Town of Mashpee
Digital Imagery
Date of Flight: 4/30/2007
Company: EarthData

Standards, equipment, deliverables and procedures

- **ISTAR® Processing Technology** – EarthData offers the first proven system for direct-to-digital mapping. The processing of ADS40 data occurs in a parallel processing system which bypasses the need for film development and scanning and combines advanced processing technology with a highly automated workflow to produce robust surface models and orthorectified imagery in a fraction of the time previously required.

- **Multiple Renditions of the Digital Imagery** – The ADS40 digital sensor acquires aerial imagery at a greater dynamic range than comparable film cameras and collects four simultaneous color bands for red, green, blue, and near infrared. Coupled with our exclusive ISTAR® processing system, the town could further maximize its investment in the range of spectral products available from a single flight. For example, digital data developed for the town could be delivered in both natural-color and false-color-infrared versions. Infrared data will go a long way to serve the town's users in environmental assessment programs, while natural-color imagery offers data commonly used for planning, tax assessment, and other municipal information management applications.

- **Collaborative Cost Sharing Using Strategic Partnerships** – Driven by an ever present desire to bring maximum value to our customers, EarthData is working along with federal partners at Camp Edwards to offer a unique acquisition partnership that will enable the Town of Mashpee to be included in an expected spring 2007 over flight. This kind of private, federal, and municipal collaboration will allow the town to gain access to new 6" digital orthophotography that otherwise might not have been previously possible given limited available funding. While certain terms and conditions may come to exist, both EarthData and staff at Camp Edwards hope this relationship can serve as a model foundation for other communities that adjoin other National Guard installations to maximize taxpayers' dollars and assist in regional cooperation.

The following list summarizes our understanding of the scope of the project for the Town of Mashpee and provides the basis for the enclosed cost proposal:

Scope

1. ADS40 multispectral imagery will be collected during the following (likely) collection window – 4/1/2007 to 4/20/2007.

2. All data will be collected using Leica ADS40 sensor, inertial measurement unit (IMU), and airborne GPS.

3. A minimum of two photo-identifiable ground control points will be collected for each acquisition.

4. Preliminary flight plans will be submitted for approval by the town, and digital "as flown" flight plans will be submitted on project completion. *This is in addition to the eight control points which are likely to be collected within the Camp Edwards project area*

5. All data collected for each acquisition time period will be conducted within a contiguous acquisition window of no more than 21 days.

6. All data will be collected when skies are clear, free from smoke, haze, or fog. The ground will be free from standing flood waters and/or snow. Photography will be flown only during that portion of the day when the sun angle is a minimum of 35 degrees or more above the horizon. Aircraft altitude during collection will not exceed 5,000' AGL (above ground level).

7. All delivered data will be tiled according to a preapproved 3,000' x 3,000' tiling scheme at 100-scale grid and will be georeferenced to the Massachusetts State Plane Coordinate System (NAD83/1986 – NAVD 88), US Survey Feet. Delivered imagery will be to the full extents of each tile and will extend beyond the supplied town boundary a minimum of 200 feet..

8. The following orthophoto products will be produced:

    - 6" GSD (ground sample distance), orthorectified, radiometrically-corrected (color and tone balanced) natural-color orthophotos stored in 24-bit GeoTIFF format and MrSID format

9. Pilot Area: prior to the start of full orthophoto production, representative sample 24-bit orthophotos in GeoTIFF format as described above will be provided to the town for review and approval (for header content, format and radiometric balance).

10. Resulting imagery will have an RMSE value of 1' or better. The imagery will contain 0% cloud cover. No striping shall be visible in the delivered product at any scale. Acquisition scenes shall be "stitched together" using seam lines to minimize the aesthetic impact on the delivered product.

All data delivered to the Town of Mashpee will have complete project level FGDC-compliant metadata in XML format.

Delivery of all final products will be on an external portable hard drive or other mutually agreed upon delivery mechanism.

All data products will be delivered within 90 days of successful aerial imagery acquisition.

Deliverables

1) One set 6" GSD natural color 24-bit orthos cut to a 100-scale grid delivered in GeoTiff format on portable hard drive
2) One set of townwide 6" GSD natural color 24-bit orthos in MrSID format
3) Monthly status reports
4) Control report
5) Digital flight plan
6) FGDC-compliant project level metadata in XML format