

March 30, 2011

Post Flight Report
PSI Project 7556-005
Charles (includes Quincy), MA LiDAR

FEMA Task Order Number: HSFEHQ-10-J0005

Client: STARR (Project Number: 40000058)

Project Name: Charles - Quincy

Attached Reference files: 7556-005 Charles-Quincy_MA_Background
7556-005_Bed-Charles_MA_Background.ZIP
7556-005_Orh-Charles_MA_Background.ZIP
7556-005_1B9-Narragansett_MA_Background.ZIP
7556-005_SFZ-Blackstone_MA_Background.ZIP
7556-005_OWD-Quincy_MA_Background.ZIP

General Specifications: 1-meter nominal spacing LiDAR Acquisition and processing with a 24.5 cm vertical accuracy at 95% confidence level.

Acquisition Dates: LiDAR data for the Charles Quincy area was acquired over several different dates and encompassed five (5) sub-block areas. Data for these areas are included in the background files listed above and a part of this report.

Equipment Used: The data was collected with Optech Gemini LiDAR systems, Serial Numbers 246 and 247, Base GPS Receiver used was a Trimble 5700 collecting data at half second intervals. The aircraft used were Cessna 206 models, tail numbers N2448G and N7266Z. The pilots were Cameron Caldwell, Mark Young and Nick Greenwell and the Operators were Jeremy Berry and Nathan Galieti. This information is also included in the background files attached and included as a part of this report.

Project: The project was flown at an altitude of 5,000 feet above ground and at a planned average speed of 116 knots with a field of view of 36 degrees. The scan rates used was 30.1 Hz with a Laser Pulse Rate of 71,429 Hz with Multi-Pulse enabled. The full swath width was 989.18 meters with a planned sidelap of 30%. The point spacing was <1 meter with a NADIR point density of 1.2 points per square meter and an average point density of 3.03 points per square meter. The area covered consisted of 285.53 square miles.

GPS Base Station / Monument: The Base Stations used are included in the area reports attached.

Control: 16 control points were collected as part of the project and used to calibrate the project data, remove any bias and verify accuracy. This data is compared to the collected model and results indicated below. This control data is included in the attached .ZIP file under “Control”.

Flight Files: The planned flight files are included as reference in the attached .ZIP file under “Flight Files” for each of the sub-blocks.

Flight Logs: Flight Logs used by the crew are included in the attached .ZIP file under “Flight Logs” for each sub-block and include the following type information:

- job #/name
- block or AOI
- date (s) flown
- aircraft tail #
- lines - #
- lines - direction
- lines – altitude
- lines – speed
- conditions
- comments
- pilot name
- operator name
- AGC switch
- GPS base station used

Processing Summary: Data is included in the attached .ZIP file under “Processing Summary” for each sub-block and includes the GPS / IMU processing summary data including at a minimum:

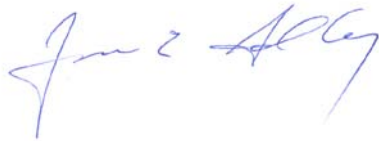
- Processing Logs
- Message Logs
- Extract Logs
- Laser configuration files for each lift
- Max Horizontal GPS Variance (cm)
- Max Vertical GPS Variance (cm)
- Notes on GPS quality (High, Good, etc.)
- GPS separation plot
- GPS altitude plot
- PDOP plot
- Plot of GPS distance from base station/s

Project Coverage: within the attached .ZIP file in the “Project Coverage” directory is the overall boundary Shape File and the as flown trajectory Shape Files which include the project calibration flight lines (cross flights) for each sub-block.

Accuracy: The LiDAR data was tested against the Control check points indicated above and the results are included in the “Accuracy Results” directory in the attached .ZIP file. All control points in the Charles Quincy area and the surrounding project areas were used to generate the accuracy results.

The LiDAR data as collected tested at 0.095 (meters) fundamental vertical accuracy at 95% confidence level. Within the accuracies indicated in the specifications, as provided.

Sincerely,

A handwritten signature in blue ink, appearing to read "Forrest Godby". The signature is stylized with a large initial 'F' and a cursive 'G'.

Forrest Godby
Senior Project Manager / Flight Operations Manager