

ADDENDUM 1 – INQUIRIES & RESPONSES

Request for Information (RFI)

Louisiana Department of Transportation and Development (DOTD)

Robotic and Remote Inspection Technologies for Infrastructure Assessment

Deadline for RFI Response: March 5, 2026

1. What type of base will flooded conditions maintain?”

(When areas are flooded, what kind of surface will the robot be moving on?)

- a.** Conditions vary statewide. In flooded culverts and ditches, the bottom may be mud/silt, debris, uneven surfaces, and standing water. DOTD is interested in solutions that can work in wet, debris-filled, low-light conditions and sometimes in water.
- b.** If relevant, in your RFI response, please include: your operating limits for these conditions (traction/surface needs, debris tolerance, retrieval plans, and maximum water depth).

2. “What are the requirements specific to maintaining internet connectivity (always-on or partial) during remote operations?”

(During remote operation, does the system need continuous internet the whole time, or can it work with limited/intermittent connectivity?)

- a.** Connectivity varies by location. DOTD prefers a solution that can still complete an inspection and capture data when service is weak, then upload/sync when a connection is available.
- b.** If relevant, in your RFI response, please include: how your system works with spotty service (offline capability, saving results, and upload/sync process).

3. *“What is the bandwidth available at the connected base stations?”*
(What internet speed/bandwidth is available at the base location where the system would connect?)
 - a. DOTD is not setting one bandwidth standard at the RFI stage because service varies by district and location.
 - b. If relevant, in your RFI response, please include: your minimum and preferred bandwidth needs for live operation (if applicable) and for uploading data, plus any options that reduce bandwidth needs.

4. *“Does remote autonomous monitoring require to provide real time alerts in critical situations. If so within what timeframe?”*
(If the system detects a serious issue, does DOTD expect an immediate alert? If yes, how quickly should that alert be sent?)
 - a. DOTD’s priority is safety and timely awareness of critical findings. DOTD does not set a specific alert timeframe at this stage.
 - b. If relevant, in your RFI response, please include: your alert approach (what triggers alerts, how they’re delivered, typical timing) and how timing changes when connectivity is limited.

5. *“Are there extreme temperatures in which operations will be conducted?”*
(What temperature conditions will the system need to operate in?)
 - a. DOTD expects Louisiana outdoor conditions: heat and humidity and occasional cold.
 - b. If relevant, in your RFI response, please include: your operating temperature and humidity ranges and any limits under extreme conditions.

6. *“How long are remote monitoring missions expected to last (i.e. time between full charge cycles)”*

(How long does a typical remote inspection need to run before the system must recharge?)

- a.** DOTD is seeking industry input on typical run time and how charging works in the field.
- b.** If relevant, in your RFI response, please include: expected run time and charging options (swap batteries, recharge time, tethered power if applicable).

7. *“Are there any specific safety protocols expected to be in place in order to operate alongside or interact with humans?”*

(What safety rules or protections are required when the system is operating near or around people?)

- a.** DOTD’s goal is safer inspections and reduced confined-space entry. Systems must be safe to operate around staff and in real field conditions, including any necessary traffic control measures.
- b.** If relevant, in your RFI response, please include: safety features and operating procedures for working near people, traffic, railways, plus any safety standards/best practices you follow.

8. *“What are the training expectations? How many operators are expected to be trained and what will be their expected (prior) experience level in conducting remote operations and handling precision machinery?”*

(What training does DOTD expect for operators (how many, and what prior experience level?)

- a.** DOTD expects field deployment, so training needs to be practical and scalable statewide. DOTD is not prescribing a required operator background at this stage, but assumption should be that operators may not have experience with remote and robotic systems.
 - b.** If relevant, in your RFI response, please include: training approach, training guidelines for safe implementation, training length, typical staffing (how many operators are required), suggested prior experience and capabilities to train those without former experience, and any certifications needed.

- 9. *“Could we get the dimensions of the spaces that need to be checked frequently?”*
(What are the typical sizes/dimensions of the culverts or spaces that need frequent inspection?)
 - a.** Culverts and drainage structures vary in size, materials, and condition across the state. The minimum diameter of a culvert pipe would be 12-15”.
 - b.** If relevant, in your RFI response, please include: the size range your equipment can inspect, minimum clearances required, and any access constraints.

- 10. *“Ground conditions of the culverts and ditches, will there be heavy mud etc. and how often the robot would be totally submerged (water level over 1m)?”*
(What are the typical ground and water conditions in culverts and ditches (mud, debris, and how often fully underwater?)

- a.** Conditions vary statewide and by time of year, and can include heavy mud/silt, debris, and standing water. DOTD is interested in platforms that can work in wet, muddy, debris-filled areas and potentially in water.
- b.** If relevant, in your RFI response, please include: operating limits and assumptions (debris tolerance, maximum water depth, retrieval plans, and flow rate).

11. “How often are checks in these areas, and would the robot be operated manually or autonomously in these areas?”

(How often are these areas inspected, and would DOTD expect manual operation, autonomous operation, or both?)

- a.** Inspection frequency varies: some checks are routine, some are post-storm, and some are issue driven. DOTD is evaluating both manual remote operations and more automated options.
- b.** If relevant, in your RFI response, please include: typical use cases, how manual vs automated modes are used in practice, staffing needs, and typical coverage/throughput.

12. “What is accuracy of the LiDAR scans needed?”

(How precise do the LiDAR scans need to be?)

- a.** DOTD is not setting a numeric accuracy requirement at the RFI stage. DOTD wants scan detail suitable for condition checks and identifying issues.
- b.** If relevant, in your RFI response, please include: achievable accuracy ranges for these use cases and how you ensure consistent, reliable measurements.

13. “What data exactly needs to flow to GIS systems?”

(What specific information needs to be sent into DOTD’s GIS system?)

- a. DOTD wants inspection results that can be located on a map and associated with existing asset inventories. At minimum, DOTD anticipates location-tagged outputs (photos/video/scan outputs), defects/condition information, and basic inspection details (date/time, location, asset ID if available). *Additional specific details on DOTD's data format below.*
- b. **In your RFI response, please include:** how you deliver data to DOTD systems (export formats/APIs), how DOTD staff view it, where it's stored, and any limitations if the system uses a closed/proprietary format.
- c. **Data Format Details**
 - a. LaDOTD's GIS platform is ESRI's Enterprise for ArcGIS and ArcGIS Pro; versions 11.3 and 3.3.5 respectively)
 - b. All data deliverables will be compatible with LaDOTD GIS platform
 - c. LaDOTD's GIS platform is ESRI's Enterprise for ArcGIS and ArcGIS Pro; versions 11.3 and 3.3.5 respectively)
 - d. All data deliverables will be compatible with LaDOTD GIS platform
- d. **Preferably the collected assets or facilities are delivered as an ESRI file geodatabase, ESRI Enterprise geodatabase (SDE using SQL Server)**
 - a. Shapefiles or GeoJSON would also be acceptable
 - b. Data Dictionaries and metadata (ISO 19139 or FGDC format) will accompany data deliverable
 - c. APIs should be open and interoperable with ESRI's Enterprise for ArcGIS REST API; version 11 or greater
 - d. Any deliverable not meeting the above requirements should be defined and documented
 - e. Interoperability using Safe Software's Feature Manipulation Engine is mandatory
- e. **Location information should be defined appropriately**
 - a. Louisiana's official coordinate system for GIS data is UTM Zone 15, NAD 83 meters projection (with defined epoch if one is used)
 - b. Collected data using any other coordinate system is to be reprojected to UTM Zone 15, NAD 83 meters.
 - c. Vertical data should be defined appropriately (preferably in feet)
- f. **Data model**
 - a. In addition to the Data Dictionary a data model diagram showing data tables and relationships between tables, views or other scripting, stored procedures are preferred
 - b. Industry Standardized Data Model is preferred



- g. Preference to use existing DOTD software platforms, ETL processes and data repositories**
 - a. Proprietary software, ETL processes and data repositories is not recommended