

An aerial photograph of a vast, green landscape with rolling hills and a winding river. In the foreground, a white wireframe grid is overlaid on the terrain, suggesting a digital or geospatial model. The sky is blue with some light clouds.

PRODELTA
PROJECTS INC.

REGULATORY COMPLIANCE

REMOTE SENSING

Leading with innovative technology that costs less

DATA ANALYTICS

Geo-referencing and cross analysis for dynamic data

PHOTOGRAMMETRY

Changing the way pipeline inspection is done

INTRODUCTION

ProDelta Projects Inc. (ProDelta) Specializes in Remote Sensing and data Analytics using photogrammetry technology that introduces a new level of analytics that work on ensuring clients stay within compliance and manage risk in a cost-effective manner.

ProDelta's leading technology is changing the way pipeline inspections are done, ensuring the clients exceed their compliance requirements, with transparent data that can be easily searched.

METHODOLOGY

ProDelta Projects Inc. (ProDelta) has developed Proactive Identify Planning Execution (PIPE) System which is a proprietary system that is focused on saving clients money and giving them confidence and auditable regulatory compliance.

The PIPE Process can take thousands of km's of and other hazards, identify high-risk areas and focus specialists (Engineers) on critical areas which can impact safe operations.

If revetment is required, data collected and analyzed through the PIPE Process can aid in the process provide a high level of cost certainty.





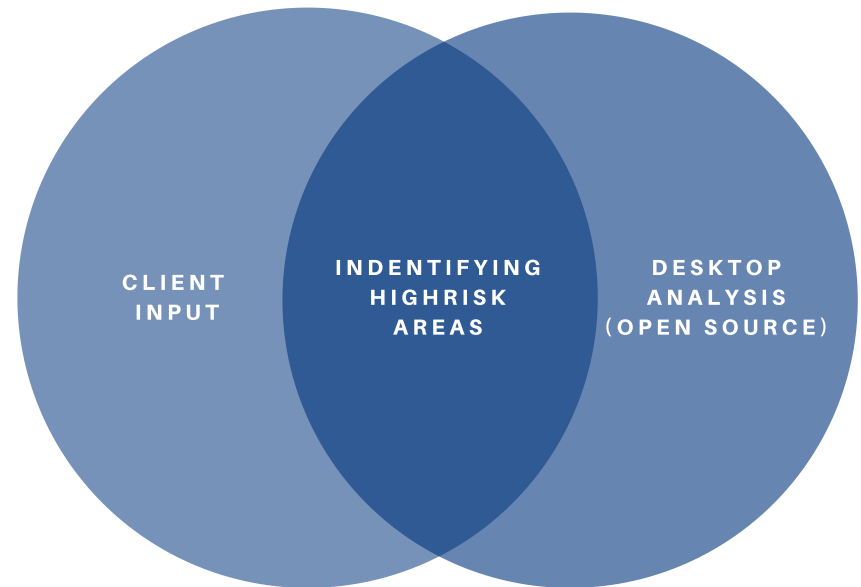
PROACTIVELY IDENTIFY, PLAN & EXECUTE

PROACTIVE

ProDelta has developed its internal geospatial system to utilize both client and open-source data to analyze linear infrastructure. During the process, ProDelta working with the client takes existing data and utilizes analytics to extrapolate potential high-risk areas. This includes but not limited to:

- Age of Infrastructure
- High-Risk Creek Crossings
- Potential Geohazards
- Infrastructure Substance

These analytics are implemented into a monitoring program that can be implemented during the inspection program



REGULATORY COMPLIANCE

IDENTIFY

During the aerial inspection, the ProDelta Photogrammetry sensor captures a high resolution every 2 seconds and is programmed to follow the pipeline ROW.

High-Risk areas identified during the data review or during the inspection have additional data captured in minutes.

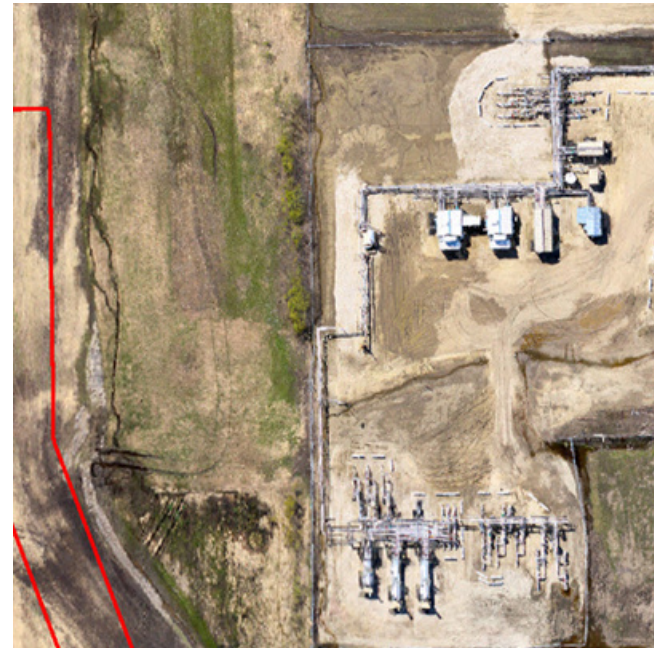
Following the collection of data, ProDelta can generate two (2) different outputs:

01. High Resolution NADAR Photos for low risk areas

02. Processed Data for High risk areas, which entails:

- High-Resolution Orthomosaic
- Colourized Point Cloud
- Digital Surface Model
- 3D Mesh

ProDelta uses GIS systems to manage all inspection data and can incorporate additional data as third-party right-of-way crossings, water, and more. This becomes a live document where the user can interact with their data. Inspection data and photos are managed through ProDelta DMS.



Orthomosaic Image

PHOTOGRAMMETRY MAPPING AND ANALYTICS

Using photogrammetry, a series of analytics can be derived and used for monitoring potential impacts that include but are not limited to:

- Change Detection (Potential Slide Areas, Creeks, Erosion)
- Surface Drainage Patterns
- Vegetation Monitoring

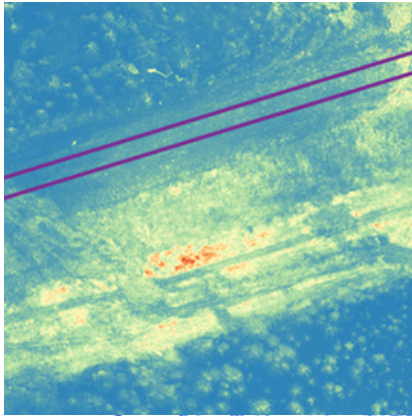
The analytics mentioned above become a cost-saving measure for the following reason:

- The aircraft is in an area collecting data
- Data can be viewed by multiple stake-holders
- No need for landowner permission to access land
- Can be used as a triage effect to help classify higher risk sites
- Analytics are derived on an approved basis by the client.



*Comparison of Satellite Imagery vs Data Collection
During Pipeline Inspection
(High Risk Beaver Dam Identified)*

Advanced Analytics have been developed by ProDelta to work with clients and start analyzing data to prioritize high-risk areas for ground-truthing. The analytics include:



VEGETATION HEALTH

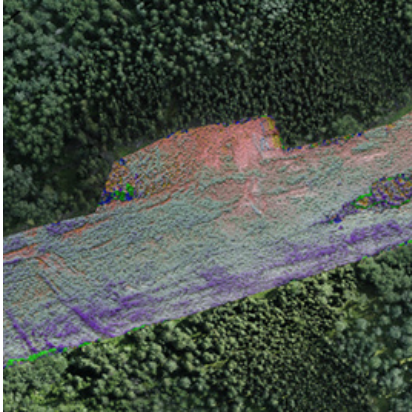
Indication of Spills

Utilizing Vegetation Indices, ProDelta can statistically and visually identify areas of stressed vegetation. Stressed Vegetation is an indication of a potential spill along pipeline due.



SURFACE DRAINAGE ANALYSIS

Utilizing the Surface drainage analysis, ProDelta can identify areas, where water is draining and if it is collecting on the Right of way which may increase the risk of erosion or slope stability impacting the safe operation of the pipe.



CHANGE DETECTION

In areas that are a high potential for slope stability, ProDelta can compare different monitoring events to determine potential movement.

PLANNING

FOCUSED GROUND TRUTHING AND MEASUREMENT

ProDelta has in house survey staff to complete detailed surveys for revetment execution. ProDelta's team can collect data and data which includes but not limited to:

- Depth of Cover
- Potential Movement
- Revetment Design and Cost Estimating

Detailed site drawings are developed to work with specialists (Engineers and Environmental Specialists) to optimize the revetment process.

EXECUTION PLANNING AND SCHEDULING

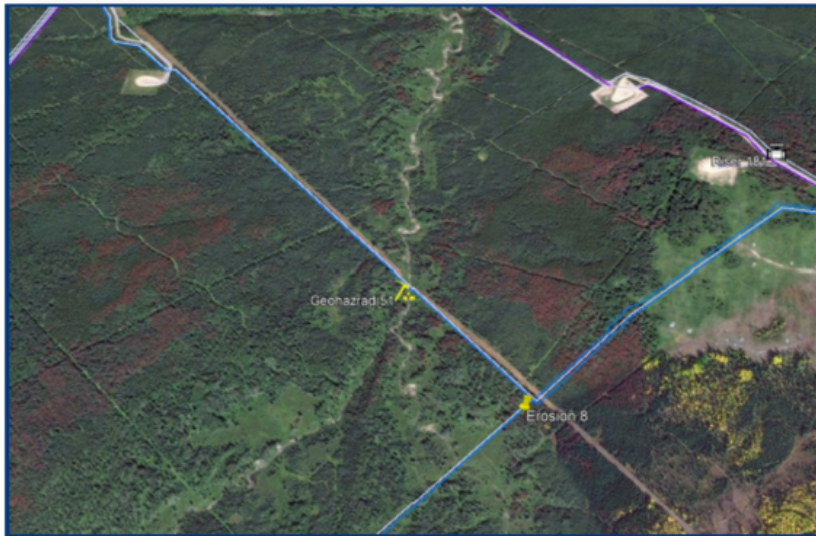
Working with in-house estimators and schedulers, ProDelta can generate a cost estimate and associated schedule. The estimate and schedule will provide a high level of cost certainty. ProDelta can support revetment execution and manage projects with the owners.



REPORTING

ProDelta has a series of reporting tools that can be extracted from the data upon request. This includes but is not limited to:

- Integrated GIS Photos and Waypoints
- Business Intelligence Dashboard
- Single Page Documents
- Flight Log



An example of the classified waypoints

ProDelta can integrate collected waypoints with geotagged photographs into a GIS system. This becomes an interactive model in which the client can look at additional features (Pipeline ROWS, Third-party crossings, etc).

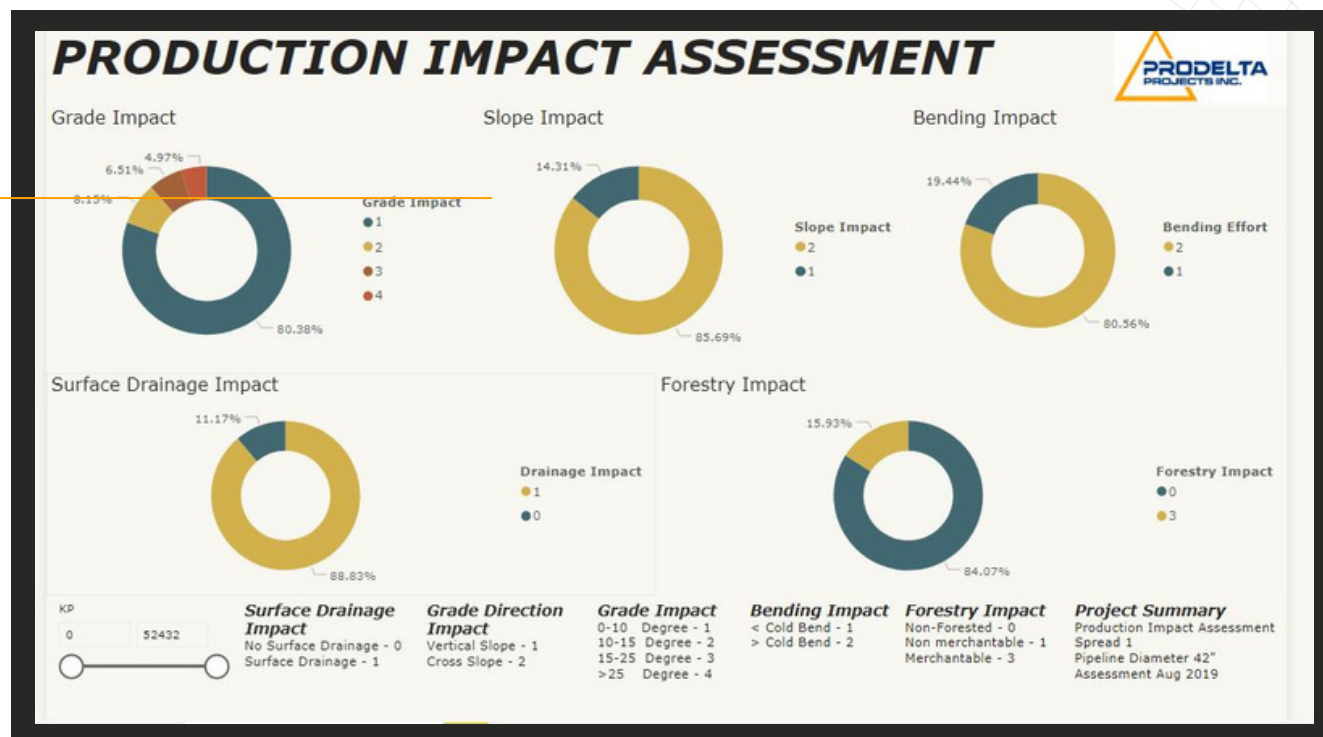
FLIGHT LOGS

ProDelta has a flight tracker on at all times that integrates with their internal GIS system. The inside of the flight track demonstrates the date and time in which each inspection was completed. This is saved for compliance audits for pipeline inspections.

SINGLE PAGE DOCUMENT

If requested, a single-page document can be generated by ProDelta. This would include basic information and embedded photos. This can be customized at the request of the client to ensure it meets regulatory compliance.

BUSINESS INTELLIGENCE DASHBOARD



An example of a client dashboard

An additional reporting option is a Business Intelligence (BI) Dashboard, which can be hosted in a secure online environment. The BI dashboard can have a number of filters that can show different reporting. Filters that can be generated include but not limited to Date, Pipeline and Defficiency.

EXECUTION

INTEGRATED EXECUTION

During execution with approved contractors, ProDelta's field technical staff can quantity survey, automate data required for all integrity digs, and support machine control.

Machine Control is a paradigm shift in the way equipment operation is completed at the frontline. ProDelta is utilizing GPS technology in order to give equipment operators extreme confidence and high levels of accuracy while operating, as well as generating a better understanding of the process.

Additionally, hazards such as hot lines can be integrated as "no dig zone".



CLOSURE

ProDelta's PIPE Process is designed to save our clients money while managing large regulatory commitments.

Utilizing photogrammetry technology with advanced analytics allowss clients to focus their efforts on high-risk areas while optimizing their operation dollars.

Where revetment is required, data collected and analyzed through the PIPE will provide a high level of cost certainty and can integrate into an excavator bucket.

OTHER AREAS

ProDelta's PIPE Process has been utilized in:

- Asset Retirement Obligation (ARO)
- New Construction (Pipeline/Civil)
- Suspended Well Management/Inspection
- Real-Time Data Management



**IF YOU ARE INTERESTED IN
LEARNING MORE ABOUT HOW
PRODELTA USES THE PIPE
PROCESS TO SAVE YOU MONEY,
CONTACT US TODAY AT
[PRODELTA.CA/CONTACT](https://prodelta.ca/contact)**



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