# **Vendor Submittal Verification**

LiDAR Data Submittal Requirements:

1. Descriptive Project Information
   1. Metadata process steps and FEMA Compliance Form
   2. Pre-flight operations report
   3. Post-flight report
      1. GPS Base Station Shapefile
      2. Project Coverage Shapefile
      3. As-Flown Trajectories and Calibration line Shapefiles
      4. Flight Logs
2. Survey Data
   1. Metadata and FEMA Compliance Form
   2. Ground Control
      1. Accuracy Report
      2. Image Chips and Survey Pictures
      3. Spatial Data (Shapefile, kml/kmz, and csv containing coordinates)
      4. Final Report and Final Coordinates
   3. FVA/CVA
      1. Accuracy Report
      2. Image Chips and Survey Pictures
      3. Spatial Data (Shapefile, kml/kmz, and csv containing coordinates)
      4. Final Report and Final Coordinates
      5. Vertical Accuracy Testing Results
3. Raw Point Cloud LiDAR
   1. All Returns Swath Data
      1. LAS v1.2 or v1.3 files
         1. No file greater than 2GB
      2. Swath Index Shapefile
         1. Includes Calibration and Cross-Ties
4. Post Processed LiDAR
   1. Bare-Earth Data
      1. Tiled LAS v1.2 or v1.3 files
      2. Tile Index Shapefile

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| LiDAR Submittal Checklist | | | | |
| Project Name: Racine County, Wisconsin | | | Date Delivered: 1/14/2014 | |
| Acquisition: | | | LiDAR: Quantum Spatial, Inc. | |
| Post Processing: | | | Breaklines: Y | Topographic Products: Y |
| Acquisition/Processing Point of Contact:  Name: James Young  Mailing Address: 4020 Technology Parkway, Sheboygan, WI  Phone Number: 920-457-3631  Email: jyoung@quantumspatial.com | | | Point of Contact:  Name: James Young  Mailing Address:4020 Technology Parkway Sheboygan, WI  Phone Number: 920-457-3631  Email: jyoung@quantumspatial.com | |
|  | | | | |
| Dataset | Included | Comments | | |
| **Descriptive Project Information** | | | | |
| Metadata | X |  | | |
| Compliance Form | X |  | | |
| Pre-Flight Report |  |  | | |
| Post Flight Report | X | -see LiDAR\_Report | | |
| GPS Base Station Shapefile | X | -see LiDAR\_Report\Appendix\Control\GPS\_Base | | |
| Project Coverage Shapefile |  | -see LiDAR\_Report\Appendix\Coverage\Project\_Shape\_Coverage | | |
| As-Flown Trajectories | X | -see LiDAR\_Report\Appendix\Coverage\Trajectories | | |
| Final Flight Lines | X | -see LiDAR\_Report\Appendix\Coverage\Flightlines | | |
| Flight Logs | X | -see LiDAR\_Report\Appendix\Coverage\Flightlogs | | |
| **Survey Data** | | | | |
| Metadata | X | -see Metadata | | |
| Compliance Form |  |  | | |
| Ground Control | | | | |
| Accuracy Report | X | -see GPS Report | | |
| Image Chips |  |  | | |
| Survey Pictures |  |  | | |
| Shapefile and Final Coords |  | -see GPS Report | | |
| Final Report | X | -see GPS Report | | |
| FVA/CVA | | | | |
| Accuracy Report | X | -see Vertical\_Accuracy | | |
| Image Chips |  |  | | |
| Survey Pictures |  |  | | |
| Shapefile and Final Coords |  | -see Vertical\_Accuracy | | |
| Final Report | X | -see Vertical\_Accuracy | | |
| Testing Results | X | -see Vertical\_Accuracy | | |
| **Raw Point Cloud LiDAR** | | | | |
| LAS v1.2 or 1.3 Files < 2GB | X | LAS 1.2 | | |
| Swath Index | X | -see Breaklines | | |
| **Post Processed LiDAR** | | | | |
| LAS Files v1.2 or 1.3 | X | LAS 1.2 | | |
| LAS Tile Index | X | -see Breaklines | | |
| Notes: Survey Field Notes in GPS\_Report folder | | | | |

**Pre-Flight Operations Report**

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| --- | --- | --- | --- |
| Pre-Flight Operations Checklist | | | |
| Project: Racine County, Wisconsin | Vendor: Quantum Spatial, Inc. | | |
| Date Received: 1/14/2014 | Date Reviewed: mm/dd/yyyy | | |
|  | | | |
| Checklist | | Included | Comments |
| Planned flight lines (sufficient coverage, spacing, length) | |  |  |
| Planned flight line Shapefile | |  |  |
| Planned GPS stations | |  |  |
| Planned Ground Control | |  |  |
| Calibration Plans | |  |  |
| Vendor Quality Procedures | |  |  |
| LiDAR sensor scan set – scan angle, sidelap, design pulse | |  |  |
| Aircraft utilizes ABGPS | |  |  |
| Sensor supports project design pulse density | |  |  |
| Type of aircraft – supports project design parameters | |  |  |
| Reflight procedure – tracking, documenting, processing | |  |  |
| Project design supports accuracy requirements of project | |  |  |
| Project design accounts for land cover and terrain types | |  |  |
| Notes: | | | |

**Post-Flight Operations Report**

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| --- | --- | --- | --- |
| Post Flight Report Checklist | | | |
| Project: Racine County, Wisconsin | Vendor: Aerometric, Inc | | |
| Date Submitted: 1/1/2014 | Date Reviewed: mm/dd/yyyy | | |
|  | | | |
| Checklist | | Included | Comments |
| **GPS Base Station Information** | |  |  |
| Name | | X |  |
| Latitude/Longitude Coordinates | | X |  |
| Heights | | X |  |
| Maximum PDOP description in text | | X |  |
| Location Map | | X |  |
| Correct Shapefile | | X |  |
| **GPS/IMU** | |  |  |
| GPS quality - Max horizontal variance (cm) | | X |  |
| GPS quality - Max vertical variance (cm) | | X |  |
| Description of GPS Quality in text | | X |  |
| GPS Separation Plot | | X |  |
| GPS Altitude Plot | | X |  |
| PDOP Plot | | X |  |
| GPS Distance From Base Stations Plot | | X |  |
| **Coverage** | |  |  |
| Verification of Area of Interest Coverage | | X |  |
| Correct Shapefile of coverage area | | X |  |
| **Flights** | |  |  |
| Final Flight Lines Shape File | | X |  |
| Calibration Lines Shape File | | X |  |
| As-Flown Trajectories Shape File | | X |  |
| List of settings for flights/LiDAR | | X |  |
| **Control** | |  |  |
| Ground Control and Base Station Layout | | X |  |
| Ground Control point Shapefile | | X |  |
| **Calibration** | |  |  |
| Description of calibration process in text | | X |  |
| Description of actual issues found/corrected in dataset | | X |  |
| **Data Verification and Quality Control** | |  |  |
| Verification Process Documented | | X |  |
| Quality Control Procedures Documented | | X |  |
| Notes: | | | |

**Flight Logs**

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| Flight Log Checklist | | | |
| Project: Racine County, Wisconsin | Vendor: Quantum Spatial, Inc. | | |
| Date Received: 03/19/2010 | Date Reviewed:12/14/2013 | | |
|  | | | |
| Checklist | | Included | Comments |
| Job Number and Name | | X |  |
| Lift Number | | X |  |
| Block or Area of Interest Designator | | X |  |
| Date | | X |  |
| Aircraft Type | | X |  |
| Aircraft Tail Number | | X |  |
| Pilot Name | | X |  |
| Operator Name | | X |  |
| Airport of Operations | | X |  |
| GPS Base Station Names | |  | Not Used |
| Flight Line Number | | X |  |
| Flight Line Direction | | X |  |
| Flight Line Start | | X |  |
| Flight Line Stop | | X |  |
| Flight Line Altitude | | X |  |
| Flight Line Scan Angle | | X |  |
| Flight Line Scan Rate | | X |  |
| Flight Line Speed | | X |  |
| Flight Line Conditions | | X |  |
| Flight Line Comments | | X |  |
| AGC Switch Settings | | X |  |
| Laser Pulse Rate Settings | | X |  |
| Mirror Rate Settings | | X |  |
| Field of View Settings | | X |  |
| Settings Comments | | X |  |
| Notes:  Wisconsin Continuously Operating Reference Stations (WISCORS) were used for base stations. | | | |