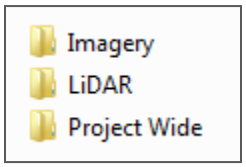
MSB LiDAR & Imagery Project (2011/2012) - File Management Schema

The Matanuska-Susitna Borough LiDAR & Imagery project produced a large number of datasets that are typically made available via portable hard drive. This document describes the folder structure by which the data is organized. Additional information about the project can be found on the project website: http://www.matsugov.us/it/2011-lidar-imagery-project.

The project is initially split into three categories



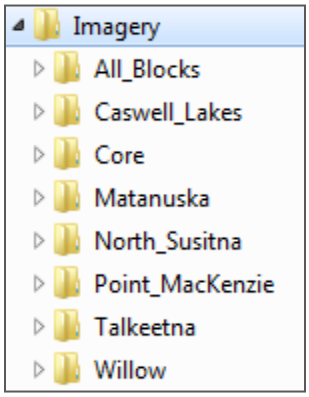
Imagery: This folder contains all products associated with the imagery portion of the project. Products are available as uncompressed tiff, compressed jpg2000 and MrSid2 formats.

LiDAR: This folder contains all products associated with the LiDAR portion of the project. These products include building footprints, contours, DEM, DSM, Hillshades, Hydro, Intensity Images, and Point Clouds.

Project Wide: This folder contains information associated with both the Imagery and LiDAR portions of the project. Examples include project boundary files, project documentation, project maps, project reports, and project survey reports.

Imagery Folder

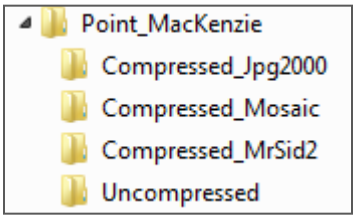
The imagery folder is first divided into eight sub-folders; an all blocks folder and then one for each individual block (see *Attachment A* for a map of all blocks).



All_Blocks: This folder contains data related to the imagery portion of the project that is not divided by individual blocks (i.e. regional areas). This includes project wide flightlines and photo center points.

Caswell Lakes, Core, Matanuska, North_Susitna, Point_MacKenzie, Talkeetna, and **Willow:** These folders all contain imagery for each of the 7 block areas.

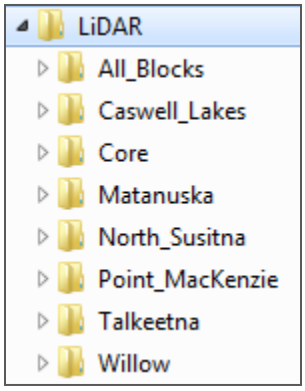
The block folders are divided into four folders. All data are further organized into 25 sq/km tiles (see *Attachment A* for a map).

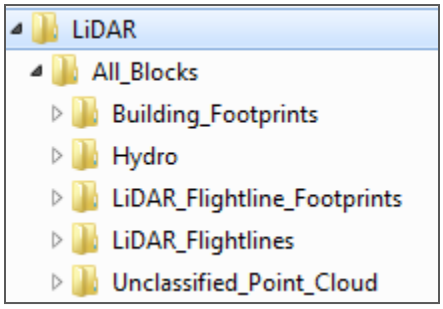


Compressed_Jpg2000: Imagery compressed into Jpg2000 format.
Compressed_Mosaic: These products have not yet been developed.
Compressed_MrSid2: Imagery compressed into MrSid2 format.
Uncompressed: Imagery in uncompressed tiff format.

LiDAR Folder

The LiDAR folder is first divided into eight sub-folders; an all blocks folder and then one for each individual block (see *Attachment A* for a map of all blocks).





All_Blocks:
Contains datasets related to the LiDAR portion of the project that are not organized by blocks. In other words these datasets cover the entire project area. More details about each dataset follows.

Building Footprints: Outlines of the bases of buildings over 400sq/ft in size to 97% accuracy. These are available in two formats, ESRI geodatabase feature class and shapefile. Smaller buildings may be included but at a lower accuracy rating.

Hydro: Single line streams (<100 ft in width), double line streams (>100 ft in width), and lakes. Double line and lake features contain z values and were used in the hydro flattening process. These datasets are available in two formats, ESRI geodatabase feature class and shapefile.

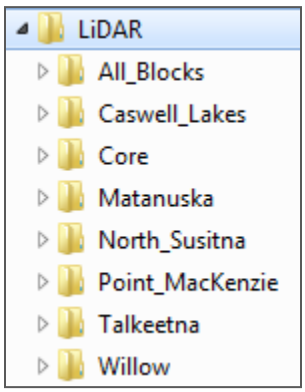
LiDAR Flightline Footprints: A graphic representation showing the area on the ground that each LIDAR flightline covered. These are available in two formats, ESRI geodatabase feature class and shapefile.

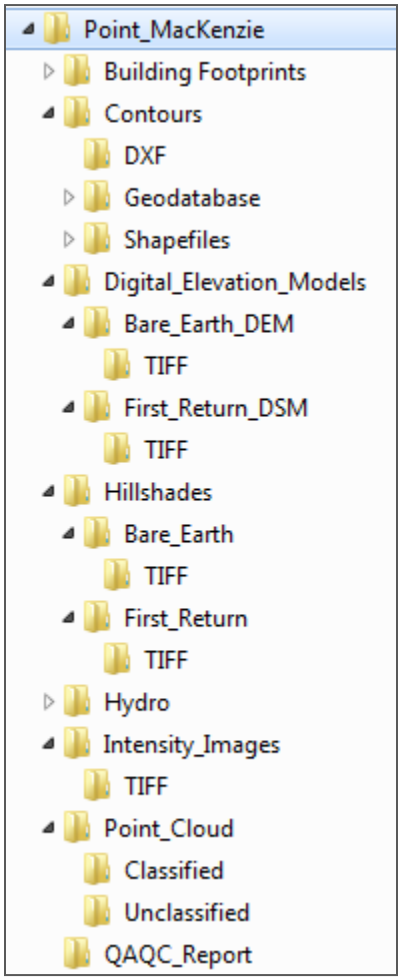
LiDAR Flightlines: The flightlines flown during the acquisition of the LiDAR data, available in two formats, ESRI geodatabase feature class and shapefile.

Unclassified Point Cloud: Discrete points of elevation data viewable as a three dimensional cloud of points. The unclassified point cloud data is organized by swath (aka flightline footprints) and is available in LAS 1.2 format. The unclassified data is not part of the typical distribution package but is available by request from the MSB GIS division. The classified point cloud data is part of the typical distribution package, is organized by tiles, and is located in the individual block folders.

LiDAR Folder Cont...

Caswell Lakes, Core, Matanuska, North_Susitna, Point_MacKenzie, Talkeetna, and **Willow:** These folders contain the LiDAR related products that are organized by the 7 block areas. These folders are divided into eight folders each with additional sub-folders. These data are further organized into 25 sq/km tiles (see *Attachment A*). Below is some detailed info about each product folder.





Building Footprints: With completion of the project, these data are now available as a project wide dataset and are located in the All Blocks folder.

Contours: Two foot contours are available in three formats, AutoCAD drawing exchange format (DXF), ESRI geodatabase feature class, and shapefile.

Digital_Elevation_Models: Digital models of elevations, available as either a bare earth digital elevation model (DEM) or a first return digital surface model (DSM), in tiff format.

Hillshades: 3-D visualization models, representing either bare earth or first return surface, in tiff format.

Hydro: With completion of the project, these data are now available as a project wide dataset and are located in the All Blocks folder.

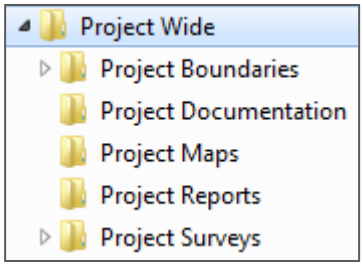
Intensity_Images: An image-like product derived from the return strength of the LiDAR pulses, available in tiff format.

Point_Cloud: Discrete points of elevation data viewable as a three dimensional cloud of points. All other products in the LiDAR folder are derived from the point cloud data. The individual block folders contain the classified point cloud data in LAS format. Unclassified point cloud data is also available by request from the MSB GIS division.

QAQC_Report: Quality Assurance Quality Control Report developed by the Alaska Satellite Facility during the independent 3rd party review process.

Project Wide Folder

The Project Wide folder is divided into four folders.



Project Boundaries: Includes datasets representing the project acquisition area and ½ foot imagery acquisition area. As well as blocks, tiles, and quarter tile boundaries. These are available in two formats, ESRI geodatabase feature class and shapefile.
Project Documentation: Supporting documents about the project including, frequently asked questions, two page project summary, the original scope of work, and the file management schema.
Project Maps: Important project maps, including the acquisition area map, block and tile index map, and 2011 vs. 2012 acquisition area maps.
Project Surveys: Project survey control and checkpoint surveys.

File Naming Conventions

Due to the size of the project area (3680 sq/mi) and the file size of many of the deliverables, the project has been divided (for the sake of file management) into seven blocks (i.e. regional areas); Caswell Lakes, Core, Matanuska, North Susitna, Point MacKenzie, Talkeetna, and Willow.

NW	**NE**
SW	**SE**

PM_001

It is further split into nearly five hundred 25 sq km tiles (see *Attachment A*). These tiles are named first with an abbreviation of the block name, then with a number, and are used to name all products split at the tile level. For example, the first tile in the Point MacKenzie block is named PM_001 and the last tile is PM_071. Some products are further divided into quarter tiles; these divisions are identified using compass directions (NW, NE, SW, and SE); for example, PM_001_NW.

A suffix has been added to all raster datasets to help differentiate between similar products. For example, for Point MacKenzie tile 3:
PM_003_ImgJp2.jp2 = Ortho-Imagery (compressed 15:1 in Jpg2000 format)
PM_003_ImgSid.sid = Ortho-Imagery (compressed 10:1 in MrSid2 format)
PM_003_Img.tif = Ortho-Imagery (uncompressed in Tiff format)
PM_003_DEM.tif = Bare Earth DEM
PM_003_DSM.tif = 1st Return DSM
PM_003_HsBE.tif = Hillshade Bare Earth
PM_003_Hs1R.tif = Hillshade First Return
PM_003_SE_INT.tif = Intensity Image (these data are split further into quarter tiles)

Questions?

Project questions can be addressed to:

Heather Kelley, GIS Specialist, MSB GIS Division
907-745-9695 or Heather.Kelley@matsugov.us

Product Examples – Ortho-imagery.

Product Examples - Building footprints, contours, and hydro.

Product Examples – Building footprints, contours, and hillshade (bare earth).