

Skagit County Public Works sUAS Program



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Engineering Division
Skagit County



Why should we fly?

“Our future success is directly proportional to our ability to understand, adopt and integrate new technology in our work”

-Sukant Ratnakar

Economics: The increased speed and automation provide robust data collection in far less time, saving money.

Safety: sUAS Technology collects data safely from the air eliminating the risks and cost associated with conventional survey methods.

Projected Hours/Cost Per Project	
Traditional Mapping 25 acre site	sUAS Mapping 25 acre site
Preliminary Setup (office hrs)	
6	12
Mapping (field hrs)	
50	2
Post-Processing (office hrs)	
14	30
Total (hrs)	
70	44
\$ 4,550.00	\$ 1,716.00



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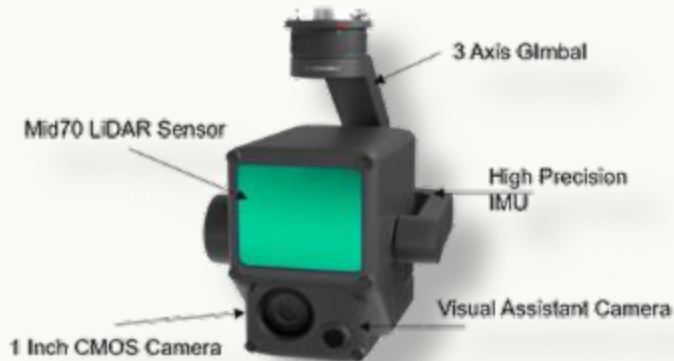


Genesis I



LiDAR

Light Detection and Ranging



A remote sensing method that uses light in the form of a pulsed laser to measure ranges (variable distances) to the Earth.

H20T

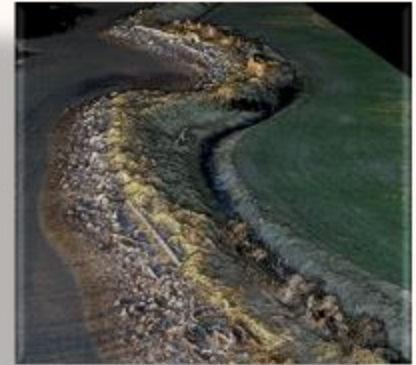
Hybrid Thermal Technology



- 12mp Wide Camera
- 20mp Zoom Camera
- 1200 m LRF
- 640x512 px Radiometric Thermal Camera

Applications

- Topographic Mapping
- Inventory Management
- Volumetrics
- Inspection
- Disaster Response



Topographic Mapping

- A topographic survey locates surface features of a property and depicts the landscape with associated elevations. In essence it is a 3-dimensional map of the terrain showing the natural and man-made features and improvements.
- SCPW survey team gathers existing conditions data for project analysis:
 - Road operation and improvements
 - Facilities development
 - Stormwater and Drainage utility
 - Riparian and Littoral resource management
 - Park land and trail growth

Samish Island Road

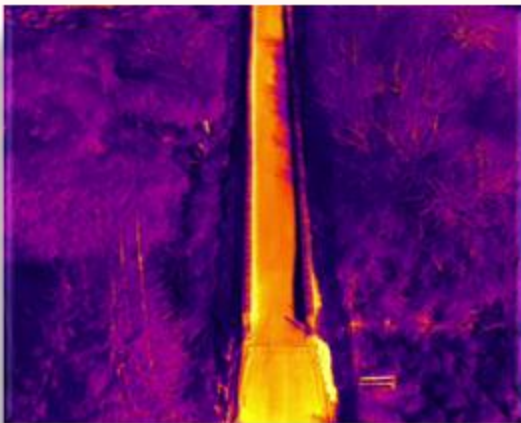


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Inventory Management

Eden's Road

- As-built surveys, commonly referred to as record drawings, provide formal records of exactly how a project was installed. They document the results of final construction and are archived.
- Aerial images or video can be collected from repeated flights to monitor and document construction site.



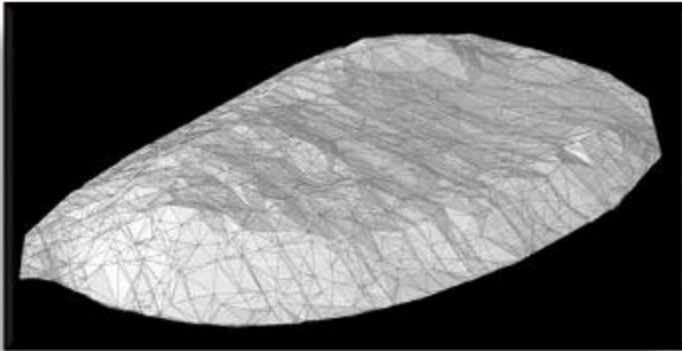
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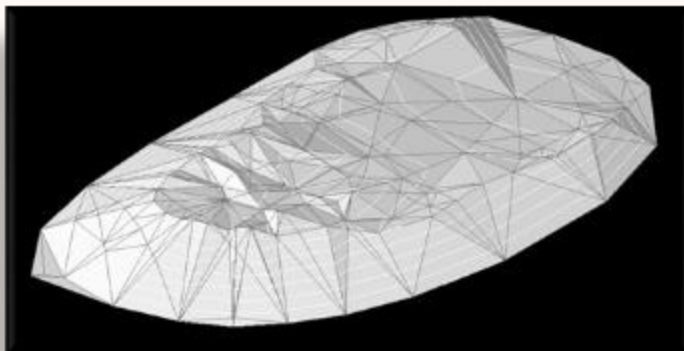
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Volumetrics

LiDAR Volume 3,838 C.Y.



Conventional Volume 4,236 C.Y.



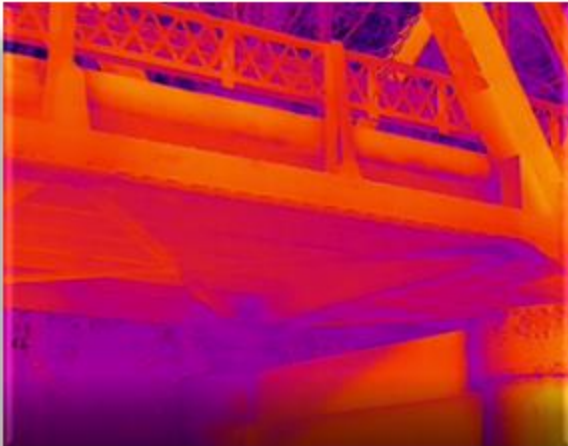
Butler Pit



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- LiDAR technology provides a quick method for volume quantities and changes of objects that are complex or too dangerous to physically occupy.
- This technology is a superior form of data collection, accurately gathering millions of surface points in only a few minutes. Compare this to traditional terrestrial mapping, which takes hours to collect a few points and ultimately lacks the intricacy and detail that LiDAR provides.

Inspection



Marblemount Bridge



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- High-definition video component can be flown along structures for collecting high-resolution imagery and video.
- Enables remote inspections, reduces time; provides access to difficult areas, and create image records for future use.
- Thermal Imaging camera that translates thermal energy (heat) into visible light to analyze a particular object.

Disaster Response

- High-definition video component records impacted areas for situational awareness and damage assessment.
- The Real Time Kinetic GPS component provides accurate location and definition of disaster impacts.

Concrete-Sauk valley Road M.P. 3.7



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Questions?

Please Contact Skagit County Public Works

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SKAGIT COUNTY
WASHINGTON

NOTICE

DRONE FLIGHT IN PROGRESS

Reference Flight Mission Number
SC-2023011022D

FOR PROJECT DETAILS:
www.skagitcounty.net/drone
OR Call Skagit County Public Works (360) 416-1400

PLEASE VISIT
www.faa.gov/uas

FAA 14 CFR Part 107-
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