



5 May, 2009

State of Idaho Technical Working Group

RE: Proposal for additional data options for 2009 Idaho NAIP

Introduction

This memorandum contains a preliminary proposal for additional data options for Idaho stemming from the 2009 NAIP coverage.

NAIP Update

As of 30 April, Surdex has the signed awards for its state project areas of Idaho, Utah, and New Mexico. Due to extensive snow pack (particularly in ID and UT), we anticipate being held back from acquiring some areas until the snow melts. The USDA will be working with at least the Forest Service to examine the treeline and snowline elevations and coordinating with Surdex to avoid problematic areas, including possibly extending the schedule in these areas. More information will be forth-coming as the acquisition window nears.

Our near-final flight plan for ID indicates that very few areas will be acquired at 2' resolution or better. We have elected to fly to maximum levels (up to ~35,000' MSL) to ensure that we can acquire the imagery in the shortest possible timeframe and thus meet government schedule expectations. Of course, in the southern and southeast portions we will be flying lower due to terrain elevations so as not to exceed 1-meter ground resolution in any area.

Specifics about the flight plan, all involving Cessna 441 (Conquest) aircraft (pressurized twin-turbines):

1. 60% forward lap and 35% sidelap to ensure stereoscopic coverage in rugged terrain and reduce occlusions/smearing.
2. ~12,500 exposure stations.
3. ~21,500 flight line miles (FLM).
4. Planned based on airspeed of ~290 knots.
5. ~65 flight hours (excluding turns, climb/descent), amounting to ~9 full days of flight.
6. Minimum 30° sun elevation angle.

Note that the 9 days of flight can be deceiving. History has shown that we often do not get full flight days and that the actual flight days is 2-3X this value – which accommodates weather interference and re-flights of small, disjoint areas toward the end of the project. To ensure delivery schedules are met, our Chief Pilot and project manager coordinates aircrews to prioritize large blocks of acquisition in order to process as many complete counties as possible.

We have not yet finalized our ground control plan, but expect we will establish 50-70 photo-identifiable points in the State to measure and include in our aerotriangulation. In 2008, we used ~45 points in the state of Minnesota and achieved an accuracy of ~2.5 meters (CE95) (validated independently by the Minnesota DOT). With the rugged terrain in Idaho, we expect that the attained accuracy will be a bit less than that we achieved in MN, but certainly within the specifications of ~6.0 meters (CE95).



Seamless Mosaic Options

Our proposal to the State includes the following:

1. Seamless, 4-band mosaic in UTM (~3,600 tiles).
2. Option for seamless, 4-band mosaic in the State TM (~3,600 tiles).
3. Options for separate color and/or CIR mosaics in the State TM, compressed or uncompressed.

Each mosaic will have the following general characteristics:

1. GeoTIFF format with separate TFW files.
2. GeoTIFF will be tiled TIFF (128x128) with internal pyramids.
3. Nominal 8,192 x 8,192 pixels in size (will include fractional tiles on the boundary).

The tile size of the State TM mosaic can be modified if required. Additionally, if the pyramids are not desired, they can be omitted for delivery.

We would expect the seamless mosaic could be delivered in November/December timeframe. If snow pack delays our acquisition season (and thus deliverables), this may be pushed out. If detailed inspection by the USDA reveals re-work after the mosaic delivery, Surdex will update the affected tiles of the seamless mosaic.

Pricing

The pricing breakout on this is:

Item	Price	Comments
Item 1: Seamless mosaic in UTM	\$35,000	
Item 2: Seamless 4-band mosaic in ID TM	\$40,000	
Item 2-A: separate color and CIR mosaics in ID TM (compressed or uncompressed)	\$40,000	Or additional \$10,000 to seamless 4-band in ID TM

To explain this further, should the State only want Item 2 (seamless 4-band in ID TM), the price would be \$40,000. Should the State want both the 4-band seamless mosaic and the separate color and CIR mosaics in ID TM, the total would be \$50,000 (Item 2 + Item 2-A).

The price of hard drives is included in the proposed pricing. Hard drives will become the property of the State after receipt.

All data will be delivered "as is". Surdex will entertain making corrections to the data at our discretion. All corrections made to resolve inspection call-outs by the USDA will be incorporated into updated (replacement) tiles at a later date. The State will retain rights to the data equal to that of Surdex Corporation.



Closing

Feel free to contact me or Mike McGuire of Ascent GIS at any time.

Craig W. Molander

A handwritten signature in blue ink that reads "Craig W. Molander".

Senior Vice President, Business Development

Telephone: 636-368-4420

Cell: 314-614-0200

E-mail: CraigM@Surdex.com

Facsimile: 636-537-9638

Surdex Corporation

520 Spirit of St. Louis Blvd.

Chesterfield, MO 63005