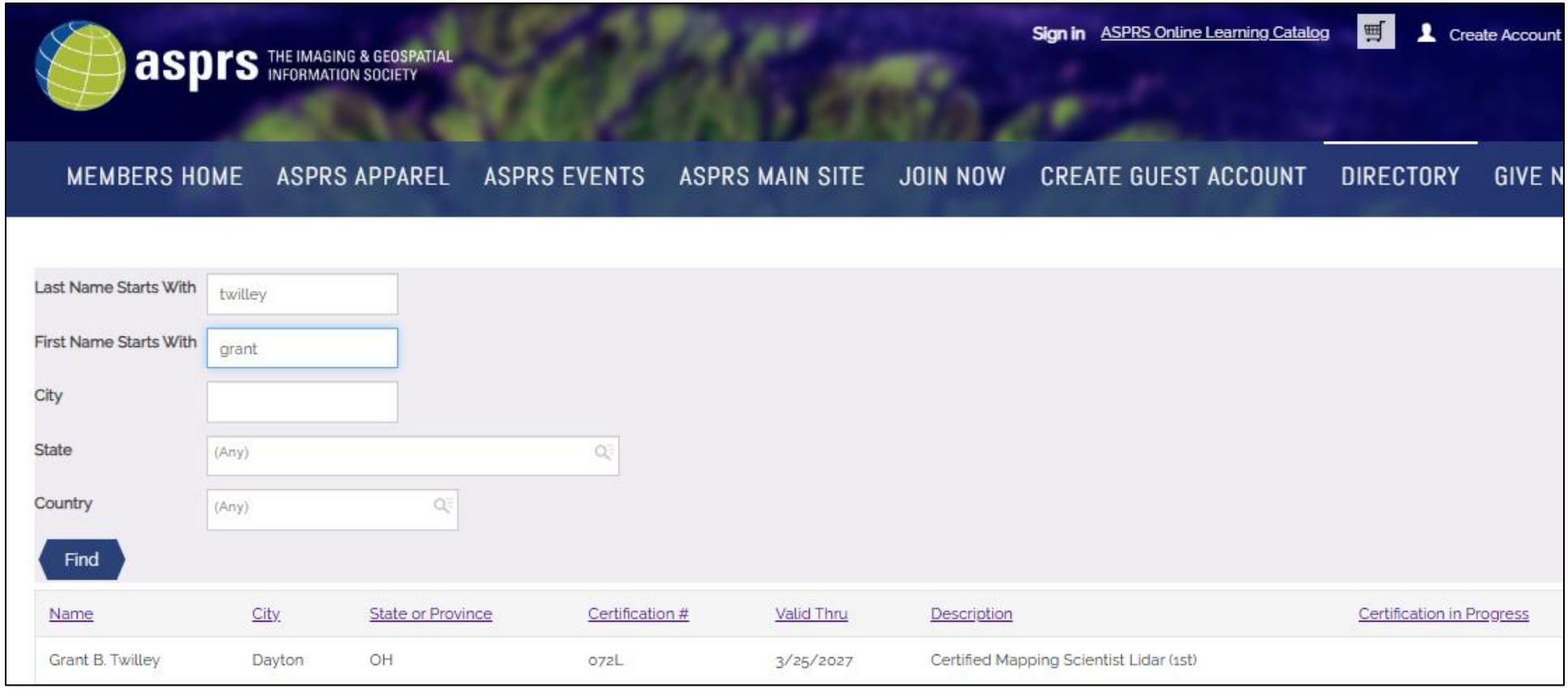
Name	City	State or Province	Certification #	Valid Thru	Description	Certification in Progress
Mr. Brian Stevens, CP	Dayton	OH	1293	3/27/2011	Certified Photogrammetrist (1st)	
Mr. Brian Stevens, CP	Dayton	OH	R1293	3/27/2016	Certified Photogrammetrist (2nd)	
Mr. Brian Stevens, CP	Dayton	OH	R1293	3/27/2021	Certified Photogrammetrist (3rd)	
Mr. Brian Stevens, CP	Dayton	OH	R1293CP	3/27/2026	Certified Photogrammetrist (4th)	

Woolpert – ASPRS Certified Mapping Specialist - Lidar Certifications (MPR 2)

Michael Meiser, CMS-Lidar

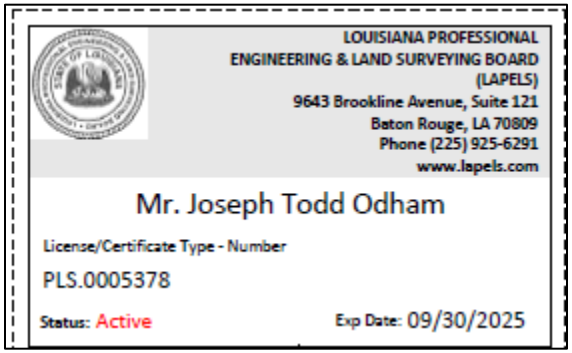


Grant Twilley, CMS-Lidar



State of Louisiana Registered Professional Land Surveyor (MPR 5)

Todd Odham, PLS


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

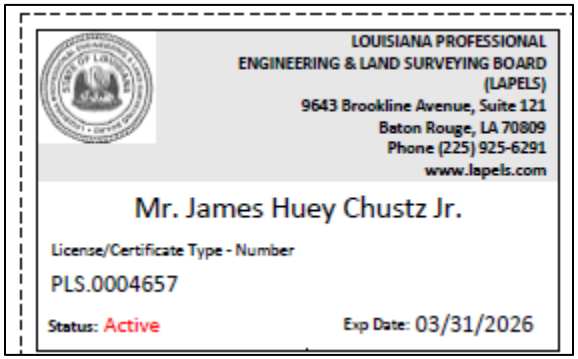
Mr. Joseph Todd Odham

License/Certificate Type - Number

PLS.0005378

Status: Active Exp Date: 09/30/2025

James H. Chustz, Jr., PLS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ENGINEERING & LAND SURVEYING BOARD
(LAPELS)
9643 Brookline Avenue, Suite 121
Baton Rouge, LA 70809
Phone (225) 925-6291
www.lapels.com

Mr. James Huey Chustz Jr.

License/Certificate Type - Number

PLS.0004657

Status: Active Exp Date: 03/31/2026

Evan Chiasson, PLS


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

Mr. Evan Michael Chiasson

License/Certificate Type - Number

PLS.0005139

Status: Active Exp Date: 03/31/2026

Woolpert – Air Transport Pilot Certifications (MPR 6)

John David Swain

Personal Information

JOHN DAVID SWAIN

46 TURTLE TRACKS
NEWNAN GA 30263-7090
County: COWETA
Country: USA

Medical Information:

Medical Class: Second **Medical Date:** 12/2024
MUST USE CORRECTIVE LENS(ES) TO MEET VISION STANDARDS AT ALL REQUIRED DISTANCES.
BasicMed Course Date: None **BasicMed CMEC Date:** None

Certificates

AIRLINE TRANSPORT PILOT | FLIGHT INSTRUCTOR

Certificates Description

Certificate: AIRLINE TRANSPORT PILOT
Date of Issue: 4/7/2020

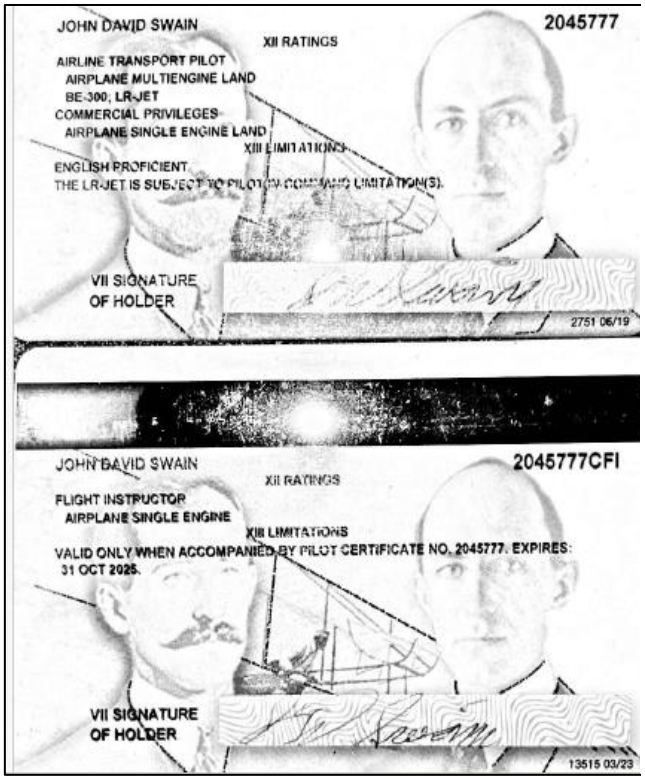
Ratings:
AIRLINE TRANSPORT PILOT
AIRPLANE MULTIENGINE LAND
COMMERCIAL PRIVILEGES
AIRPLANE SINGLE ENGINE LAND

Type Ratings:

A/BE-300 | A/LR-JET

Limits:

ENGLISH PROFICIENT.
THE LR-JET IS SUBJECT TO PILOT-IN-COMMAND LIMITATION(S).



Ryan Comer

Personal Information

RYAN MATTHEW COMER

16144 POLE PINE PT
COLORADO SPRINGS CO 80908-1667
County: EL PASO
Country: USA

Medical Information:

Medical Class: First **Medical Date:** 11/2024
BasicMed Course Date: None **BasicMed CMEC Date:** None

Certificates

AIRLINE TRANSPORT PILOT | FLIGHT INSTRUCTOR

Certificates Description

Certificate: AIRLINE TRANSPORT PILOT
Date of Issue: 10/24/2024

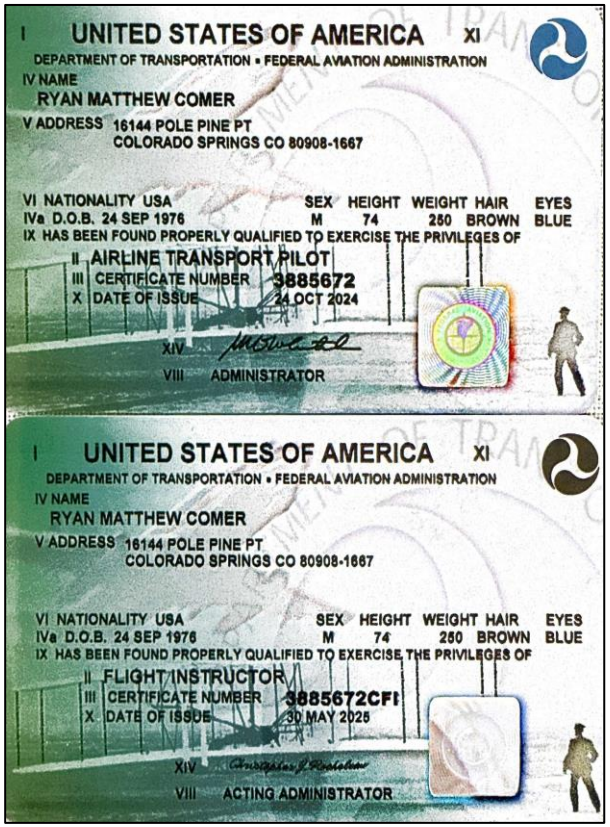
Ratings:
AIRLINE TRANSPORT PILOT
AIRPLANE MULTIENGINE LAND
COMMERCIAL PRIVILEGES
AIRPLANE SINGLE ENGINE LAND

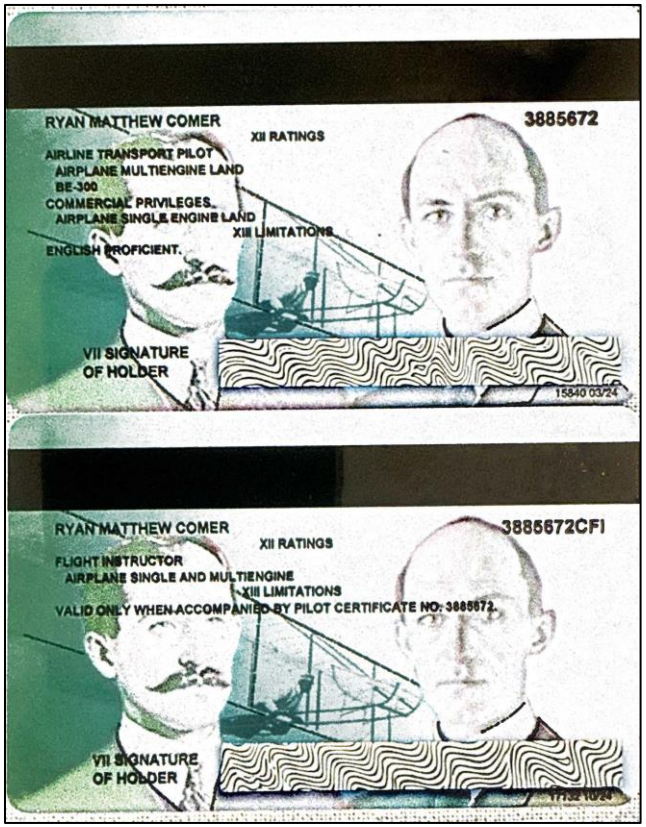
Type Ratings:

A/BE-300

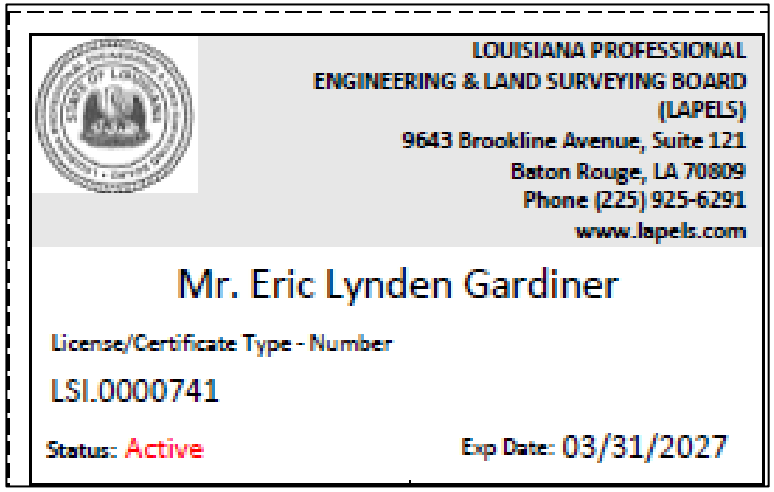
Limits:

ENGLISH PROFICIENT.





Eric Gardiner



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

Mr. Eric Lynden Gardiner

License/Certificate Type - Number

LSI.0000741

Status: Active

Exp Date: 03/31/2027

Lonnie Duponte

CERTIFIED
SURVEY TECHNICIAN

Lonnie P. Dupont

through knowledge, experience and testing has met the requirements
established by the Certified Survey Technician Board.

NSPS

President

Date
March 28, 2025

Level
Level I Entry

Certification Number
0214-4782

NSPS
CST
CERTIFIED SURVEY TECHNICIAN
6/30/2026
Expiration Date

ATSSA TRAINED

PROOF OF TRAINING

THIS CERTIFICATE HEREBY RECOGNIZES THAT

Lonnie Dupont
has attended
Traffic Control Technician-LA State Specific
Training Course

2/7/2023 to 2/7/2027
Training Valid Through

Vice President of Education and Technical Services

Baton Rouge, LA
Location

President, CEO

ATSSA provides training and certification but neither constitutes employment by ATSSA.

ATSSA American Traffic Safety Services Association ATSSA.com

Blake Conner

Craig Villemartette

Equipment (abbreviated list) – Aircraft and Sensor Certifications

- **Aircraft**: one Beechcraft Super King Air, two Reims-Cessna F406, four Cessna 404, and one single engine Cessna 208.

• Platform Type			
Model	# by type	# Owned	Tail Numbers
Super King Air	300	1	N300WQ
Cessna	F406	1	N406SD
Cessna	F406	1	N406WT
Cessna	208B	1	N719HP
Titan	404	1	N404CP
Titan	404	1	N7079F
Titan	404	1	N475RC
Titan	404	1	N532NM

Note: Woolpert, as the Prime Contractor for this LADOTD effort, owns and operates the referenced aircraft for us in supporting this contract. However, Woolpert has a trust agreement between TVPX as trustee and Woolpert. This states the trust has been set up for TVPX to own the aircraft in a trust on Woolpert's behalf. If requested, we can provide LADOTD with lease agreements between TVPX and Woolpert for each of the aircraft listed. We have provided FAA registry information for each of the aircraft listed.

Per the requirements of this solicitation, Woolpert owns the airborne sensors listed below.

- **Topographic Lidar**: 4 Leica TerrainMappers

Make/Model	# of Sensors Owned	Sensor's Best Use
Leica TerrainMapper	4	Terrestrial Lidar

- **Digital Aerial Imaging**: 2 Leica DMC-4H | 1 Leica ADS100 | 6 Leica RCD30

Make/Model	# of Sensors Owned	Sensor's Best Use
Leica ADS100	1	Push broom orthophotography
Leica DMC4H	2	Large format frame orthophotography
Leica RCD30 – (integrated in Leica TerrainMapper)	4	S/M format frame orthophotography & co-collect
Leica RCD30 – (integrated in Leica Chiroptera)	2	S/M format frame orthophotography & co-collect

- **Bathymetric Lidar**: 2 Chiroptera 5X (shallow module) | 2 HawkEye 5X (deep module)

Make/Model	# of Sensors Owned	Sensor's Best Use
Chiroptera 5X (shallow module)	2	Airborne bathymetric lidar (co-collect)
HawkEye 5X (deep module)	2	Airborne bathymetric lidar (co-collect)

- **Geospatial Software Packages/Tools:** Woolpert uses industry-leading commercial off the shelf software as well as custom-developed applications, models, algorithms, and integrations (APIs). Software product suites include over 50 licenses each of Autodesk, Bentley, DATEM, Erdas, Esri, EQuIS, GeoStudio, Leica, Terramodel, Terrascan, and Trimble.
- **Data Processing Platform Types**: High performance computing platforms: Mobile and on-premises Linux and Microsoft, all three primary cloud architectures (Amazon, Google, Microsoft), with total on-premises data storage greater than 10 petabytes (PB) for project data.

Woolpert – Aircraft Certification

FAA REGISTRY

N-Number Inquiry Results

Data Updated Each Federal Working Day At Midnight

N300WQ is Assigned

N-NUMBER ENTERED: 300WQ			
AIRCRAFT DESCRIPTION			
Serial Number	FA-8	Status	Valid
Manufacturer Name	BEECH	Certificate Issue Date	04/10/2021
Model	300	Expiration Date	04/30/2028
Type Aircraft	Fixed Wing Multi-Engine	Type Engine	Turbo-prop
Pending Number Change	None	Dealer	No
Date Change Authorized	None	Mode S Code (base 8 / Oct)	50620525
MFR Year	1984	Mode S Code (Base 16 / Hex)	A32155
Type Registration	Corporation	Fractional Owner	NO
REGISTERED OWNER			
Name	TVPX AIRCRAFT SOLUTIONS INC TRUSTEE		
Street	39 E EAGLE RIDGE DR STE 201		
City	NORTH SALT LAKE	State	UTAH
County	DUCHESNE	Zip Code	84054-2533
Country	UNITED STATES		

FAA REGISTRY

N-Number Inquiry Results

Data Updated Each Federal Working Day At Midnight

N406SD is Assigned

N-NUMBER ENTERED: 406SD

AIRCRAFT DESCRIPTION

Serial Number	0063	Status	Valid
Manufacturer Name	REIMS	Certificate Issue Date	04/10/2021
Model	F406	Expiration Date	04/30/2028
Type Aircraft	Fixed Wing Multi-Engine	Type Engine	Turbo-prop
Pending Number Change	None	Dealer	No
Date Change Authorized	None	Mode S Code (base 8 / Oct)	51142177
MFR Year	1991	Mode S Code (Base 16 / Hex)	A4C47F
Type Registration	Corporation	Fractional Owner	NO

REGISTERED OWNER

Name	TVPX AIRCRAFT SOLUTIONS INC TRUSTEE		
Street	39 E EAGLE RIDGE DR STE 201		
City	NORTH SALT LAKE	State	UTAH
County	DUCHESNE	Zip Code	84054-2533
Country	UNITED STATES		

FAA REGISTRY

N-Number Inquiry Results

Data Updated Each Federal Working Day At Midnight

N406WT is Assigned

N-NUMBER ENTERED: 406WT

AIRCRAFT DESCRIPTION

Serial Number	F4060043	Status	Valid
Manufacturer Name	REIMS AVIATION S A	Certificate Issue Date	04/10/2021
Model	F406	Expiration Date	04/30/2028
Type Aircraft	Fixed Wing Multi-Engine	Type Engine	Turbo-prop
Pending Number Change	None	Dealer	No
Date Change Authorized	None	Mode S Code (base 8 / Oct)	51142361
MFR Year	None	Mode S Code (Base 16 / Hex)	A4C4F1
Type Registration	Corporation	Fractional Owner	NO

REGISTERED OWNER

Name	TVPX AIRCRAFT SOLUTIONS INC TRUSTEE		
Street	30 E EAGLE RIDGE DR STE 201		
City	NORTH SALT LAKE	State	UTAH
County	DUCHESNE	Zip Code	84054
Country	UNITED STATES		

FAA REGISTRY

N-Number Inquiry Results

Data Updated Each Federal Working Day At Midnight

N719HP is Assigned

N-NUMBER ENTERED: 719HP

AIRCRAFT DESCRIPTION

Serial Number	208B1191	Status	Valid
Manufacturer Name	CESSNA	Certificate Issue Date	03/04/2025
Model	208B	Expiration Date	03/31/2032
Type Aircraft	Fixed Wing Single-Engine	Type Engine	Turbo-prop
Pending Number Change	None	Dealer	No
Date Change Authorized	None	Mode S Code (base 8 / Oct)	52317071
MFR Year	2006	Mode S Code (Base 16 / Hex)	A99E39
Type Registration	Corporation	Fractional Owner	NO

REGISTERED OWNER

Name	WOOLPERT INC		
Street	4454 IDEA CENTER BLVD		
City	DAYTON	State	OHIO
County	MONTGOMERY	Zip Code	45430
Country	UNITED STATES		

FAA REGISTRY

N-Number Inquiry Results

Data Updated Each Federal Working Day At Midnight

N404CP is Assigned

N-NUMBER ENTERED: 404CP

AIRCRAFT DESCRIPTION

Serial Number	404-0238	Status	Valid
Manufacturer Name	CESSNA	Certificate Issue Date	04/10/2021
Model	404	Expiration Date	04/30/2028
Type Aircraft	Fixed Wing Multi-Engine	Type Engine	Reciprocating
Pending Number Change	None	Dealer	No
Date Change Authorized	None	Mode S Code (base 8 / Oct)	51135675
MFR Year	1978	Mode S Code (Base 16 / Hex)	A4BBBD
Type Registration	Corporation	Fractional Owner	NO

REGISTERED OWNER

Name	TVPX AIRCRAFT SOLUTIONS INC TRUSTEE		
Street	30 E EAGLE RIDGE DR STE 201		
City	NORTH SALT LAKE	State	UTAH
County	DUCHESNE	Zip Code	84054
Country	UNITED STATES		

FAA REGISTRY

N-Number Inquiry Results

Data Updated Each Federal Working Day At Midnight

N7079F has Assigned/Multiple Records

N-NUMBER ENTERED: 7079F

AIRCRAFT DESCRIPTION

Serial Number	404-0681	Status	Valid
Manufacturer Name	CESSNA	Certificate Issue Date	04/10/2021
Model	404	Expiration Date	04/30/2028
Type Aircraft	Fixed Wing Multi-Engine	Type Engine	Reciprocating
Pending Number Change	None	Dealer	No
Date Change Authorized	None	Mode S Code (base 8 / Oct)	52271050
MFR Year	1980	Mode S Code (Base 16 / Hex)	A97228
Type Registration	Corporation	Fractional Owner	NO

REGISTERED OWNER

Name	TVPX AIRCRAFT SOLUTIONS INC TRUSTEE		
Street	30 E EAGLE RIDGE DR STE 201		
City	NORTH SALT LAKE	State	UTAH
County	DUCHESNE	Zip Code	84054
Country	UNITED STATES		

FAA REGISTRY

N-Number Inquiry Results

Data Updated Each Federal Working Day At Midnight

N475RC is Assigned

N-NUMBER ENTERED: 475RC

AIRCRAFT DESCRIPTION

Serial Number	4040223	Status	Valid
Manufacturer Name	CESSNA	Certificate Issue Date	06/05/2021
Model	404	Expiration Date	06/30/2028
Type Aircraft	Fixed Wing Multi-Engine	Type Engine	Reciprocating
Pending Number Change	None	Dealer	No
Date Change Authorized	None	Mode S Code (base 8 / Oct)	51352447
MFR Year	1978	Mode S Code (Base 16 / Hex)	A5D527
Type Registration	Corporation	Fractional Owner	NO

REGISTERED OWNER

Name	TVPX AIRCRAFT SOLUTIONS INC TRUSTEE		
Street	39 E EAGLE RIDGE DR STE 201		
City	NORTH SALT LAKE	State	UTAH
County	DUCHESNE	Zip Code	84054-2533
Country	UNITED STATES		

FAA REGISTRY

N-Number Inquiry Results

Data Updated Each Federal Working Day At Midnight

N532NM is Assigned

N-NUMBER ENTERED: 532NM

AIRCRAFT DESCRIPTION

Serial Number	404-0624	Status	Valid
Manufacturer Name	CESSNA	Certificate Issue Date	04/10/2021
Model	404	Expiration Date	04/30/2028
Type Aircraft	Fixed Wing Multi-Engine	Type Engine	Reciprocating
Pending Number Change	None	Dealer	No
Date Change Authorized	None	Mode S Code (base 8 / Oct)	51534423
MFR Year	None	Mode S Code (Base 16 / Hex)	A6B913
Type Registration	Corporation	Fractional Owner	NO

REGISTERED OWNER

Name	TVPX AIRCRAFT SOLUTIONS INC TRUSTEE		
Street	30 E EAGLE RIDGE DR STE 201		
City	NORTH SALT LAKE	State	UTAH
County	DUCHESNE	Zip Code	84054
Country	UNITED STATES		

FAA REGISTRY

N-Number Inquiry Results

Data Updated Each Federal Working Day At Midnight

N719HP is Assigned

N-NUMBER ENTERED: 719HP

AIRCRAFT DESCRIPTION

Serial Number	208B1191	Status	Valid
Manufacturer Name	CESSNA	Certificate Issue Date	03/04/2025
Model	208B	Expiration Date	03/31/2032
Type Aircraft	Fixed Wing Single-Engine	Type Engine	Turbo-prop
Pending Number Change	None	Dealer	No
Date Change Authorized	None	Mode S Code (base 8 / Oct)	52317071
MFR Year	2006	Mode S Code (Base 16 / Hex)	A99E39
Type Registration	Corporation	Fractional Owner	NO

REGISTERED OWNER

Name	WOOLPERT INC		
Street	4454 IDEA CENTER BLVD		
City	DAYTON	State	OHIO
County	MONTGOMERY	Zip Code	45430

21. QA/QC Plan:

A QA/QC plan is not requested to be included.

22. Sub-consultant information:

If one or more sub-consultants will be used, provide the name, address, point of contact and phone number for each. Otherwise, leave this section blank.

Firm Name (Name must match exactly as registered with Louisiana's Secretary of State (SOS): including punctuation, include screenshot(s) from SOS at the end of Section 20)	**Address**	**Point of Contact and email address**	**Phone Number**
Chustz Surveying, L.L.C.	211 Richy Street New Roads, LA 70760	James Chustz, Jr., PLS jchustz@chustz.com	225.638.5949 ext 211

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**.


WOOLPERT