

Imagery TWG Meeting Notes
Idaho Water Center
February 3, 2010

Attendees:

Margie Wilkins, IDWR	Mike Bruse	Bruce Godfrey, UofI*
Gail Ewart, IGO	Scott Van Hoff, USGS	Dawn Leatham, Bonneville Co. *
Eric Rafn, IDWR	Jerry, Korol, NRCS	Keith Weber, ISU*
Diane McConnaughey, BLM	Dixie Booker-Lair, IDL*	Bob Smith, IGO*
Mike Hickok, Ada County	Mike McGuire, Assent GIS*	Laurie Ames, Nez Perce Tribe*
Donna Pitzer, USBOR	Todd Quast, Cassia Co.*	
Jim Szpara, DEQ	Walt Baluwa, Tax*	

*via telephone

DOQQ update:

- Toni Williams (FSA) told Margie last week (via email) that the DOQQs are expected to be delivered Mid-Feb/March
- single hard drive to State contact (Gail)
- Diane said that John Courtright (of her office) spoke with Bridgette Barlow of APFO. She suggested that DOQQs may be shipped as soon as this week. However; due to the system upgrades and maintenance that's been occurring at USDA/APFO/FSA, QC/QA may not be as thorough as expected
- Mike reported that some contractors are starting to ship some states' DOQQs already (ahead of schedule)
- There was a concern by those present of delivering the DOQQs without adequate QC/QA review
- Margie will let partners know via email when we have them in hand

Compressed County Mosaics (CCM) sharing:

- Initially, the partnership agreed that the CCMs would only be available to partners. Non-partners would need to wait for public availability through INSIDE Idaho (one of the perks of being a partner)
- Currently, NRCS offers the CCMs for download through the Geospatial Data Gateway (<http://datagateway.nrcs.usda.gov/>)
- Margie wanted clarification from partners that it was okay to refer non-partners requesting the CCMs to NRCS' Geospatial Data Gateway (<http://datagateway.nrcs.usda.gov/>)
- Partners agreed that it was okay to refer non-partners to NRCS' Geospatial Data Gateway
- Margie also wanted clarification from partners that it was okay to share the CCMs with non-partners with whom they are closely working.
- Partners agreed that it was okay to share NAIP data with non-partners when working closely with non-partners
- Mike said NRCS did a systems upgrade and compared to last year and the year before it is more efficient. It is working very well.
- Gail asked if INSIDE Idaho's plans included making the CCMs available for download and/or as a map service.
 - Due to storage issues and since the CCMs are an interim product (even though new CCMs will be delivered to the partnership after all QC/QA is complete) the following will be available:
 - INSIDE Idaho will provide DOQQs as an image service
 - INSIDE Idaho will provide DOQQs as a map service using a fused cache
 - INSIDE Idaho will provide 100k tiles processed by IDWR for download (not sure yet if they will be 4-band .jpg2 or 3-band .sid)
 - USDA/APFO/FSA will provide CCMs (they already have the appropriate disclaimers for the interim product, etc.)

NAIP Imagery Services:

- Image Service (original data in geotiff format)
 - Will use State standard: IDTM83
 - Geotiff format

- Map Service (fused cache)
 - collection of pre-rendered map tiles that can be used for display of a map service
 - Tiling Scheme: settings used to build a map cache, including scale levels, point of origin, coordinate system and image format
 - Google/Bing/ArcGIS Online common attributes found in:
 - http://resources.esri.com/help/9.3/arcgisonline/about/Content/attributes_wm.htm
 - Amazon S3 is being used for mirroring data
 - Google/Bing/ESRI all use the same tiling themes
 - Scale levels
 - build different cache scales
 - zoom level standards used by Google maps/Bing Maps/ArcGIS Online
 - could reduce the number of zoom levels down to about 12 (from 19?). Would not have to include the global extent used by Bing, Google ESRI Online.
 - Tiles
 - There will be millions of tiles created
 - Coordinate System
 - used same as Google maps/Bing Maps/ArcGIS Online:
 - Web Mercator Auxiliary Sphere (WKID 102100)
 - Decimal degrees
 - projected on the fly when data is brought into ArcMap
 - Image Format Key points to consider - transparency? color richness? file size?
 - PNG8 - Use this format for overlay services that need to have a transparent background, such as roads and boundaries. PNG 8 creates tiles of very small size on disk with no loss of information. However, you should use a different PNG format if your map contains more than 256 colors. Imagery, hillshades, gradient fills, transparency, and the antialiasing caching option can easily push your map over 256 colors.
 - Bruce has done most of his stuff with PNG8. Bruce hasn't looked at color balance. Trade off of size and speed.
 - Image service would stream in
 - Default for vector data
 - No browser issues that Keith or Bruce are aware of
 - PNG24 - You can use this format for overlay services, such as roads and boundaries, that have more than 256 colors (if fewer than 256 colors, use PNG 8). Do not use PNG 24 if your tiles will be viewed in Internet Explorer version 6 or previous.
 - No transparency
 - Does not work in Internet Explorer 6
 - PNG32 - Use this format for overlay services, such as roads and boundaries that have more than 256 colors. This format creates larger tiles than PNG 24, but the tiles are fully supported in all browsers.
 - The files would be larger here
 - Not going to gain that much
 - JPEG - Use this format for base map services that have large color variation and do not need to have a transparent background. For example, raster imagery tends to work well with JPEG.
 - No transparency

- JPEG is a lossy image format. It attempts to selectively remove data without affecting the appearance of the image. This can cause very small tile sizes on disk, but if your map contains vector linework or labels, it may produce too much "noise" or blurry area around the lines. If this is the case, you can attempt to raise the Compression value from the default of 75. A higher value such as 90 may balance an acceptable quality of linework with the small tile size benefit of the JPEG.
- If you are using a JPG cache, it must be the bottom layer or it will obscure any layers beneath it. The JPG image format does not support transparency.
- Bruce and Keith may create an example of PNG8 and PNG24 options for review and comment
- Since Surdex mosaics the imagery into a statewide, seamless (i.e. color balanced) mosaic and then "cookie-cuts" out the DOQQs, Margie suggested that DOQQs would probably be limited to 256 colors making PNG8 the suitable choice. Added benefit of transparency option. Mike will verify with Surdex.

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Miscellaneous discussion:

- 100k tiles:
 - Purpose of the 100k tiles is compressed imagery for field use
 - IDWR is not sure what format the 100k tiles will be in
 - jpeg2000 compression allows for 4 bands
 - sid compression limited to 3 bands
 - LizardTech is coming out with a new version allowing sid compression with 4 bands
 - Summer 2010
 - 100k tiles will be made available for download from INSIDE Idaho but will not be incorporated into map service
 - 100k tiles will be in IDTM83
- Review of image services decisions:
 - Image Service: IDTM83
 - Map Services: PNG8, Web Mercator projection, Google/Bing/ArcGIS Online common attributes

NEXT MEETING MARCH 3RD