



# UNMANNED AERIAL UTILITY INSPECTION SERVICES

FAA COMPLIANT PROGRAM DESIGNED FOR UTILITIES

Unmanned aerial inspections and surveys of **difficult-to-access structures and pipelines** allow for **safe, efficient and high quality** visual and sensor assessments of transmission and distribution towers, bridges, buildings and pipelines, or as a tool for damage assessment.



## PROGRAM BENEFITS

### State-of-the-Art UAS Technology

ULC Robotics performs aerial inspections using professional-grade UAV systems and carefully selected sensors to ensure the highest quality inspection.

### Innovation in Aerial Inspection

ULC's unmanned aerial inspection program is backed by our utility research and development, and field operations teams as well as our team of expert consultants.

### Improve Safety and Avoid Hazards

Since UAVs are operated remotely, utility personnel do not need to climb heights, or navigate hazardous terrain. The need for scaffolding or suspension equipment is also avoided.

### Lower Cost of Inspection

Aerial inspections of hard-to-access infrastructure avoid the need for piloted aircraft, multiple vehicles or temporary scaffolding to reduce costs.

### Minimize Downtime of Critical Systems

UAV operators perform most inspections while utility assets are in operation to negate the time and disruption required to shut down critical systems.

### Trained and Qualified UAV Pilots

ULC Robotics' UAV operators are licenced pilots who also hold various certifications and operator qualifications to safely carry out high quality inspections.



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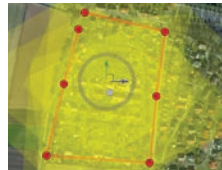
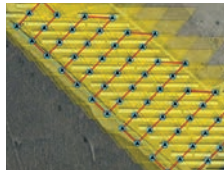
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## MOST ADVANCED UAV TECHNOLOGY

To carry out high quality, safe and reliable aerial inspection for the utility and energy industries, ULC Robotics uses the most advanced UAV technology:

- Programmed flight routes for autonomous flights
- Ability to carry a wide range of cameras and sensors
- High precision flights for highly accurate data
- Extended flight times up to 30 minutes
- Automatic collision avoidance
- High stability in windy conditions



## COMPLETE FLIGHT PLANNING

As a critical part of ULC's aerial inspection services, ULC will work behind the scenes to obtain the necessary permits to perform every inspection:

- > **Certificate of Waiver/Authorization (COA):** ULC will complete and submit all required paperwork to apply for a COA and keep it on file for use with future inspections. COAs can take up to two weeks to obtain and expire after two years.
- > **Flight Plan Generation:** ULC will generate a comprehensive flight plan specific to each mission to ensure safe flight. Once finalized, ULC will file the flight plan with the FAA at least three days before the inspection.
- > **Pre-Flight:** Before the inspection, the flight plan and UAV equipment is examined to ensure that the operation will be successful.

## IN-FIELD UAS APPLICATIONS

Unmanned aerial inspection services have a wide range of uses and applications for the utility industry. As a research and development company, ULC Robotics can also work with you to test new sensors, trial innovative uses of UAS and develop detailed procedures.



### Overhead Lines

- 01 Utility companies can obtain high quality and detailed images of overhead utility lines to look for damage, corrosion or the presence of debris.



### Damage Assessment

- 02 Unmanned Aerial Inspection can be used to quickly assess damage after storms or incidents by accessing areas in which vehicles cannot.



### Pipeline and Leak Monitoring

- 03 UAVs can fly over distribution or transmission pipelines for visual inspection or outfitted with special sensors to locate gas leaks.



### Buildings and Structures

- 04 Utility structures such as buildings, bridges and plants can be inspected by UAVs to avoid having utility personnel perform the same inspections from great heights.