



**CONVEX**  
GEOMATICS LTD

## Precision Geospatial Solutions



Specializing in UAV LiDAR, Mobile Scanning,  
and Bathymetric Surveys

Company Portfolio 2025



# About Us



Founded in 2020, Convex Geomatics Ltd. is a family-owned company based in Calgary, Alberta, and a trusted name in precision geomatics. With over 45 years of combined experience, we provide advanced solutions in LiDAR, mobile mapping, bathymetric surveying, and road condition assessment.

Our high-accuracy, actionable geospatial data supports engineering, infrastructure, energy, and environmental projects. Committed to cutting-edge technology, efficiency, and rapid turnaround, Convex Geomatics drives innovation in critical infrastructure development.



## Our Core Values

### Discipline Drives Excellence

We don't just meet deadlines — we master them. Discipline shapes our workflow, fuels precision, and ensures every project is delivered with consistency and care. It's not just a value; it's how we lead.

### Innovation Without Noise

We cut through the buzzwords. Our innovation is practical, tested, and built to perform. We stay ahead — not by chasing trends, but by solving real problems with real solutions.

### Accountability at Every Level

We own our outcomes — good or bad. Everyone on our team is trusted to lead, act, and deliver. There's no hiding behind titles.

Results speak.

### Action Over Talk

We're doers. Meetings are short, results are sharp, and execution is everything.

We'd rather show than say.

### Grit in Every Job

We don't flinch when it's tough — bad weather, tight deadlines, tricky terrain. Grit means we show up, solve it, and get it done.

No excuses, no shortcuts.

### Simplicity Wins

In a world drowning in complexity, we keep things clear. Whether it's how we communicate or how we build — simplicity makes us faster, sharper, and better.

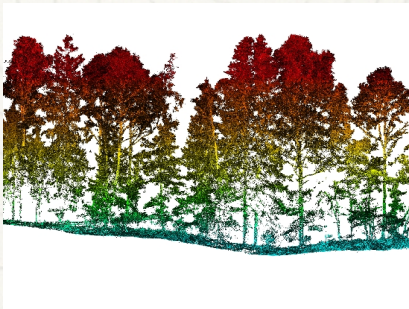
To raise the standard of modern surveying by combining smart technology with hands-on expertise and real collaboration - so every project gets the care, accuracy, and impact it deserves.



# Our Services



## UAV Mapping and LiDAR Scanning

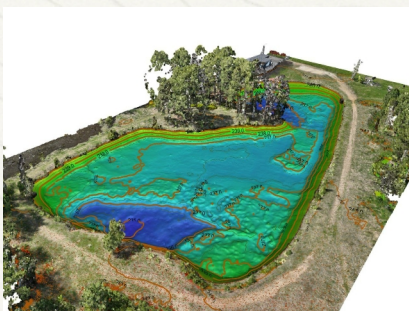


We use high-end LiDAR sensors and high-resolution aerial cameras to deliver industry-leading mapping precision. Our UAV-mounted LiDAR systems support up to 16 returns per pulse, enabling exceptional vegetation penetration and highly accurate bare-earth modelling, even in dense forested environments.

This advanced capability allows us to produce precise digital terrain models (DTMs), digital surface models (DSMs), and classified point clouds suitable for engineering design, planning, and environmental analysis.

Whether it's topographic mapping, infrastructure corridor scanning, or volumetric stockpile analysis, our workflows are optimized for fast turnaround and survey-grade accuracy. Every dataset is rigorously quality-checked to ensure the highest deliverable standards for your project.

## Bathymetric Surveying



Our bathymetric surveys are conducted using high-precision unmanned surface vehicles (USVs) equipped with single-beam echo sounder, delivering accurate underwater terrain data in lakes, rivers, ponds, and tailings.

We specialize in generating detailed bathymetric maps, cross-sectional profiles, and volume calculations for water bodies and sediment studies. Whether supporting engineering design, dredging operations, or environmental monitoring, our workflows ensure consistent, safe, and efficient data acquisition—especially in shallow or hard-to-access areas where traditional methods may fall short.

Our team integrates bathymetric data with aerial photogrammetry and LiDAR to offer complete above-and-below-surface modelling, delivering a comprehensive view of the environment in a single package.

All deliverables are georeferenced, QA-checked, and tailored to your project needs.



# Our Services



## Mobile Mapping

We use advanced vehicle-mounted, backpack, and handheld LiDAR systems to capture high-resolution geospatial data in challenging environments.

Our vehicle-mounted LiDAR collects dense, accurate data at speed—ideal for roads, railways, and corridors—enabling rapid large-area coverage without disrupting operations.

Backpack and handheld SLAM systems provide unmatched flexibility in tight or GPS-denied areas such as forests, construction zones, and indoor environments. These scanners enable rapid, detailed mapping of spaces where vehicles can't go — including small rooms, manholes, trenches, and other confined or unsafe locations.

This approach delivers fast, survey-grade results with seamless integration across platforms — ideal for asset mapping, topographic modelling, and infrastructure analysis.



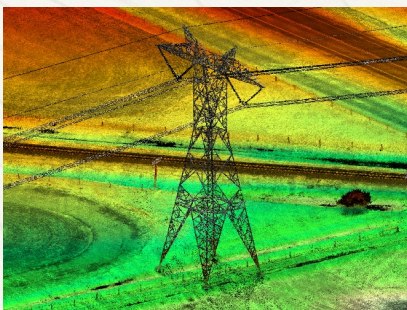
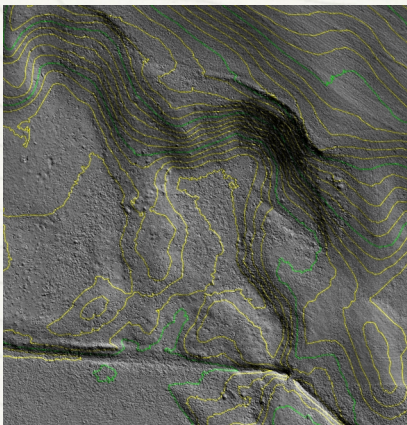
## LiDAR Data Processing

We transform raw LiDAR data into precise, application-ready geospatial products through advanced post-processing and feature extraction techniques.

Our workflows include trajectory adjustment, noise filtering, multi-surface classification, and intelligent segmentation—ensuring highly accurate and consistent point clouds across varied terrain and sensor platforms.

We specialize in extracting complex features such as bare-earth surfaces, building footprints, vegetation strata, utility lines, and hydrographic elements, producing DTMs, DSMs, contours, and 3D vector models optimized for engineering, urban planning, and environmental analysis.

All deliverables undergo rigorous QA/QC and coordinate alignment to meet or exceed survey-grade standards, enabling confident decision-making from start to finish.





# Our Services



## Photomap and 3D Model Generation

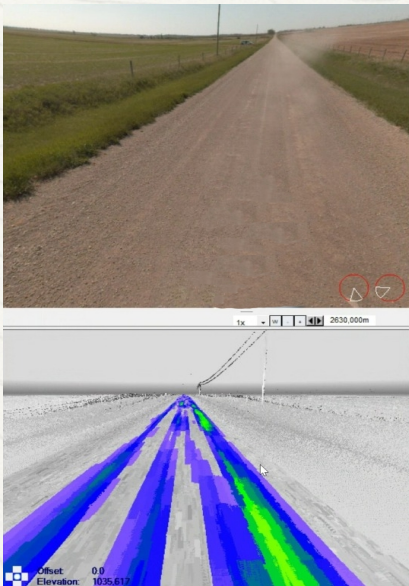


High-resolution orthophotos, photorealistic 3D models, and image-derived point clouds are produced using GNSS-calibrated UAV imagery combined with advanced photogrammetric techniques.

Using PPK-enhanced workflows, precise georeferencing is achieved with minimal ground control, enabling efficient generation of 1.5 cm/pixel orthomosaics, digital surface models (DSMs), and high-fidelity 3D textured meshes.

Ideal for as-built documentation, design validation, cut-and-fill calculations, progress monitoring, and site visualization, these deliverables integrate seamlessly into CAD, GIS, and 3D modelling environments, offering both spatial accuracy and exceptional visual detail.

## Road Quality Assurance



Mobile LiDAR scanning services deliver comprehensive roadway surface evaluations, precisely capturing pavement geometry, rutting, potholes, cross slopes, and shoulder conditions.

Advanced data processing techniques efficiently transform high-density LiDAR data into detailed surface-condition metrics, enabling accurate assessments for infrastructure projects, roadway rehabilitation, and asset inventory documentation.

These LiDAR-derived datasets streamline project workflows, support infrastructure asset management, and facilitate informed, strategic decisions related to roadway maintenance and long-term performance monitoring.



# Project Highlight



**Project:** Coastal GasLink Pipeline  
**Location:** British Columbia, Canada  
**Client:** Coastal GasLink / SAEnergy  
2021 - 2024

Convex Geomatics supported the Coastal GasLink project with full-cycle geospatial services across 200 km of 48" pipeline alignment. Our UAV LiDAR mapping and control network establishment enabled precise surface modelling in remote and rugged terrain. All work was completed without safety incidents, demonstrating our commitment to safe field practices in challenging environments.

By combining aerial scanning with rapid data processing and integration, we helped streamline construction planning and enhance engineering validation workflows. Our role extended beyond data collection — we provided the spatial clarity needed for confident decision-making in high-stakes infrastructure development.

This project reflects our strength in delivering fast, reliable, and engineering-grade results under tight timelines and complex site conditions.





# Why Choose Us



## Land, Water, and Sky – Covered by One Team

Most companies specialize in just one domain.

We master all three:

- Aerial & UAV LiDAR – for terrain, vegetation, utilities, and volume.
- Bathymetric Surveys – precise mapping of underwater features.
- Mobile Mapping – high-speed scanning of roads, corridors, infrastructure, and confined spaces.

You don't have to call three vendors. One team, one workflow, one standard.

## We Deliver Actionable Data, Not Just Point Clouds

We don't dump files. We deliver:

- Classified LiDAR ready for CAD or GIS.
- Clean bathymetry with accurate depth models.
- Surface-ready mobile scans aligned to your control.

You get engineering-grade deliverables — no guesswork.

## Integrated Workflows. No Gaps.

When others struggle to merge UAV scans with bathymetric sonar or align mobile LiDAR with existing survey control, we already solved it.

Our team designs projects start-to-finish with seamless integration across technologies. That means:

- Fewer delays
- Fewer surprises
- Better outcomes

## Fast Field Response. Faster Turnaround.

We know time matters in construction and infrastructure planning.

That's why we offer:

- Rapid mobilization anywhere in Alberta, Saskatchewan or BC
- 48-hour LiDAR processing for smaller jobs
- Pre-configured mobile scanning rigs for same-day data capture

## Experienced Crew. Field-Proven Equipment.

From shallow riverbeds to narrow mountain passes, we've done it.

Hundreds of kilometers scanned — we don't guess, we deliver.

We operate with:

- High-End LiDAR's & GNSS
- SLAM mobile scanners
- Echo sounders & RTK-equipped USVs
- Drone-mounted LiDAR & photogrammetry systems




# Let's Collaborate

Elevate your project with our precision geospatial expertise.



Calgary, Alberta, Canada

High-accuracy LiDAR and mapping to support your goals.  
No matter the industry or scale.

 +1 (403) 608-2879

 [info@convexgeomatics.com](mailto:info@convexgeomatics.com)

 [www.convexgeomatics.com](http://www.convexgeomatics.com)

Explore Our Sample Data  
[cloud.convexgeomatics.com](https://cloud.convexgeomatics.com)

We're here to help you find the right fit.  
Ask us how we can support your next project.

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