

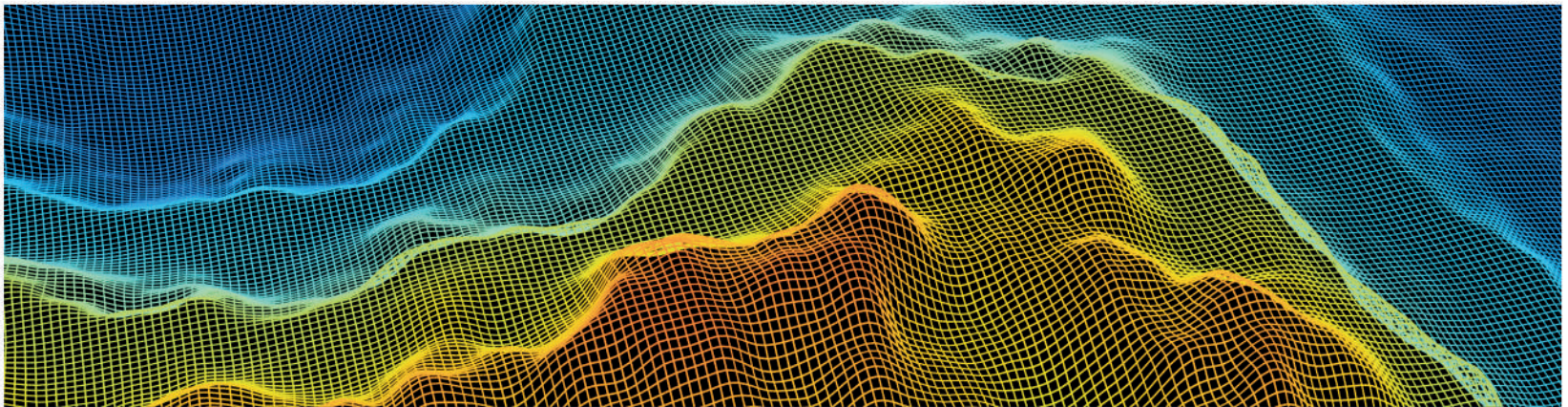


AUTHENTICITY | COMMITMENT | CONSISTENCY | GRIT



MEASUREMENT
SCIENCES INC

ADVANCED GEOMATICS FOR INFORMED DECISIONS



MSI

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PRECISION, INNOVATION, PARTNERSHIP

Discover MSI's commitment to precision, innovation, and partnership in this overview of our services, our values, and our dedication to advancing the field of geomatics.

Strictly Confidential, For Recipient Only

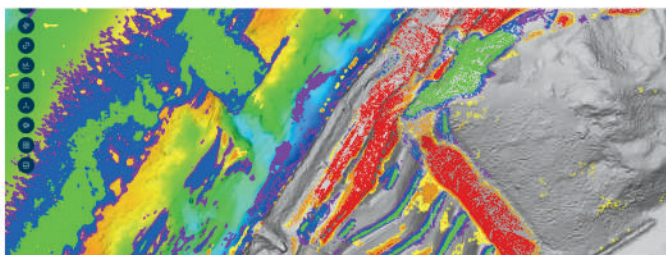
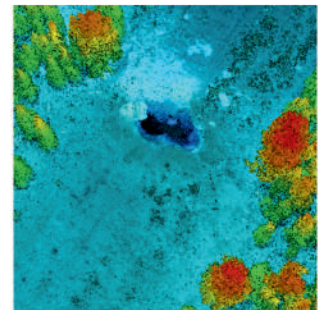
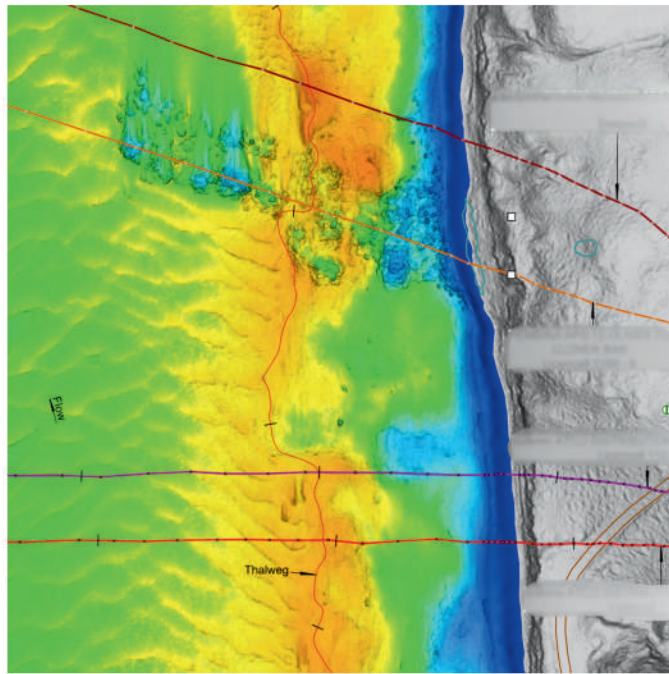
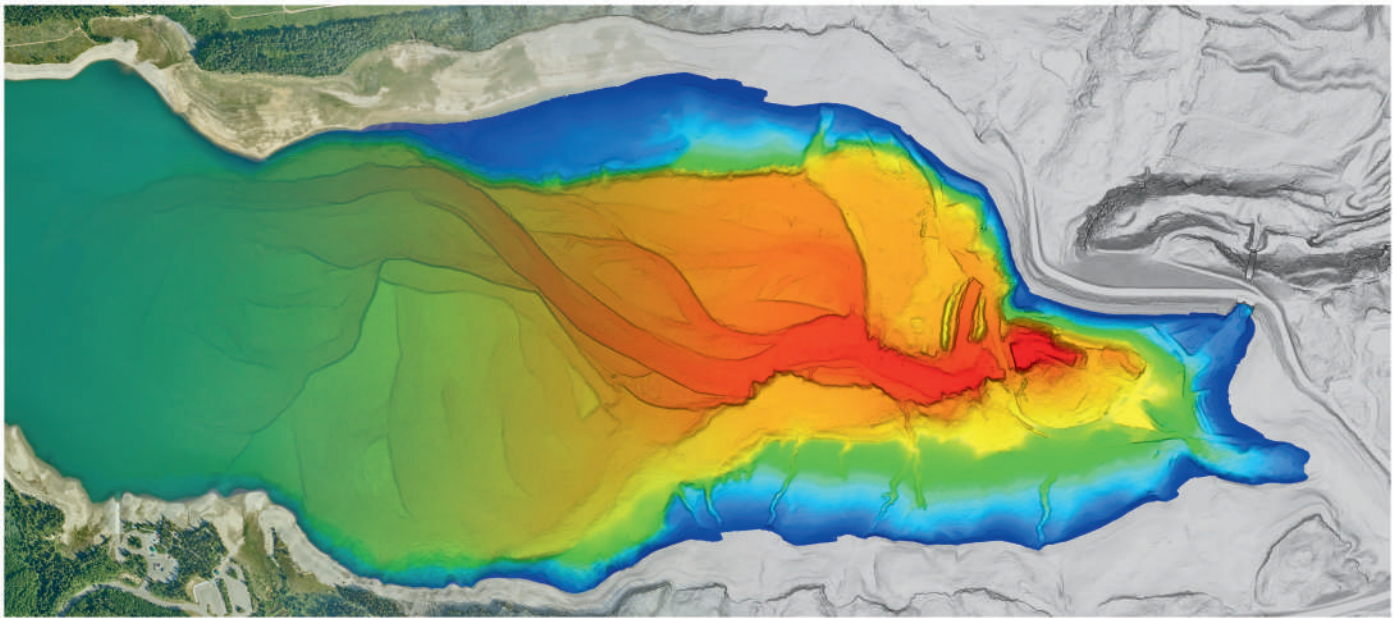


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ABOUT OUR COMPANY

MSI is an employee-owned Geomatics Engineering and Land Surveying firm dedicated to providing authentic and innovative solutions. Driven by our core values of authenticity, commitment, consistency, and grit, we leverage cutting-edge technology and deep industry expertise to deliver precise and reliable services. We're committed to engaging closely with our clients, ensuring we provide exceptional value and build long-term professional relationships. From boundary surveys and pipeline integrity to complex geospatial analysis, we provide accurate and timely results, helping our clients succeed in their critical energy and infrastructure projects.

Founded in 2005, MSI has a rich history of commitment and consistency of delivering to clients. MSI's team of engineers, land surveyors, and technicians leverage the latest technology to provide innovative solutions to a diverse clientele. Our clients include oil and gas pipeline companies, land developers, power generation firms, engineering and construction companies, as well as local municipalities and provincial governments. Driven by a dedication to authenticity and client satisfaction, we consistently deliver precise and reliable results, contributing to the safe and efficient development of energy and infrastructure projects across various sectors.

PRECISION, INNOVATION, PARTNERSHIP





VISION

To lead the industry in advanced geomatics, innovation, and to deliver unmatched value to our clients.

MISSION

To provide authentic, innovative Geomatics solutions ensuring safe and reliable access to energy and infrastructure.

HOW IT GETS DONE

- 01 Deploying cutting-edge technology and techniques
- 02 Providing precise data and analysis that informs critical decisions
- 03 Building strong partnerships with our clients to achieve their goals

PRECISION, INNOVATION, PARTNERSHIP





SAFETY

MSI is deeply committed to the safety and well being of its workers. Recognizing that workers have the right to a safe and healthy work environment, MSI has implemented a robust safety program which protects and educates its staff on workplace hazards, safe operating procedures, and relevant legislation as it pertains to their day-to-day tasks.

Workers at every level, including management, are responsible and accountable for the company's overall health and safety initiatives. Complete and active participation by everyone, every day, in every job, is necessary for the health and safety excellence MSI expects. Management supports the coordination and cooperation of all workers concerning health and safety on the job site.

Management encourages all workers to participate in the program and provides proper equipment, training, and procedures to facilitate safe and healthy work environment. Workers are responsible for following all procedures, working safely, and, wherever possible, improving health and safety measures. MSI's goal is an injury and incident free workplace. Through continuous health and safety efforts, this can be accomplished.



MSI holds a Certificate of Recognition (COR) jointly issued by the Government of Alberta and the Alberta Construction Safety Association.

Employees maintain certification in First Aid, H2S Awareness, Ground Disturbance, ATV Training, and WHMIS.

Employees obtain additional training and certification based on client/project specific requirements, including Swiftwater Rescue – Technician (SRT-1), Bear Awareness, Snowmobile Safety Training, Confined Space, and Industrial Fall Protection.

ALBERTA AFFILIATIONS



Alberta
Land Surveyors'
Association



COMPETITIVE ADVANTAGE

TECHNOLOGY

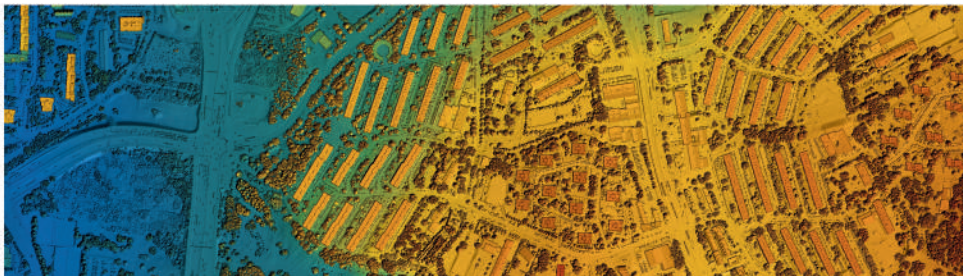
MSI is an industry leader, demonstrated by our investment of over \$2 million in advanced geomatics technology in the past 4 years. Our arsenal of equipment is at the forefront of the field, enabling us to deliver exceptional results.

PROFESSIONALS AND STAFF

MSI's competitive edge comes from the dedication and experience of our team. Our professionals have a proven track record of success in geomatics engineering and land surveying. With Professional Engineers, Alberta Land Surveyors, and certified technicians on staff, we offer a broad range of expertise and a commitment to delivering exceptional results.

EQUIPEMENT HIGHLIGHTS

- Multiple Riegl LiDAR sensors (Mini-Vux, Vux-1, Vux-240)
- Teledyne Optech Galaxy LiDAR sensor
- Multiple Norbit Multibeam Sensors
- Fleet of drones capable of LiDAR, photogrammetry, thermal inspection and surveillance.
- Terrestrial scanners



BRINGING IDEAS & INNOVATION
TO LIFE THROUGH TECHNOLOGY



LEADERSHIP

RYAN MCMAHON

PRESIDENT, CEO
ryan@msciences.ca

Professional Engineer and Alberta Land Surveyor with over 20 years of experience in various survey engineering projects. He is currently involved in deformation monitoring, high density LiDAR, bathymetry, industrial metrology, and precision engineering surveys across North America. Ryan has experience with a wide range of precision survey and analysis techniques.

ANDREW HEALY

COO
andrew@msciences.ca

Professional Engineer and Alberta Land Surveyor with over 13 years of experience in remote sensing, deformation monitoring, precision engineering, real-time continuous monitoring, hydrotechnical and geotechnical depth of cover surveys. He has a wide range of experience with remote sensing technologies, processing techniques and GIS deliverables.

LISA MONK

P.ENG., LAND SURVEYOR
lisa@msciences.ca

Professional Engineer and Alberta Land Surveyor with over 15 years of experience in practice. She has worked in multiple sectors, including oil and gas, engineering, construction, and municipal, across both freehold and public lands.

ELVISS LAICANS

DIRECTOR, VP FIELD OPS.
elviss@msciences.ca

Elviss Laicans is an experienced field operations manager with over 15 years of expertise in pipeline integrity projects across Western Canada. His expertise spans various aspects of surveying including pipe locating, UAV operations, real time monitoring, deformation surveys, high-density lidar collection, and hydrotechnical surveys. Elviss has been a part of over 2000 hydrotechnical and geotechnical surveys.

MATTHEW GLANZER

VP REMOTE SENSING
matt.glanzer@msciences.ca

Professional Engineer with over 10 years of experience in the geospatial data and remote sensing industry. With MSI, Matthew is responsible for expanding the aerial remote sensing program, managing and executing acquisition and data processing projects, and research and development to ensure workflows and equipment are up to date.

GEOFF FRAME

P.ENG., LAND SURVEYOR
geoff@msciences.ca

Professional Engineer and Alberta Land Surveyor with over 13 years of experience. He has a diverse skill set, including expertise in topographic surveys, deformation monitoring, bathymetric surveys, drone surveys, construction surveys, and legal surveys. Since becoming an ALS in 2018, Geoff has primarily overseen municipal land development projects in Calgary and surrounding areas. MSI has completed the subdivision of over 3500 acres of land for municipal development since 2007.



OUR TEAM IS OUTSTANDING

FIELD TEAMS

MSI operates highly skilled and trained survey field teams ranging from 2-5 crew members depending on clients scoping needs.

DRAFTING

MSI has drafters located across the world, able to provide immediate drafting assistance and ability for next day sketches and rapid deliverables.

GIS AND REMOTE SENSING

Dedicated GIS and remote sensing team collaborating to provide a robust GIS suite of geospatial deliverables allowing clients to have full access and in house customization of their data.

EMPLOYEE LONGEVITY

Over 50% of employees have been with MSI for over 5 years and over 20% for more than 10 years.





CORE SERVICES

PIPELINE INTEGRITY - DEPTH OF COVER

- Pipe Locating
- Topographic Surveys
- Singlebeam Bathymetry
- Multibeam Bathymetry
- Drones (Site photos, Photospheres, LiDAR, Orthos)
- GIS Sevices (MSI GeoView)
- Emergency Response

REMOTE SENSING

- Topo Survey Supplementation
- Change Detection
- Forestry
- Transportation
- Corridor Mapping
- Mobile Mapping

ENGINEERING AND LAND SURVEYING

- Cadastral Surveys (Multiphase Subdivisions)
- Construction Support
- Flood Mapping
- Dam Safety Reviews

DEFORMATION

- High Precision Surveys (Horz/Vert)
- Geotechnical Hazard Monitoring
- Real Time Monitoring
- Emergency Response

CUSTOM SOLUTIONS

DRONE

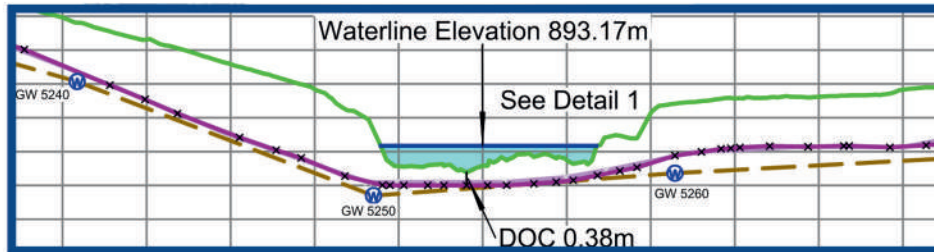
- Aerial Water Sampling
- Thermal Inspection
- Aerial Bridge Inspection (Inverted)

ENGINEERING

- Particle Accelerator Alignment
- Inverted Scan: Waterton National Park
- Penstock Inspections
- Spray Valley 3D Model

BATHYMETRY

- "Roboboat"
- Intake Investigation
- Unmanned Flood River Bed Degradation
- Flood Analysis



PIPELINE INTEGRITY

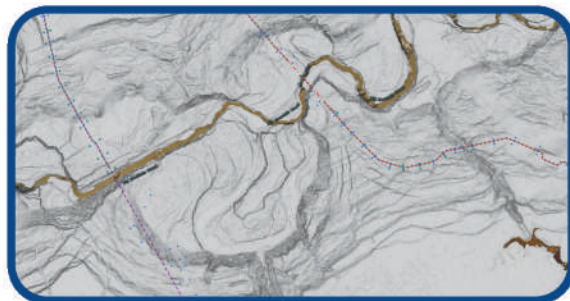
DEPTH OF COVER

INNOVATIVE GEOMATICS FOR PIPELINE SAFETY

MSI leverages advanced geomatics technologies to provide comprehensive pipeline integrity solutions. Our services include high-density LiDAR surveys for large scale mapping and change detection, movement monitoring to identify potential geohazard instabilities, repeatable pipe locating, high resolution bathymetry services, and comprehensive data management to enable proactive and informed decision-making.

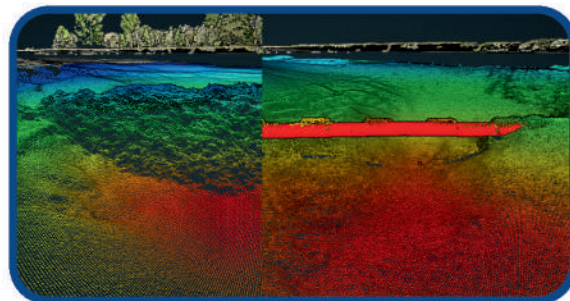
GEOTECHNICAL HAZARDS

- Slope Movement Monitoring
- High Resolution LiDAR
- Real-Time Monitoring
- Change Detection
- Compliance Surveys
- ILI Integration
- Construction Support



HYDROTECHNICAL SURVEYS

- High Resolution Bathymetry
- Scour Investigation
- Riverbed Monitoring
- Bank Erosion Monitoring
- Exposure Confirmation
- Unmanned Vessel
- Construction Support





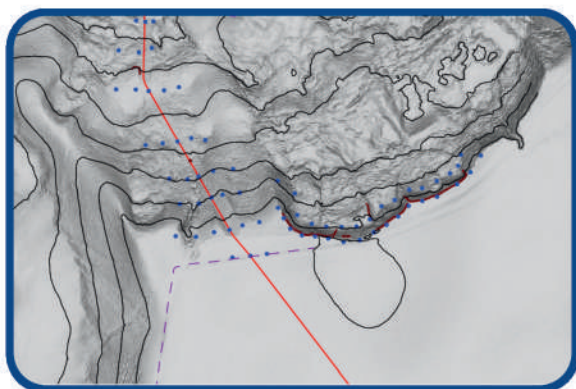
REMOTE SENSING

HIGH ACCURACY-HIGH DENSITY REMOTE SENSING SOLUTIONS

MSI delivers remote sensing projects for a wide range of industries and applications. The company owns several LiDAR and camera systems and can provide simultaneous or separate acquisition at any scale, including fixed-wing, helicopter, UAV, and ground mobile acquisition. A suitable collection method is selected depending on the terrain, scale and level of detail required.

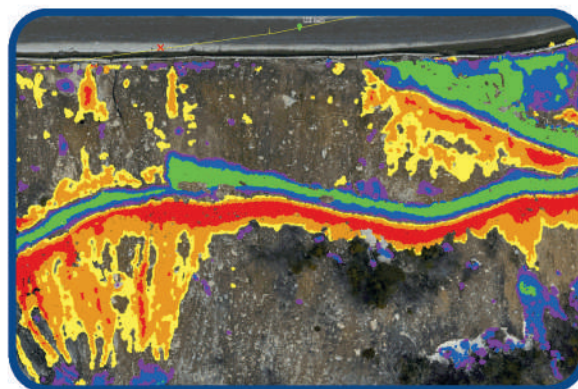
GEOHAZARD MAPPING

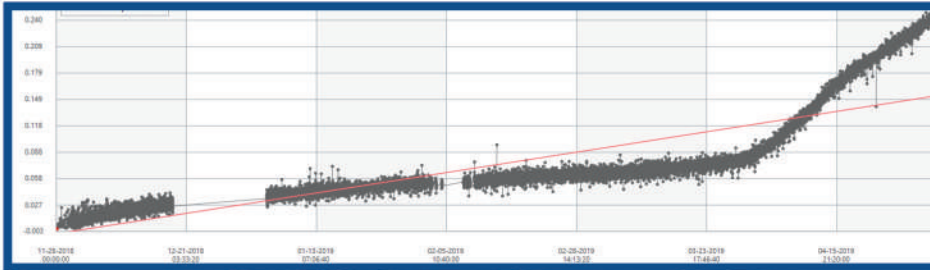
Creating high-density point clouds that enable detailed mapping on and off right-of-way. This allows for thorough identification and assessment of any potential hazards in the surrounding environment.



CHANGE DETECTION

Change detection helps analyze LiDAR data to identify and monitor subtle changes between datasets that can indicate potential hazards. This method complements our spike monitoring, offering both a comprehensive view of ground movement and precise measurement of movement at critical points along the hazard.





VISUALIZE, ANALYZE, ADVISE

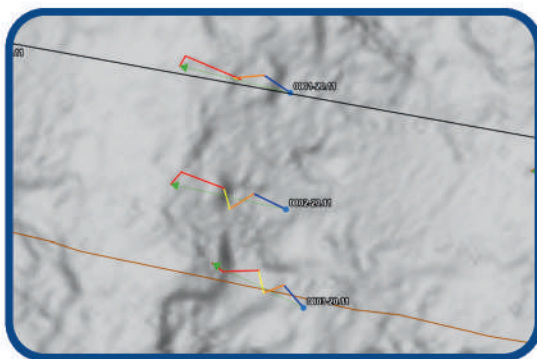
DEFORMATION

PROACTIVE MONITORING FOR RISK MITIGATION

MSI offers a range of deformation monitoring services, including surface monitoring and real-time monitoring systems, to ensure pipeline integrity. These solutions enable the detection of movement and deformation, allowing for proactive measures to prevent failures and maintain safe operations.

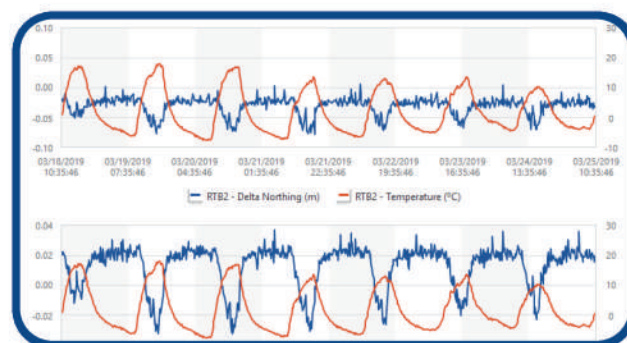
SURFACE MONITORING

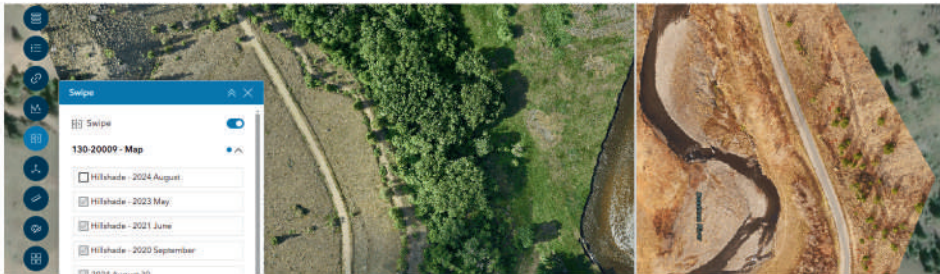
MSI's surface monitoring services provide targeted measurement of ground movement. By strategically placing monitoring points, we can focus on areas of concern, such as locations prone to landslides, subsidence, or other geohazards. This focused approach allows for efficient and cost-effective monitoring of ground stability, providing critical data for pipeline integrity management.



REAL TIME MONITORING

Custom built monitoring set ups from start to finish. Hardware can include GNSS units, VWP's, SAAs, tilt sensors and more. Measurement and reporting frequencies to suit the scope and project needs.





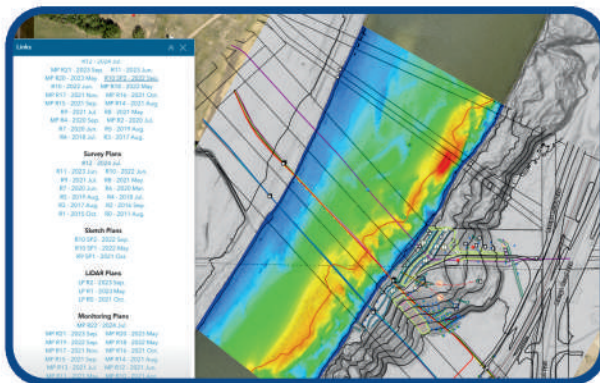
VISUALIZE, ANALYZE, ADVISE

MSI GEOVIEW

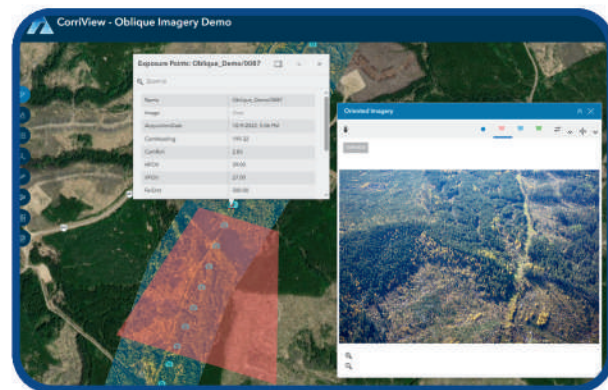
ADAPTABLE GEOSPATIAL VISUALIZATION

MSI GeoView offers a tailored approach to geospatial data visualization because MSI recognizes that different projects have different needs. Out of the box GIS often falls short, which is why we've developed three customizable viewers: **SiteView**, **CorriView**, and **InfraView**. This suite provides clients with customized solutions for exploring, analyzing, and managing their geospatial data, optimized for their specific requirements. Whether you need detailed analysis of a specific site, efficient management of a linear corridor, or a comprehensive overview of your infrastructure assets, MSI GeoView provides the right tools to unlock the insights hidden within your data.

SITEVIEW



CORRIVIEW

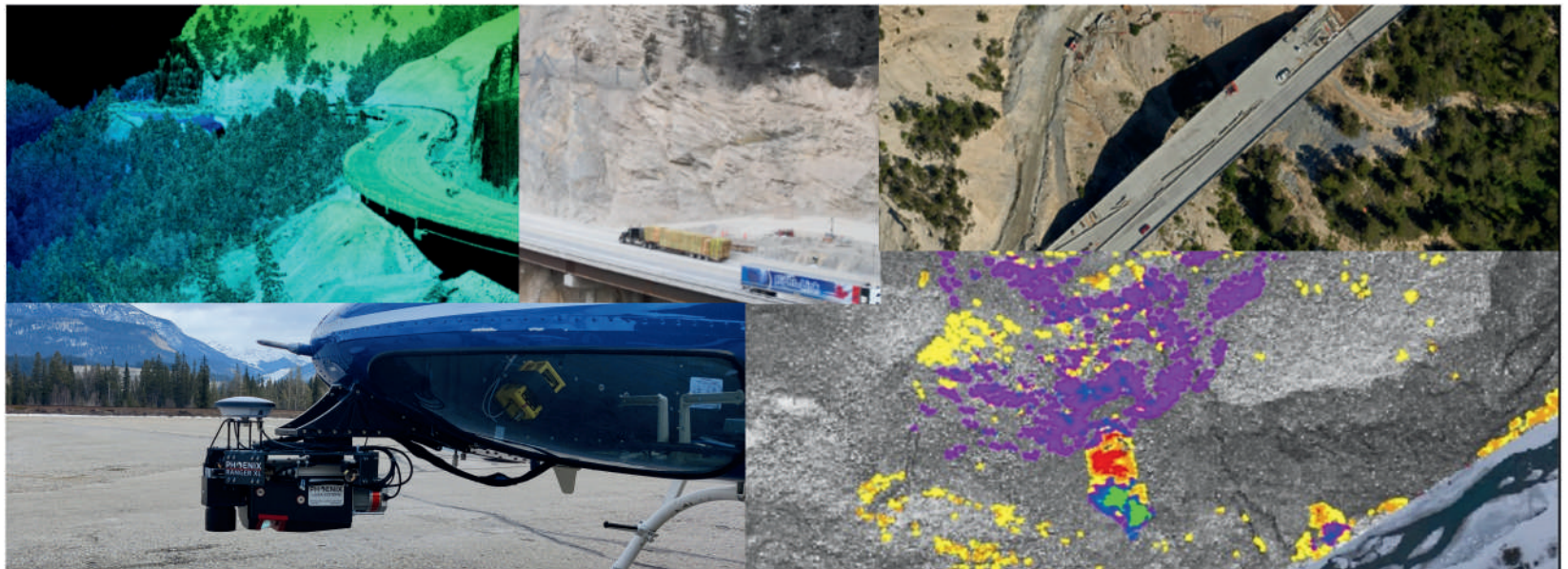




PROJECT HIGHLIGHT: KICKING HORSE CANYON PH4

ACCURATE LIDAR FOR A CHALLENGING TERRAIN

MSI was engaged to conduct weekly aerial LiDAR and photogrammetry services for slope monitoring during the Kicking Horse Canyon Phase 4 highway construction project from March 2021 to November 2025. The project involves monitoring rock formations to detect movements that could pose risks to the construction activities or the nearby downslope railroad. MSI delivers data with a turnaround time of less than 24 hours, requiring efficient flight plans and data processing. Over the last three-year period, MSI completed 115 flights and processed full deliverables, including high-density LiDAR, orthophotos, and change detection layers. A comprehensive GIS web database was developed by MSI to manage the substantial volume of data.



The manned helicopter was required to terrain follow the challenging landscape, which equated to over 500m in elevation change across the scope



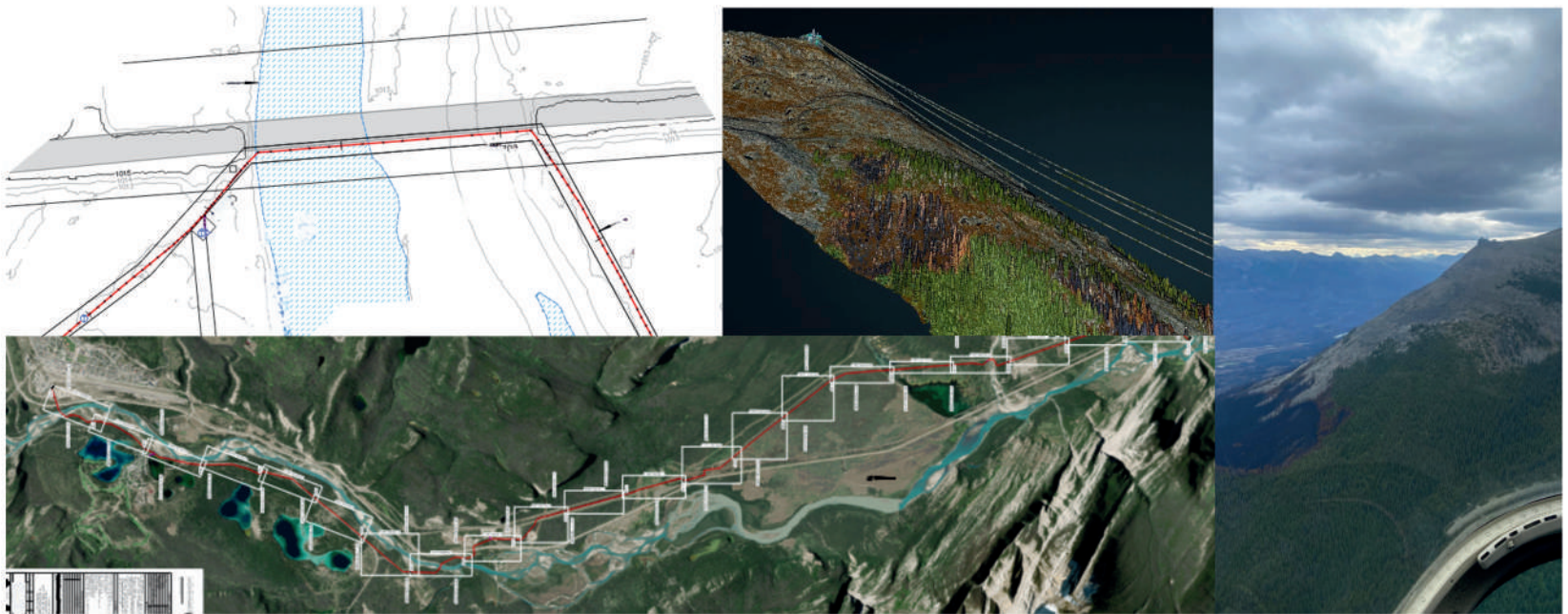
Accumulated over 50TB of data to date on the project.



PROJECT HIGHLIGHT: JASPER FIRE RESPONSE

SWIFT ACTION FOR CRITICAL SITUATIONS

Called to action on 48 hours' notice to survey over 20 km of pipeline affected by the wildfires. Our rapid deployment included flying the pipeline corridor with high-density LiDAR and orthophotography to provide both detailed visual inspection and precise data analysis. This critical information enabled a timely restoration of essential services. MSI was also contracted to fly the area around the Jasper Gondola to locate the electrical wire running up the mountain to the tram. This challenging survey required precise aerial mapping to identify the wire's location. MSI turned around deliverables in a one-week deadline, providing crucial data for the gondola's safe operation.



LiDAR flights needed to occur between 6am-8am to not interfere with fire fighting efforts



Safety was paramount while locating the pipe. Working with operations and tree fallers to ensure a safe right-of-way.



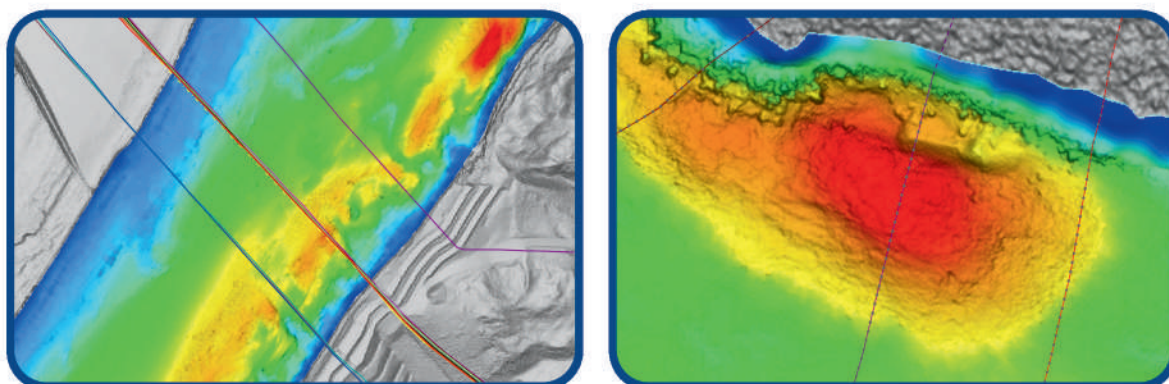
PROJECT HIGHLIGHT: ANNUAL HYDROTECH SURVEY PROGRAM

PRECISION IN DEPTH: ADVANCED HYDROTECHNICAL SURVEYS

MSI delivers expert hydrotechnical survey projects to clients across Canada on a continual basis. Our project experience ranges from small creek surveys to major river assessments, demonstrating our ability to handle diverse challenges and project scales. MSI leverages a combination of advanced technology and proven methodologies to ensure accurate data collection and project success. Our comprehensive project approach includes:

- GNSS surveys for precise positioning
- Singlebeam and multibeam bathymetry for detailed underwater mapping
- Pipeline locating to accurately determine the location of existing submerged infrastructure
- LiDAR surveys to map bank conditions and monitor erosion

We compile the data from these services into MSI SiteView, our customized geospatial data viewer, providing clients with a complete understanding of underwater environments and supporting informed decision-making throughout the project lifecycle.





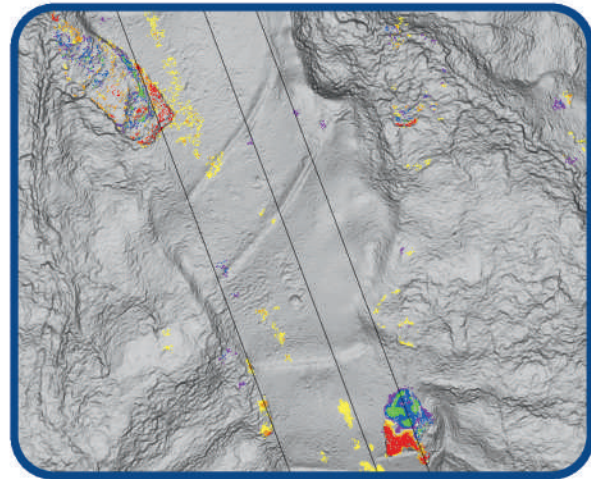
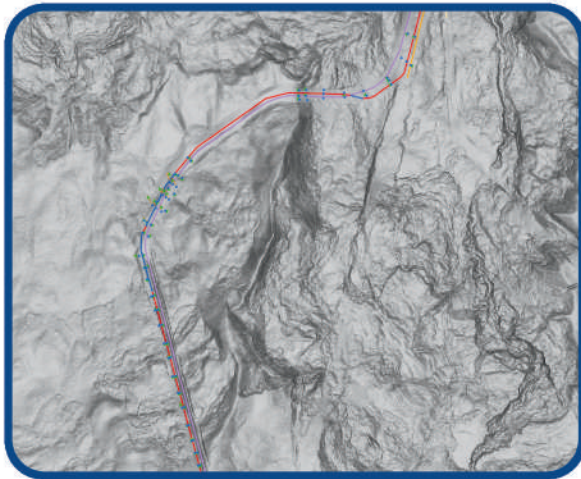
PROJECT HIGHLIGHT: ANNUAL GEOTECH SURVEY PROGRAM

ENSURING STABILITY: TECHNOLOGY-DRIVEN GEOTECHNICAL PROJECT SOLUTIONS

Providing comprehensive geotechnical project capabilities, designed to give clients a complete understanding of surface conditions and ground behavior. Our project approach integrates a variety of techniques, from traditional methods to advanced technologies, to deliver reliable data for informed decision-making. MSI's geotechnical projects include:

- Precise slope monitoring for targeted measurement of ground movement. MSI surveys over 10,000 spikes annually, demonstrating our extensive experience in this critical aspect of geotechnical monitoring.
- High-resolution LiDAR surveys for comprehensive site analysis.
- Advanced change detection analysis for identifying subtle ground deformations.

MSI also has nine real-time monitoring systems deployed across Western Canada for continuous surveillance of critical areas. These systems provide clients with custom interval data and early warnings of potential ground movement, enabling proactive response and risk mitigation.





THANK YOU



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NOTES

