

Michigan Department of Transportation Consultant Prequalification Application Review Form			COLUMN FOR INTERNAL USE ONLY
Classification:	Surveying: LiDAR/Remote Sensing Control		
Consultant:			
Procedural Evaluator:	Michael C. Meddaugh	Email: MeddaughM@michigan.gov	
Technical Evaluator:	Tom Bogren	Email: BogrenT@michigan.gov	
Authority to do Business:	Vendor has provided a legible copy of their Articles of Incorporation, Articles of Organization, Certificate of Assumed Name, or Certificate of Authority to Transact Business in Michigan.		PASS <input type="checkbox"/> FAIL <input type="checkbox"/>
Financial Information:	A copy of the vendor's financial information as required by the Office of Commission Audit has been provided.		PASS <input type="checkbox"/> FAIL <input type="checkbox"/>
Management Structure:	Vendor has provided an explanation of the management structure and ownership with related information including a list of all principals and their titles.		PASS <input type="checkbox"/> FAIL <input type="checkbox"/>
2/3rds Licensure:	A copy of each principal's professional license has been provided. If the applying consultant is contracting to provide professional Architecture, professional Engineering, or professional Surveying services, at least 2/3rds of the of the firm's principal's must be licensed in Michigan in one or more of these professions (Article 20 of the Occupational Code, P.A. 299 of 1980, as amended).		PASS <input type="checkbox"/> FAIL <input type="checkbox"/>
Professional Liability Insurance:	Vendor has provided proof of professional liability insurance with minimum limits of one million dollars (\$1,000,000) per occurrence.		PASS <input type="checkbox"/> FAIL <input type="checkbox"/>
Supplied Key Staff			
	Primary Résumé:	Supplemental Résumé (Optional):	
Project Manager/ Professional Surveyor:	PASS <input type="checkbox"/> FAIL <input type="checkbox"/>		PASS <input type="checkbox"/> FAIL <input type="checkbox"/>
Survey Crew Chief:	PASS <input type="checkbox"/> FAIL <input type="checkbox"/>		PASS <input type="checkbox"/> FAIL <input type="checkbox"/>
CADD Operator (if applicable):	PASS <input type="checkbox"/> FAIL <input type="checkbox"/>		PASS <input type="checkbox"/> FAIL <input type="checkbox"/>
Quality Assurance Measures			
QA/QC Plan:	Vendor has provided an overview of how they assure their customers receive quality products and services.		PASS <input type="checkbox"/> FAIL <input type="checkbox"/>
Safety Policies:	Vendor has provide a survey safety policy that addresses: <ul style="list-style-type: none"> • Personal Protective Equipment • Work Zone procedures for maintaining traffic • Worker safety language • OSHA/MIOSHA Regulations • Emergency plan for a typical or actual project 		PASS <input type="checkbox"/> FAIL <input type="checkbox"/>

Prequalification Classification:	<h1>Surveying: LiDAR/Remote Sensing Control</h1>		COLUMN FOR INTERNAL USE ONLY
Definition / Use Statements:	<p>Establishing horizontal and vertical targets and survey control for mapping with various surveying and remote sensing technologies, including aerial LiDAR, mobile LiDAR, static LiDAR, aerial photogrammetry and aerial imagery. Includes the establishment of project horizontal and vertical control, usually based on State Plane Coordinates and the North American Vertical Datum 1988, to be used through survey, design and construction.</p> <p>This classification is intended for the following applications :</p> <p>Road design projects, EPE study projects and infrastructure monitoring projects that utilize remote sensing and mapping technologies that require target placement. Examples of such technologies include, but are not limited to: vehicle mounted mobile LiDAR, static LiDAR, aerial photogrammetry.</p> <p>This classification is used with: "Surveying, Road Design" when static or mobile LiDAR is employed; "Surveying, Remote Sensing" when mobile/aerial LiDAR or aerial photogrammetry/imagery mapping is employed.</p>		
Registrations / Certifications:	Minimum of one (1) Professional Surveyor Licensed in Michigan	PASS <input type="checkbox"/> FAIL <input type="checkbox"/>	
Equipment / Software:	<p>Provide a document certifying that you currently own and that your staff is trained to use the software/equipment listed below (Note that each version of software must be identified and must be MDOT's current version):</p> <p>MicroStation V8i + GEOPAK or PowerGEOPAK</p> <p>Total Station(s) w/ Data Collectors – Robotic / Reflectorless / Conventional</p> <p>GPS receivers (minimum 2) – Dual Frequency, manufactures in year 2004 or later, and associated processing software – RTK capable</p> <p>Level(s) – Digital and/or Automatic</p> <p>Least squares adjustment software – Horizontal and Vertical</p> <p>Coordinate Geometry Software</p> <p>Data Collection Software</p> <p>Fixed Height GPS tripods</p>		PASS <input type="checkbox"/> FAIL <input type="checkbox"/>
Resources / Manuals:	<p>Provide a document certifying your firm has access to current versions of the following and that you have staff that is knowledgeable in the use of these items:</p> <p>MDOT Standards of Practice for Design Surveys & QA/QC Checklist</p> <p>MDOT Workspace and CADD Standards</p> <p>MDOT Design Survey Manual</p> <p>FGCSVERT (Version 4.1 05/24/2004)</p> <p>NOAA Manual NOS NGS – <i>Geodetic Leveling (August 1981, Reprinted June 2001)</i></p> <p>NOAA Manual NOS NGS 5 <i>State Plane Coordinate System of 1983 (March 1990)</i></p> <p>ASPRS Guidelines Vertical Accuracy Reporting for LiDAR Data V1.0, Released: May 24, 2004</p> <p>NOAA Technical Memorandum NOS NGS-58 <i>Guidelines for Establishing GPS-Derived Ellipsoid Heights, Version 4.3 (November 1997)</i></p> <p>NOAA Technical Memorandum NOS NGS-59 <i>Guidelines for Establishing GPS-Derived Orthometric Heights (26 March 2008)</i></p> <p>National Spatial Data Infrastructure <i>Geospatial Positioning Accuracy Standards Part 3, National Standards for Spatial Data Accuracy, FGCD-STD-007.3-1998</i></p> <p>American Congress on Surveying and Mapping and the American Society of Civil Engineers <i>Definitions of Surveying and Associated Terms</i></p>		PASS <input type="checkbox"/> FAIL <input type="checkbox"/>

Key Staff Requirements:

Resumes for Key Staff and Support Staff are limited to two (2) pages per person and must include the level of education completed, a listing of recent projects with the name of the client, project description, location, service cost, staff member's role on the project, firm's role on the project, as well as the name and phone number of the client representative. All projects listed must demonstrate current knowledge related to this classification, MDOT and AASHTO standards, as well as proper use of the equipment, software, resources and manuals listed above. Preference will be given to projects completed for the Michigan Department of Transportation.

Professional Surveyor in responsible charge / Project Manager

Vendor has provided a minimum of one (1) résumé, detailing the following:

- Michigan PS License number
- Knowledge of Michigan Professional Surveying
- Knowledge of MDOT standards and procedures used in surveying for LiDAR/Remote Sensing Control.
- Résumé(s) demonstrate relevant CADD experience, if applicable
- Provided résumés list a minimum of five (5) projects completed within the past eight (8) years.

Survey Crew Chief

Vendor has provided a minimum of one (1) résumé, detailing the following:

- Michigan PS License number, if applicable
- Document experience in charge of a survey crew
- Document experience with GPS and specific applications of GPS/RTK for ground control and control for LiDAR and remote sensing projects and field survey methods, target placement for static LiDAR scanning and mobile and aerial LiDAR projects, photogrammetric targeting schemes and layout and traffic control measures.
- Résumé(s) demonstrate relevant CADD experience, if applicable
- Provided résumés list a minimum of five (5) projects completed within the past eight (8) years.

CADD Operator

Vendor has provided a minimum of one (1) résumé detailing the following:

- Résumé(s) demonstrates documented experience in using MicroStation and CADD software for Surveys

Résumés referenced above should document the individual staff person's experience and knowledge of the following; each project listed as experience for the staff member shall include a brief narrative description of the project's survey tasks and describe the staff member's use of the following:

- Experience demonstrating targeting/control surveys for static LiDAR scanning, mobile LiDAR, aerial LiDAR.
- Experience demonstrating targeting/control surveys for aerial mapping, remote sensing, transportation and corridor surveys, and topographic surveys.
- Experience related to planning, design and layout of control for transportation projects, design of targeting plans for static LiDAR scanning and for mobile and aerial LiDAR projects, photogrammetric targeting scenarios and layout.
- Experience with establishing control referenced to horizontal and vertical datums; geodetic control surveys; Global Positioning Systems (GPS) methods and specific applications of GPS/RTK for ground control and control for LiDAR projects, processing and least squares analysis for control surveys.
- Knowledge and experience in mapping projections, use of National Geodetic Surveys (NGS) control, state plane coordinate zones, scale factors, elevation factors, NGS adjustments and software, including OPUS.
- Knowledge and use of Continuously Operating Reference System (CORS), NGS submittal process (Bluebooking), NGS control monument research and descriptions, National Spatial Reference System (NSRS) Control.
- Demonstrated use of MicroStation software for control and targeting projects.
- Knowledge and experience in traffic control for survey projects.

NOTES:

- Staff resumes submitted must collectively address bullet points listed above.
- CADD Operator is not required if staff listed above demonstrates the necessary experience.
- Sample project electronic files may be requested by the technical reviewer.

Staff Education / Experience:

PASS
FAIL

Comments:

Technical Evaluator Signature & Date:

Final Determination:

APPROVED

Contract Services Approval – Signature & Date:

DENIED