

*Please provide the following information, and submit to the NOAA DM Plan Repository.*

### **Reference to Master DM Plan (if applicable)**

*As stated in Section IV, Requirement 1.3, DM Plans may be hierarchical. If this DM Plan inherits provisions from a higher-level DM Plan already submitted to the Repository, then this more-specific Plan only needs to provide information that differs from what was provided in the Master DM Plan.*

URL of higher-level DM Plan (if any) as submitted to DM Plan Repository:

## **1. General Description of Data to be Managed**

### **1.1. Name of the Data, data collection Project, or data-producing Program:**

NAIP Digital Ortho Photo Image

### **1.2. Summary description of the data:**

This data set contains imagery from the National Agriculture Imagery Program (NAIP). The NAIP program is administered by USDA FSA and has been established to support two main FSA strategic goals centered on agricultural production.

These are, increase stewardship of America's natural resources while enhancing the environment, and to ensure commodities are procured and distributed effectively and efficiently to increase food security. The NAIP program supports these goals by acquiring and providing ortho imagery that has been collected during the agricultural growing season in the U.S. The NAIP ortho imagery is tailored to meet FSA requirements and is a fundamental tool used to support FSA farm and conservation programs. Ortho imagery provides an effective, intuitive means of communication about farm program administration between FSA and stakeholders.

New technology and innovation is identified by fostering and maintaining a relationship with vendors and government partners, and by keeping pace with the broader geospatial community. As a result of these efforts the NAIP program

provides three main products: DOQQ tiles, Compressed County Mosaics (CCM), and Seamline shape files. The Contract specifications for NAIP imagery have changed over time reflecting agency requirements and improving technologies. These changes include image resolution, horizontal accuracy, coverage area, and number of bands. In general, flying seasons are established by FSA and are targeted for peak crop growing conditions. The NAIP acquisition cycle is based on a minimum 3 year refresh of base ortho imagery. The tiling format of the NAIP imagery is based on a 3.75' x 3.75' quarter quadrangle with a 300 pixel buffer on all four sides. NAIP quarter quads are formatted to the UTM coordinate system using the North American Datum of 1983. NAIP imagery may contain as much as 10% cloud cover per tile.

Original contact information:

Contact Org: Aerial Photography Field Office (APFO)

Phone: 801-844-2922

Email: apfo.sales@slc.usda.gov

**1.3. Is this a one-time data collection, or an ongoing series of measurements?**

One-time data collection

**1.4. Actual or planned temporal coverage of the data:**

2010-05-03

**1.5. Actual or planned geographic coverage of the data:**

W: -117.2, E: -116.802, N: 32.634, S: 32.492

**1.6. Type(s) of data:**

*(e.g., digital numeric data, imagery, photographs, video, audio, database, tabular data, etc.)*

Image (digital)

**1.7. Data collection method(s):**

*(e.g., satellite, airplane, unmanned aerial system, radar, weather station, moored buoy, research vessel, autonomous underwater vehicle, animal tagging, manual surveys, enforcement activities, numerical model, etc.)*

**1.8. If data are from a NOAA Observing System of Record, indicate name of system:****1.8.1. If data are from another observing system, please specify:****2. Point of Contact for this Data Management Plan (author or maintainer)****2.1. Name:**

NOAA Office for Coastal Management (NOAA/OCM)

**2.2. Title:**

Metadata Contact

**2.3. Affiliation or facility:**

NOAA Office for Coastal Management (NOAA/OCM)

**2.4. E-mail address:**

coastal.info@noaa.gov

**2.5. Phone number:**

(843) 740-1202

**3. Responsible Party for Data Management**

*Program Managers, or their designee, shall be responsible for assuring the proper management of the data produced by their Program. Please indicate the responsible party below.*

**3.1. Name:****3.2. Title:**

Data Steward

**4. Resources**

*Programs must identify resources within their own budget for managing the data they produce.*

**4.1. Have resources for management of these data been identified?****4.2. Approximate percentage of the budget for these data devoted to data management (specify percentage or "unknown"):****5. Data Lineage and Quality**

*NOAA has issued Information Quality Guidelines for ensuring and maximizing the quality, objectivity, utility, and integrity of information which it disseminates.*

**5.1. Processing workflow of the data from collection or acquisition to making it publicly accessible**

*(describe or provide URL of description):*

## Process Steps:

- 2012-01-12 00:00:00 - Aerial photography acquired from April 24, 2010 until September 30, 2010. Aerial photography was acquired using a frame based digital camera (UltraCamD (UCD), UltraCamX (UCX), or DMC), therefore no scanning conversion from film to digital was needed. Geometric and radiometric calibration for each one of the camera heads is determined in the manufacturing laboratory. This step is also known as geometric and radiometric calibration of a single camera head and done when the sensor is being manufactured. The 4 multispectral heads collect 4 separated bands: Red, Green, Blue and Near Infrared wavelength. Both the UltraCam and DMC sensors collect 12bit data. The UCD sensor CCD pixel size is 9 micron with a footprint of 7500 pixels in the long track, and 11500 pixels in the cross track. The UCX sensor CCD pixel size is 7.2 micron with a footprint of 9420 pixels in the long track, and 14430 pixels in the cross track. The DMC sensor CCD pixel size is 12 micron with a footprint of 7680 pixels in the long track, and 13824 pixels in the cross track. Twin Engine Navajo and Malibu, Turbo Commander and Cessna 320 and Cessna Conquest aircraft were used, flying at average flight height of 6,500 to 8,500 meters above ground, allowing image acquisition of 0.40 to 0.67 meters Ground Sample Distance. An INS - Inertial Navigation System, with AGPS ( Airborne GPS) and IMU (Inertial Measurement Unit) was utilized for all aerial missions. The INS allows for accurate photo-center registration and image orientation. For inspection and verification of accuracy of the exterior orientation computed with the Inertial Navigation System, stereo compilation was performed for every flight mission and its result compared against higher accuracy source data. If a test of positional accuracy failed (> 5 meters) a full analytical triangulation is processed for that mission, assuring accurate horizontal positioning. USGS seamless NED data was used as a surface for ortho-rectification. Sanborns used proprietary software called METRO to rectify the scanned images. Rectification was done using cubic convolution resampling. Color balancing was then performed on each exposure. Sanborns software tonally balanced each exposure to alleviate the effects of hotspots, side-to-side shading within an exposure, and tonal differences between flightlines due to dissimilar conditions at the time of capture. Each exposure was then balanced to predefined target values used throughout the project, creating a dataset consistent and uniform in radiometry. Seams between exposures were determined by Sanborns software to use the best exposure based on proximity to nadir and ground angle to the camera. Delivery tiles were then extracted from Sanborns seamlessimagery database, named to meet the DOQQ and/or DOQ naming convention, and formatted as defined in the task order. Horizontal accuracy was once again tested for 6-meter absolute accuracy. If necessary, a new aerotriangulation adjustment would be performed for the affected flight mission and new set of doqqqs produced. Quality control was performed on a sampling of each deliverable to ensure no artifacts or anomalies were present in the imagery. Satellite imagery was also used to supplement aerial imagery to complete up to 12 DOQQ tiles for which suitable airborne imagery was unavailable. The supplemental satellite imager was acquired using GeoEye-1. GeoEye-1 scenes were

acquired from GeoEye. Sensor model and orientations were supplied. The raw data has a sub-meter pixel resolution and provided in 4 bands: Red, Green, Blue and Near Infrared wavelength. USGS seamless 2009 NED (National Elevation Data) was used as surface for ortho-rectification. Sanborn utilized commercial software called OrthoPRO, form Z/I Intergraph, to ortho-rectify the digital satellite images. The rectified images were then integrated into Sanborn proprietary software called METRO. The final production processes then followed the same procedures as describe

**5.1.1. If data at different stages of the workflow, or products derived from these data, are subject to a separate data management plan, provide reference to other plan:**

**5.2. Quality control procedures employed (describe or provide URL of description):**

## 6. Data Documentation

*The EDMC Data Documentation Procedural Directive requires that NOAA data be well documented, specifies the use of ISO 19115 and related standards for documentation of new data, and provides links to resources and tools for metadata creation and validation.*

**6.1. Does metadata comply with EDMC Data Documentation directive?**

No

**6.1.1. If metadata are non-existent or non-compliant, please explain:**

Missing/invalid information:

- 1.7. Data collection method(s)
- 3.1. Responsible Party for Data Management
- 4.1. Have resources for management of these data been identified?
- 4.2. Approximate percentage of the budget for these data devoted to data management
- 5.2. Quality control procedures employed
- 7.1. Do these data comply with the Data Access directive?
- 7.1.1. If data are not available or has limitations, has a Waiver been filed?
- 7.1.2. If there are limitations to data access, describe how data are protected
- 7.3. Data access methods or services offered
- 7.4. Approximate delay between data collection and dissemination
- 8.1. Actual or planned long-term data archive location
- 8.3. Approximate delay between data collection and submission to an archive facility
- 8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?

**6.2. Name of organization or facility providing metadata hosting:**

NMFS Office of Science and Technology

**6.2.1. If service is needed for metadata hosting, please indicate:****6.3. URL of metadata folder or data catalog, if known:**

<https://www.fisheries.noaa.gov/inport/item/49487>

**6.4. Process for producing and maintaining metadata**

*(describe or provide URL of description):*

Metadata produced and maintained in accordance with the NOAA Data Documentation Procedural Directive: [https://nosc.noaa.gov/EDMC/DAARWG/docs/EDMC\\_PD-Data\\_Documentation\\_v1.pdf](https://nosc.noaa.gov/EDMC/DAARWG/docs/EDMC_PD-Data_Documentation_v1.pdf)

**7. Data Access**

*NAO 212-15 states that access to environmental data may only be restricted when distribution is explicitly limited by law, regulation, policy (such as those applicable to personally identifiable information or protected critical infrastructure information or proprietary trade information) or by security requirements. The EDMC Data Access Procedural Directive contains specific guidance, recommends the use of open-standard, interoperable, non-proprietary web services, provides information about resources and tools to enable data access, and includes a Waiver to be submitted to justify any approach other than full, unrestricted public access.*

**7.1. Do these data comply with the Data Access directive?**

**7.1.1. If the data are not to be made available to the public at all, or with limitations, has a Waiver (Appendix A of Data Access directive) been filed?**

**7.1.2. If there are limitations to public data access, describe how data are protected from unauthorized access or disclosure:**

**7.2. Name of organization of facility providing data access:**

NOAA Office for Coastal Management (NOAA/OCM)

**7.2.1. If data hosting service is needed, please indicate:****7.2.2. URL of data access service, if known:**

<https://coast.noaa.gov/dataviewer>

<https://coast.noaa.gov/dataviewer/#/imagery/search/where:ID=5069>

[https://coastalimagery.blob.core.windows.net/digitalcoast/Tijuana\\_NERR\\_2010\\_5069/index.html](https://coastalimagery.blob.core.windows.net/digitalcoast/Tijuana_NERR_2010_5069/index.html)

**7.3. Data access methods or services offered:****7.4. Approximate delay between data collection and dissemination:**

**7.4.1. If delay is longer than latency of automated processing, indicate under what**

**authority data access is delayed:**

## **8. Data Preservation and Protection**

*The NOAA Procedure for Scientific Records Appraisal and Archive Approval describes how to identify, appraise and decide what scientific records are to be preserved in a NOAA archive.*

### **8.1. Actual or planned long-term data archive location:**

*(Specify NCEI-MD, NCEI-CO, NCEI-NC, NCEI-MS, World Data Center (WDC) facility, Other, To Be Determined, Unable to Archive, or No Archiving Intended)*

#### **8.1.1. If World Data Center or Other, specify:**

#### **8.1.2. If To Be Determined, Unable to Archive or No Archiving Intended, explain:**

### **8.2. Data storage facility prior to being sent to an archive facility (if any):**

Office for Coastal Management - Charleston, SC

### **8.3. Approximate delay between data collection and submission to an archive facility:**

### **8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?**

*Discuss data back-up, disaster recovery/contingency planning, and off-site data storage relevant to the data collection*

## **9. Additional Line Office or Staff Office Questions**

*Line and Staff Offices may extend this template by inserting additional questions in this section.*