



Custom Drone Training & Consultation- Seamon Whiteside

Basemap Consulting conducted an in-person consultation with Seamon Whiteside at their **Greenville office on January 27 & 28**. This report outlines our recommendations for optimizing drone-based data collection, processing, and deliverables.

All collected LiDAR data has been uploaded and can be accessed via **Stitch3D** at the following link: <https://app.stitch3d.io/file/679cf42a210b698c333c2469>

Collection

To optimize efficiency and accuracy, I recommend the following approach:

- **Equipment:** Each survey truck should have a **DJI Mavic 3 Enterprise (M3E)** for site documentation and preliminary mapping, utilizing the **South Carolina NTRIP Network** for RTK corrections.
- LiDAR Drone- DJI M350
 - https://e38surveysolutions.com/?sca_ref=5733959.LDOeHmPVdy
 - M350 RTK 2 Year Worry Free Bundle - \$12,559.00 = tax
 - Six Additional Batteries - \$4,200 + tax
- **LiDAR Capabilities:** For projects requiring detailed elevation data, acquire a **DJI M300/M350 with a RESEPI LiDAR system** (pricing and options below). Pair this with **two Emlid RS3 units** for ground control.
 - LiDAR Sensor Options
 - RESEPI Ultra Lite (no camera, limited range)
 - \$18,800 + tax
 - RESEPI Lite M2X with 61 megapixel Camera (can fly 300+ feet)
 - \$44,900 + tax
 - RESEPI Echo One (Fully American, can fly 300+ feet)
 - Payload - \$55,500 (no camera)
 - Payload with Sony Camera - \$55,500 + \$10,625
- Dual Emlids will allow for use on a network or without internet.

- <https://e38surveysolutions.com/collections/emlid-reach-rs3/products/emlid-reach-rs3-base-rover-essentials?variant=44008648704227>
 - **Workflow:**
 - Deploy the drone to the site **before** the survey crew is scheduled.
 - Generate initial orthophotos and preliminary linework.
 - Provide this data to the field crew to **fill in gaps** and complete the boundary survey.
 - **Usage Recommendations:**
 - **Orthophotos** should be standard for all projects.
 - **LiDAR** should be used for projects where exact elevation details are in the scope.
 - **Subconsultant Role:** Until SW acquires their own LiDAR data, Basemap Consulting will fly and process LiDAR data and align to SW Control as needed.
 - Pricing (includes processing)
 - 100 acres or less \$5,000
 - 200-\$500 acres \$7,500-\$9,500
 - 500+ Custom per project
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Data Processing

For the first **3-6 months**, I recommend partnering with **Basemap Consulting** to ensure smooth data processing and quality control:

- **Processing Assistance:** Basemap Consulting can align and reproject data to ground control in processing software to a **LAS/LAZ file to be used by SW in their software**.
 - **Software Recommendations:**
 - **DroneDeploy** for photogrammetry processing.
 - **Civil3D** for final deliverables.
 - **Global Mapper Pro** for converting and editing.
 - **Stitch3D** for sharing and visualizing data.
 - **Virtual Surveyor** for 3D drafting.
 - **Implementation Strategy:** Start with **M3E and DroneDeploy**, then integrate LiDAR workflows as needed and as budget allows.
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Deliverables

- **Final output should include:**
 - **LAS/LAZ files** for LiDAR deliverables.
 - **Orthophotos** for all projects.
 - **Preliminary linework** for crews to refine in the field.
 - **Data alignment:** Ensure all deliverables are georeferenced and aligned to project control for seamless integration with CAD/GIS workflows.
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Next Steps

1. **Acquire M3Es for each truck** and start DroneDeploy workflows.
 2. **Evaluate and purchase LiDAR system** (RESEPI + M300/M350 + Emlid RS3s).
 3. **Deploy new workflow strategy** (pre-drone site visits, preliminary drafting, crew refinement).
 4. **Engage Basemap Consulting for processing oversight** for the initial 3-6 months.
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This approach will improve efficiency, reduce time on-site, and enhance data quality, ensuring Seamon Whiteside stays at the forefront of drone-enabled surveying solutions.

Thank you for partnering with us, and we look forward to working together.

Prepared by: Basemap Consulting