



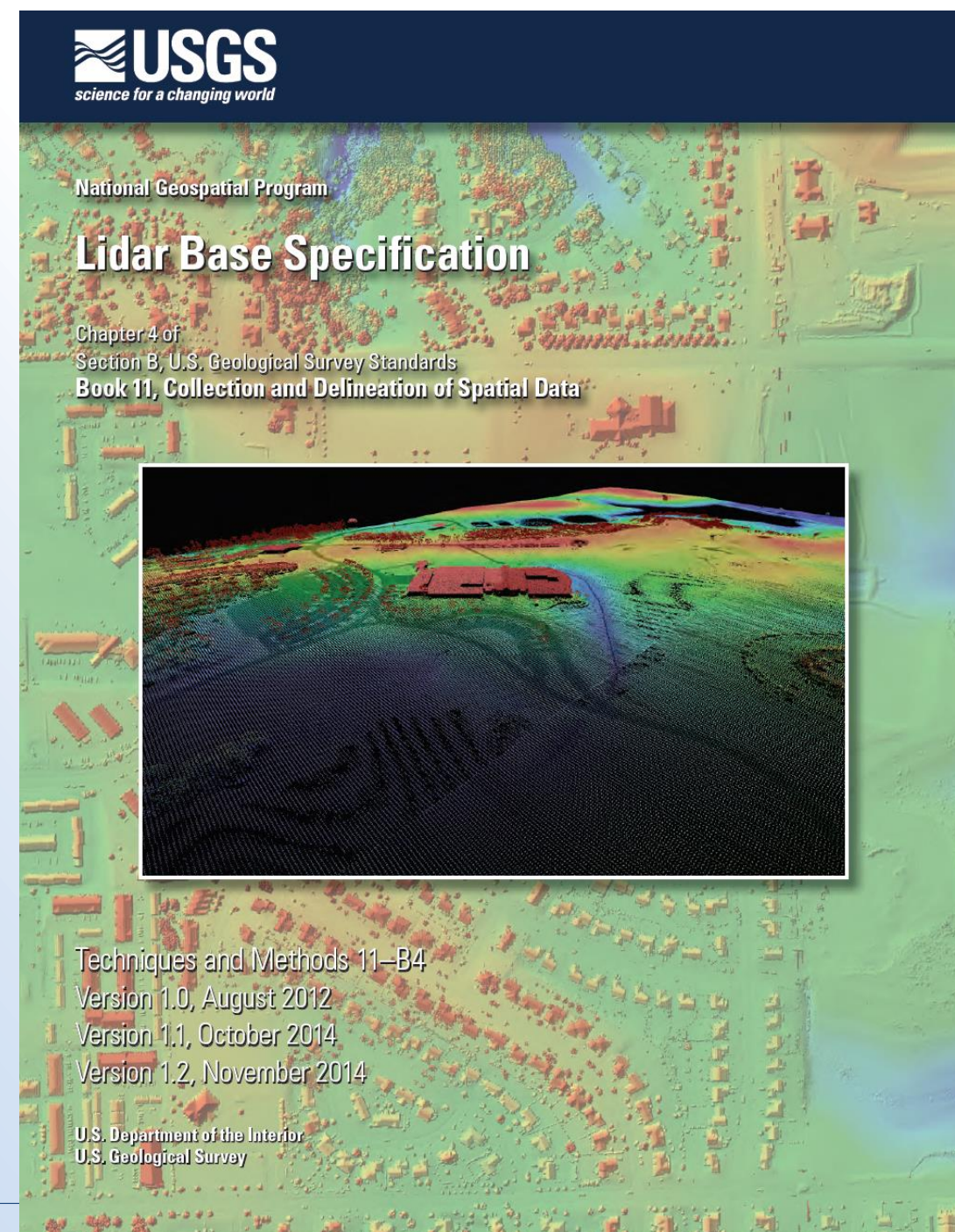
LiDAR Project Status and Overview

Thom S. Salter, CP, PSM
VP, Mapping and Photogrammetry



LiDAR Project Overview

- Task 1: Survey Planning
- Task 2: Ground Control Survey
- Task 3: Data Acquisition
- Task 4: Data Processing
- Task 5: Classification
- Task 6: Formal Quality Control
 - Accuracy Verification
- Task 7: Terrain Mapping
 - DEM/DSM/Contours
- Task 8: Final Quality Control and Delivery



LiDAR Project Overview – Current Status

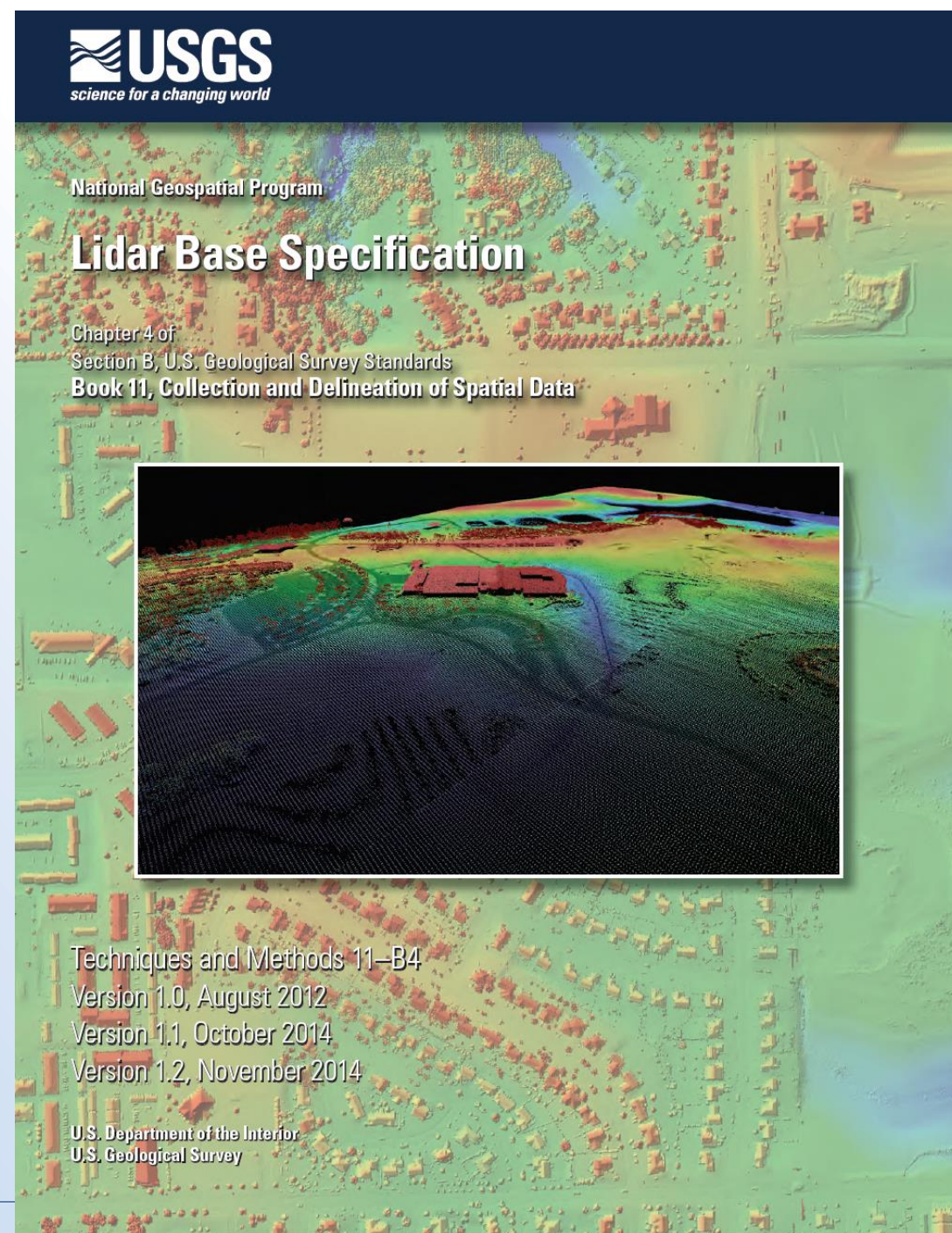
- Task 1: Survey Planning - **COMPLETED**
- Task 2: Ground Control Survey – **IN PROGRESS**
- Task 3: Data Acquisition – **IN PROGRESS**
- Task 4: Data Processing – **PENDING**
- Task 5: Classification
- Task 6: Formal Quality Control
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Task 1: Survey Planning

1.a. Survey Requirements

- USGS QL2:
 - Nominal 0.7m post spacing
 - Equivalent to min NPD 2 ppm
 - Vertical Accuracy 10cm RMSE_z



Task 1: Survey Planning

▪ 1.a. Survey Requirements

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▪ 1.b. Equipment

- LiDAR Sensor – Optech ALTM Galaxy
 - Latest and greatest
- Airframe – Piper Aztec
 - Twin engine
- Trimble R8
 - GNSS Reference Station



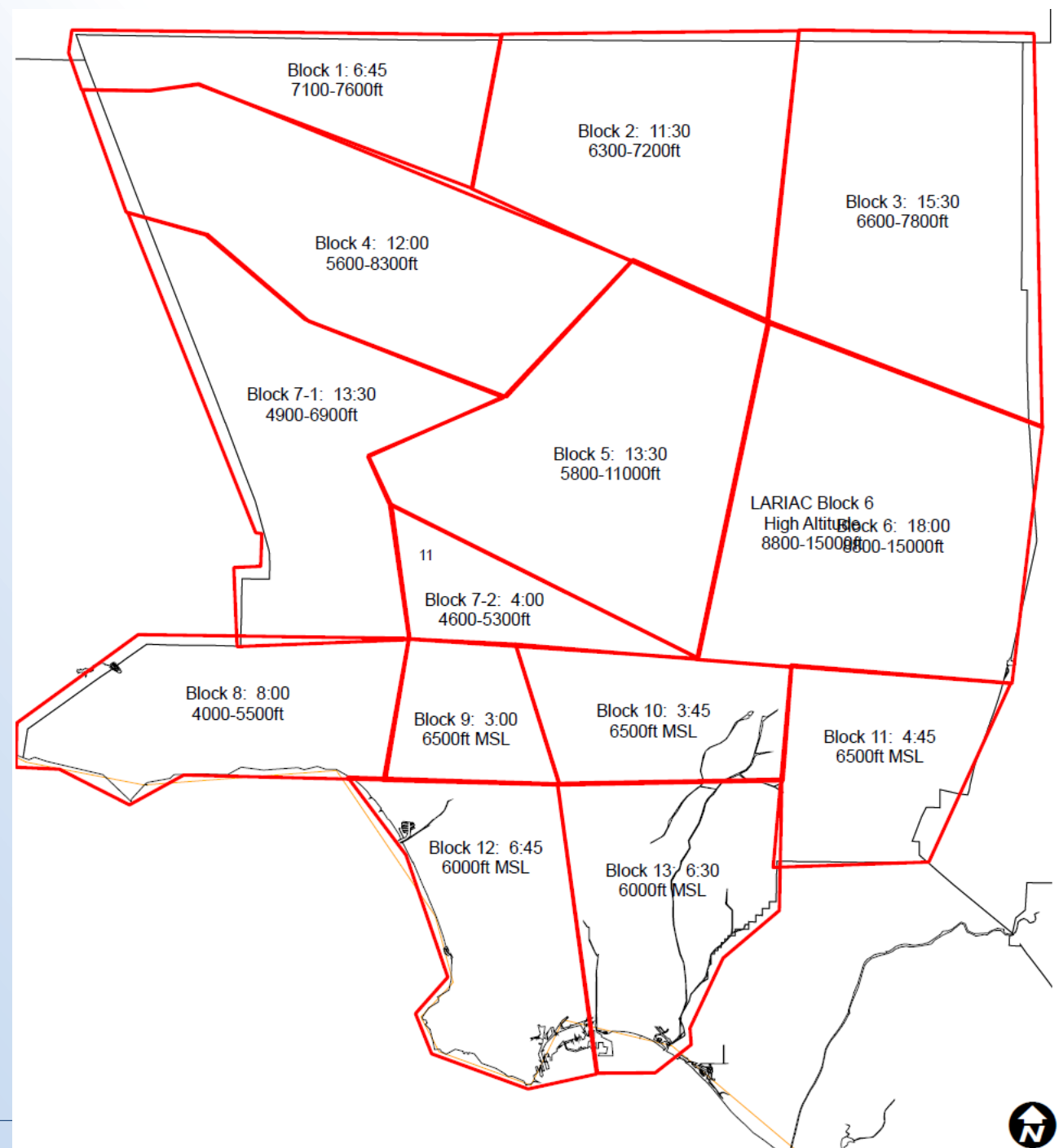
Sensor: Optech ALTM Galaxy

- Major Capital Investment
 - LiDAR Processing Capability and Capacity Ramp Up
- Latest Technology
 - Optech PulseTrak
 - 550kHz max PRF/1400 scanner product
 - S/N Ratio independent of PRF
 - Most accurate wide-area LiDAR datasets
 - Enables collection of dense LiDAR point clouds



Task 1.c: Survey Layout

- Flight Plan
 - Block Layout
 - Accounts for geometry, geography, ATC, and potential environmental conditions
 - Operational Configuration(s)
- Ground Plan
 - Production Control Points
 - GNSS Reference Station



Operational Configurations

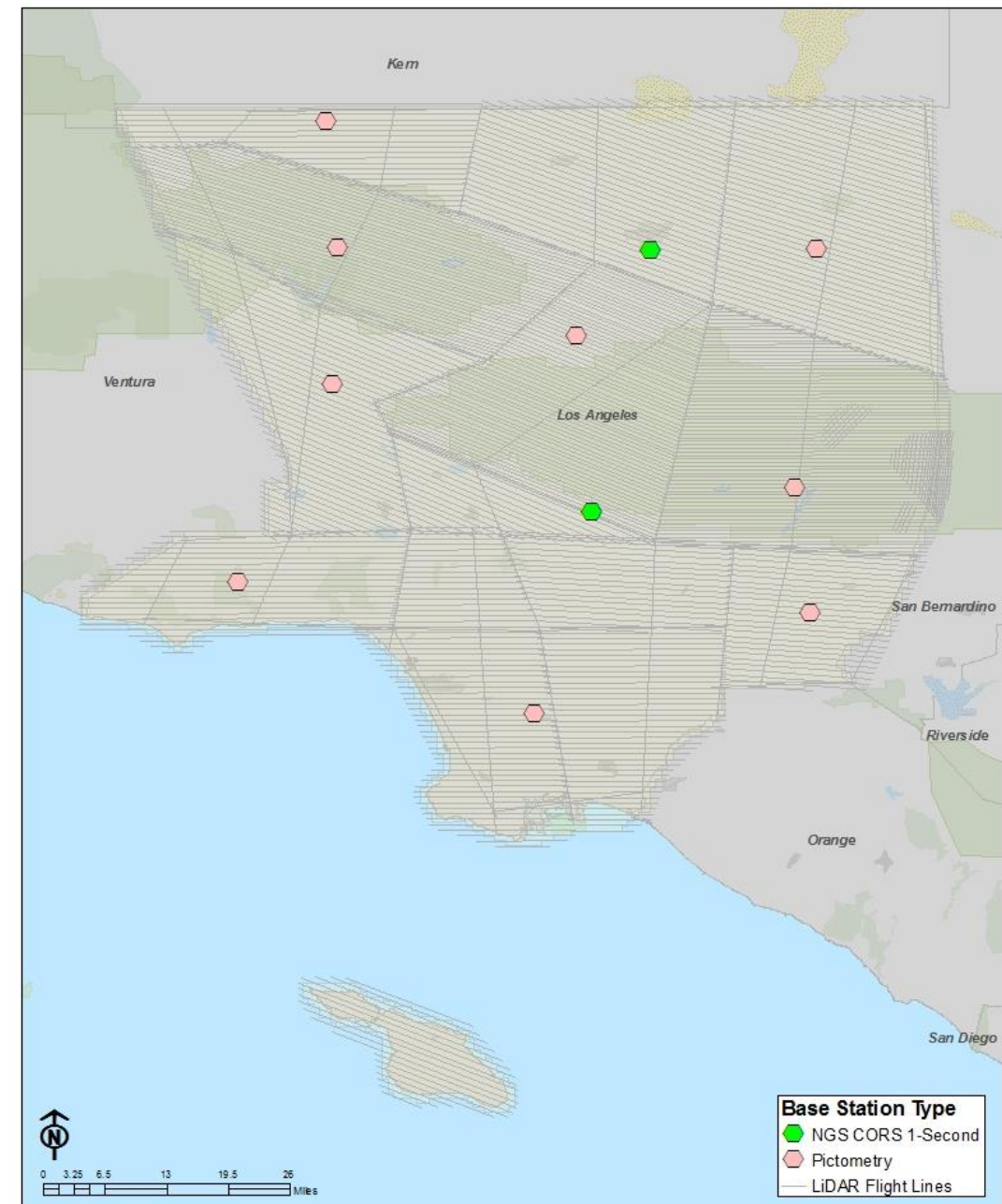
- Flight Plan
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Parameter	Flat (Rel)	National Forest
Altitude	1800	1200
PRF (kHz)	300	250
FOV (+/-)	20 degrees	
Scan frequency (Hz)	60	
Raw swath (m)	1330	890
Overlap	30%	
Down track (m)	0.52.	0.53
Cross track (m)	0.67	0.52
NPD	2.8	3.5



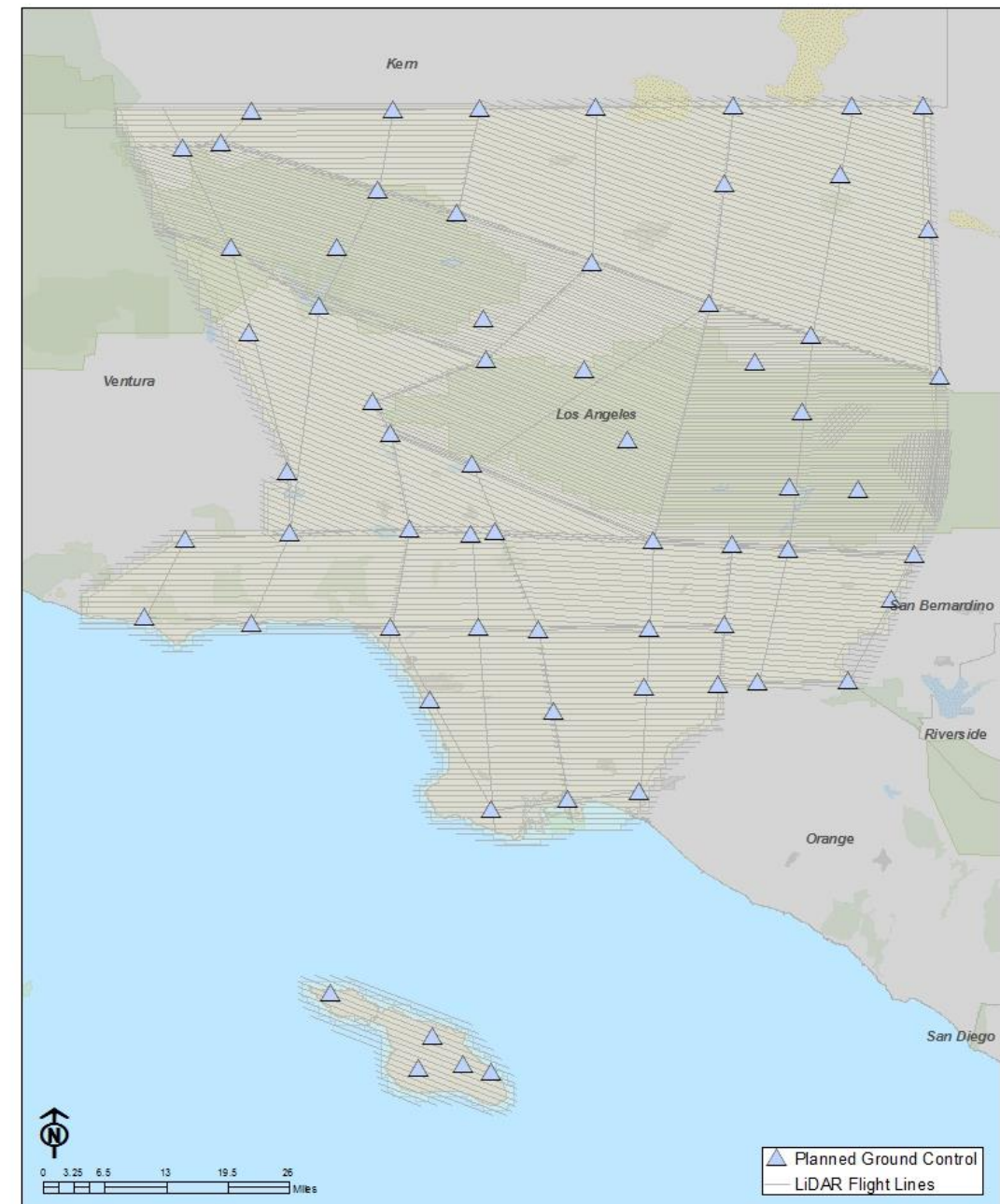
Task 1.c: Survey Layout

- **GNSS Reference Stations**
 - NGS CORS 1-second station
 - Catalina (not pictured)
 - Trimble R8 receivers
 - Daily OPUS solution for station coordinates
- **Production Control Points**
 - Planned between flight blocks
- **Control Line Grid**
 - Ensure mission-mission alignment



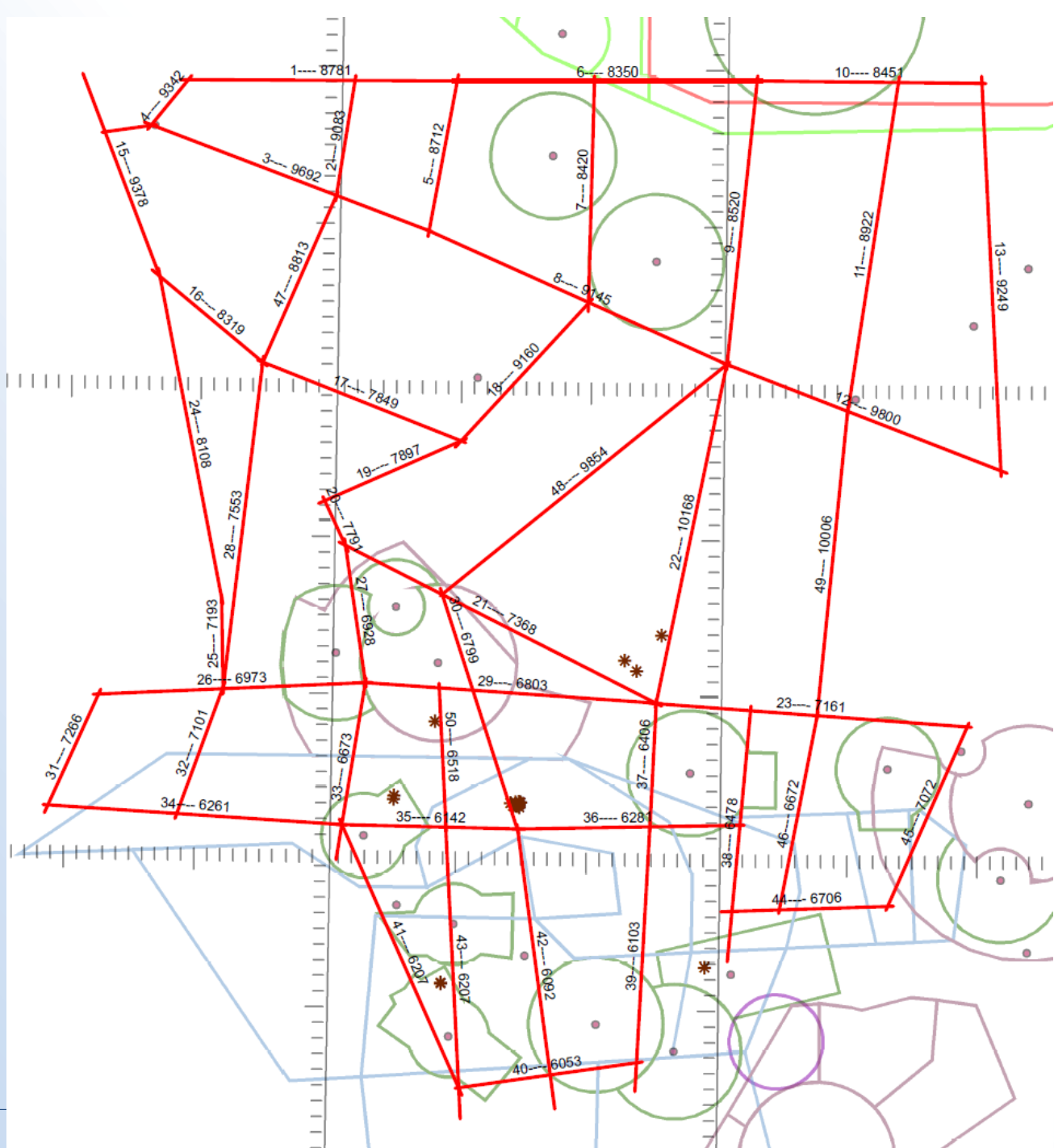
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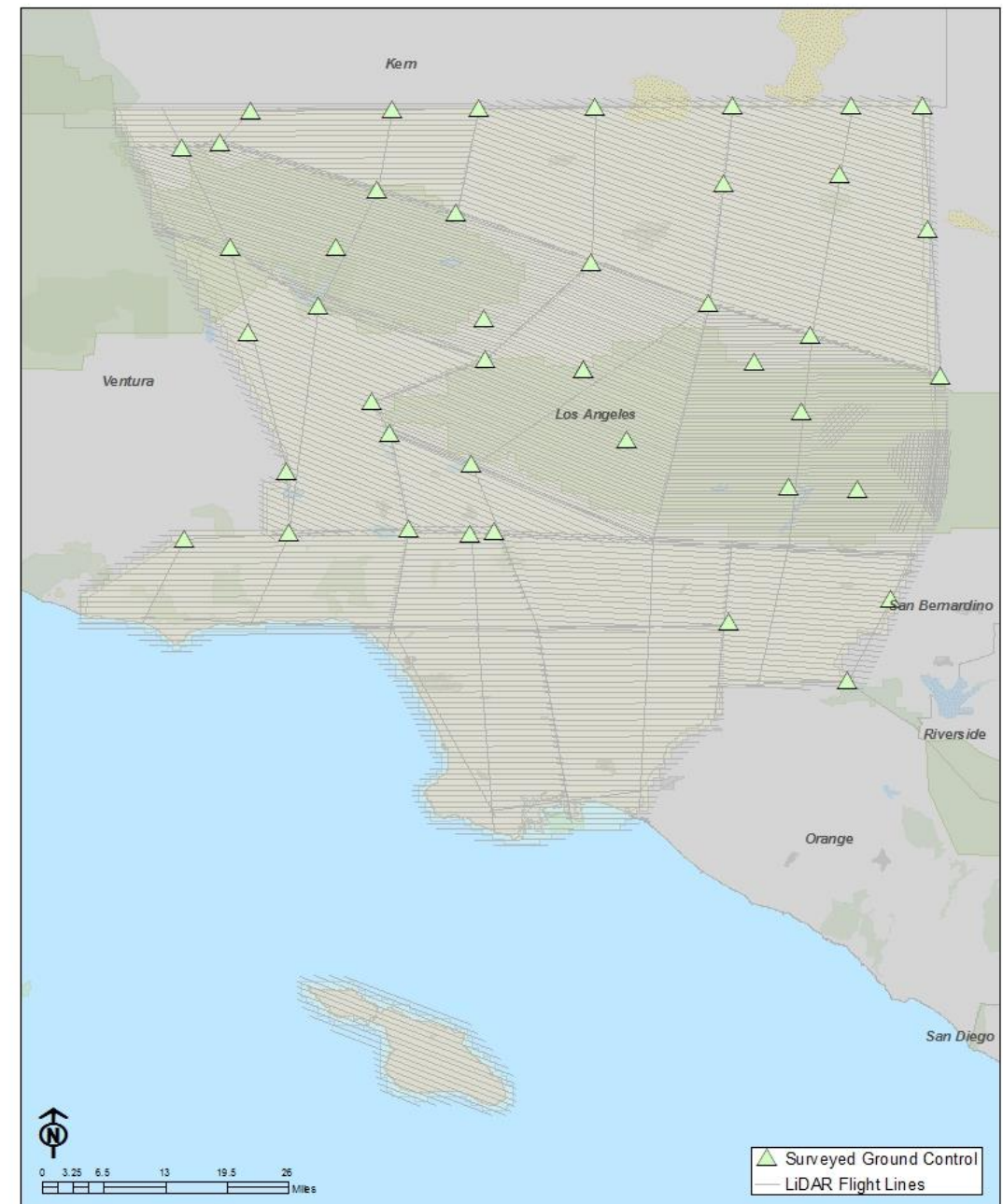
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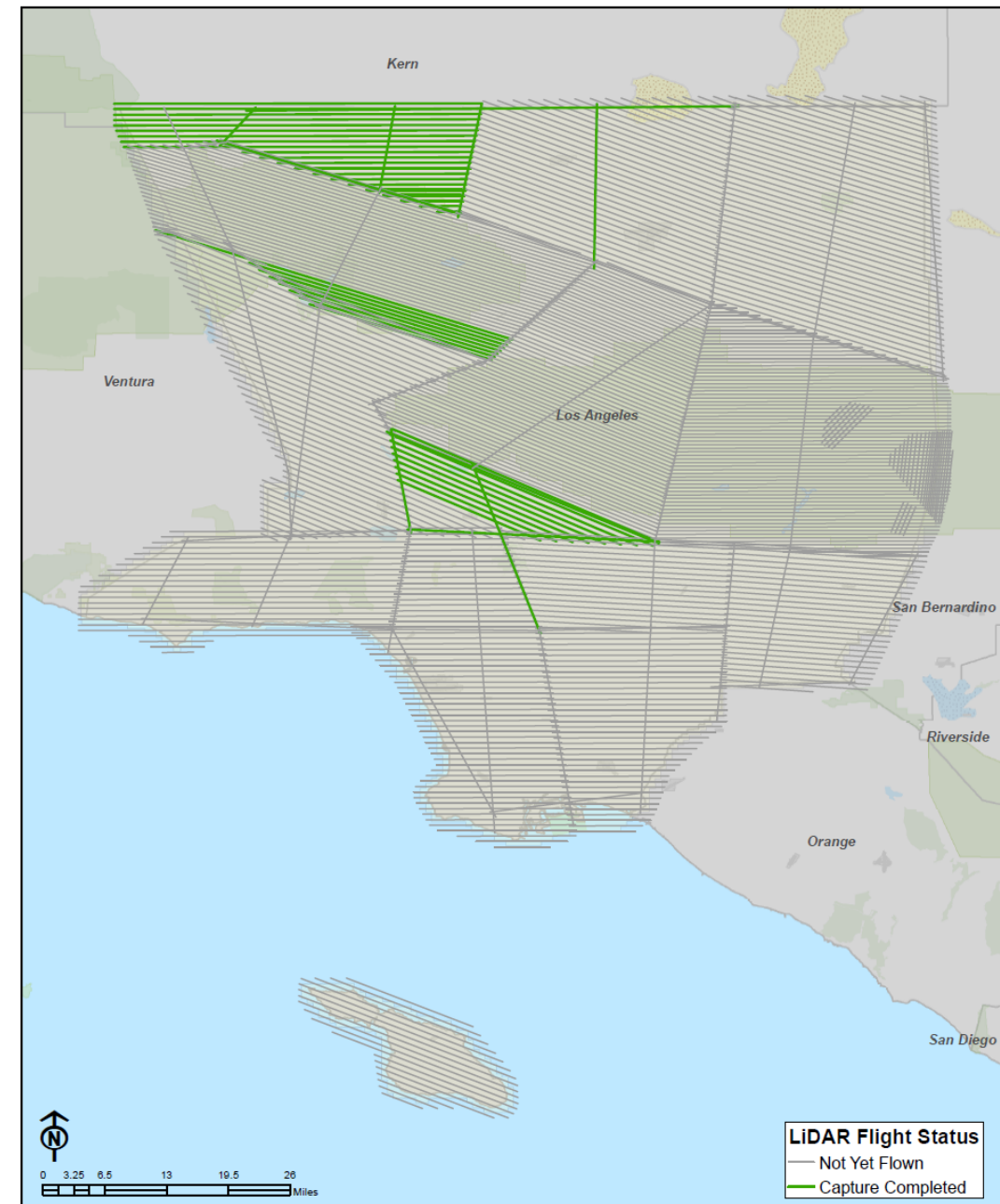
In Progress Tasks

- **Task 2: Ground Survey**
 - Production Control Points
 - Approx. 65% surveyed
- **Task 3: LiDAR Data Acquisition**
 - Mobilization on 9/24
 - Field Crew on Site
 - System:
 - Cable replacement yesterday – standing by for flight today



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Pending Tasks

■ Task 4: Data Processing

- Applanix PosPac
 - Trajectory Post Processing
- Optech LMS
 - Laser Mapping Suite
 - Calibration and Matching

■ Task 5: Classification

- GeoCue
 - Manage Classification Process through TerraSolid
- LP360
 - Quality Review and Reporting

The screenshot displays a software interface with a grid of work sheets (WS-03 to WS-98) overlaid on a map. A checklist window is open on the right, listing tasks such as Initialization, Set Population Parameters, and Final QC.

Step	Name	?	Count	
1	Initialization		1	Ini
2	Set Population Parameters		1	Al
3	Populate		1	St
4	Initial QC		0	Pr
5	Assign Macro		0	Al
6	Run Macro		0	Al
7	Ground Editing		0	Ec
8	Ground Review		0	Ec
9	Ground Re-Work		0	Ec
10	Features/Contours Editing		0	Ec
11	Features/Contours Review		0	Ec
12	Features/Contours Re-Work		0	Ec
13	USGS QL2 Verification		0	Pr
14	Final QC		0	Pr
15	Ship to QA/QC Contractor		0	St

■ Formal Project Plan Document

- Week of 10/19
- Internal Schedule
 - Finalization underway



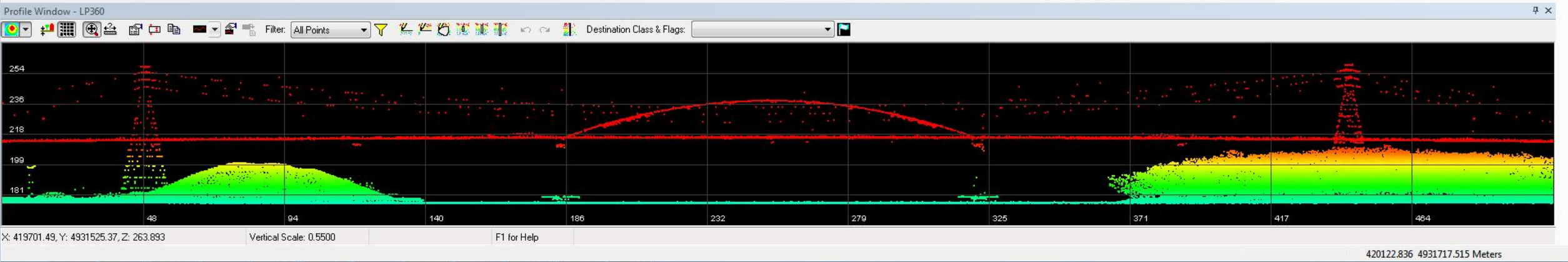
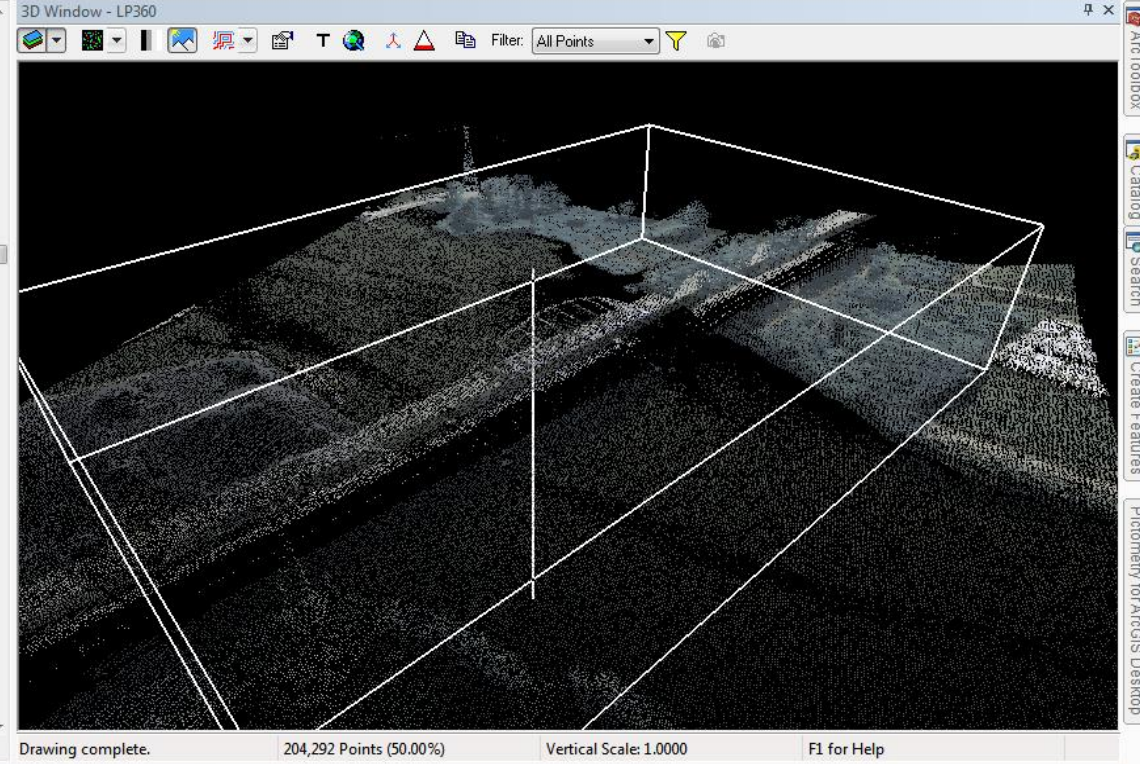
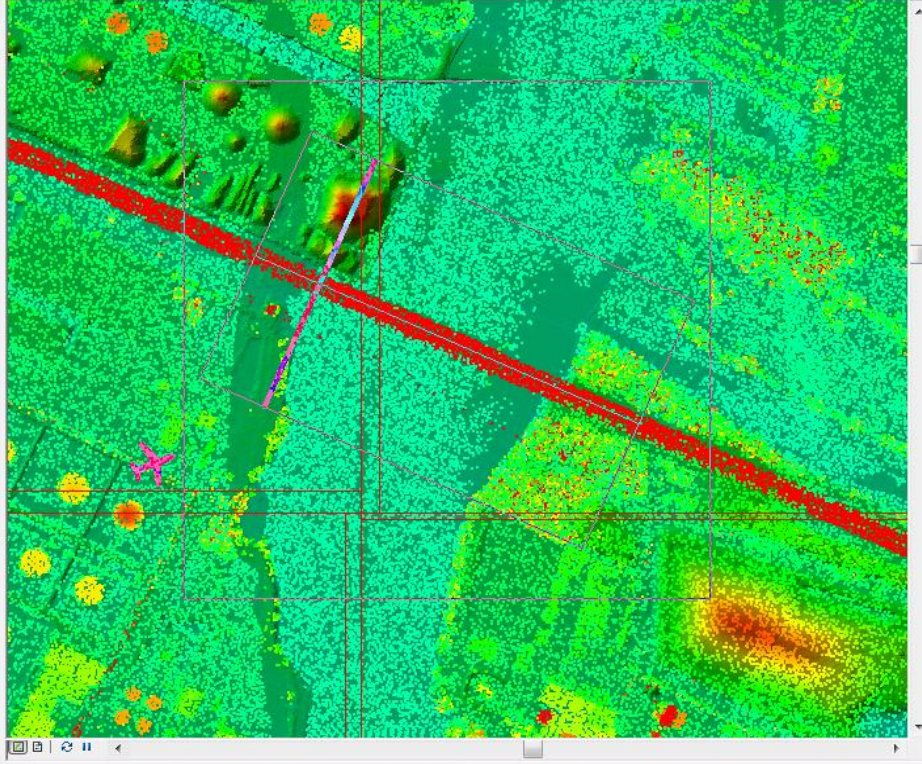
Table of Contents

Layers

- dz_0_04_dz.tif
 - RGB
 - Red: Band_1
 - Green: Band_2
 - Blue: Band_3
- density_density.tif
 - RGB
 - Red: Band_1
 - Green: Band_2
 - Blue: Band_3
- filestats
- LAS Layer_1
 - Elevation

Classification

- <all other values>
- Ground
- Low Vegetation
- Medium Vegetation
- High Vegetation
- Building
- Low Point (noise)
- Reserved (Model keypoint)
- Water
- Rail
- Road Surface



Thank you!

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