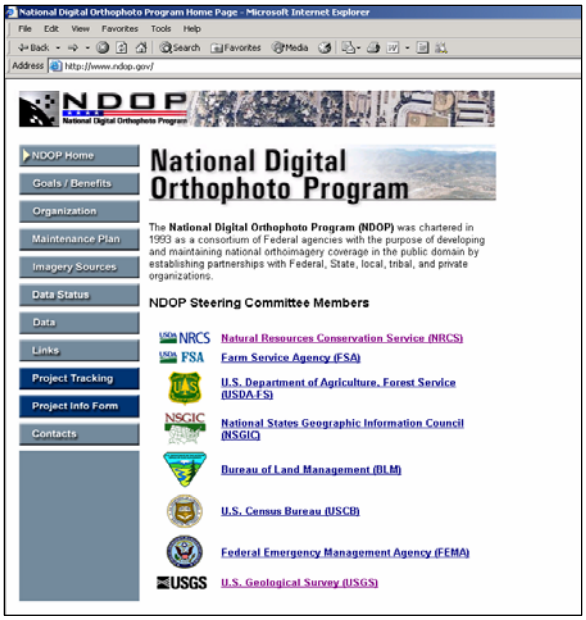
National Digital Orthophoto Program (NDOP)

www.ndop.gov

Program Highlights

Data Product

- 1 meter resolution black and white orthophotography nationwide
- High resolution (usually 1 foot) natural color (some black and white) orthophotography in selected urban areas
- High resolution (finer than 1 meter) orthophotography for some States



Advantages

- 1 meter data is available nationally
- All these data meet FEMA accuracy specification
- Uncompressed imagery provides the maximum visual quality
- Source of orthophotos if local or state data are not available
- Urban area orthos are very recent
- Accessible through the Seamless Data Distribution System (http://seamless.usgs.gov)

Disadvantages

- High resolution data in urban areas more difficult to manipulate due to file size.
- Much of the 1 meter data is several years old
- Full resolution quarter quad tiles also are difficult to manage compared to compressed mosaics of same imagery available from USDA
- Limited areas are fairly poor quality or Color-Infrared photography which is not as visually pleasing

Program Overview

The National Digital Orthophoto Program (NDOP) was chartered in 1993 as a consortium of Federal agencies with the purpose of developing and maintaining national orthoimagery coverage in the public domain by establishing partnerships with Federal, State, local, tribal, and private organizations.

Data Details

Nationwide DOQs are black and white (B/W), natural color, or color-infrared (CIR) images with 1-meter ground resolution.

High resolution (usually one foot) imagery is available for the Nation's largest urban areas and state capitals. The imagery usually is natural color.

USGS also has agreements in which it distributes statewide high resolution imagery for some states.

Data Applicability to Flood Mapping Program

All these data meet FEMA's accuracy specifications and could be used as base maps for DFIRMs if the image quality is acceptable.

Data Availability

Data status for high resolution imagery can be found at http://seamless.usgs.gov/website/seamless/products/listofortho.asp. USGS is developing a new capability to display the status of one-meter DOQs.

Data Ordering

In the Seamless Data Distribution System at http://seamless.usgs.gov, users specify the footprint of the data they require. The data are in GeoTIFF format, UTM coordinate system, NAD 83. Up to 1.6 gigabytes of data (transmitted in 100 megabyte units) can be downloaded for free in one request; through multiple requests, users can download more data for free. If a single request exceeds the 1.6 gigabyte limit, the system offers the option of providing the data on media for a fee to cover processing, handling, and mailing.

In the past, the USGS produced three types of tiled DOQs which may also be used:

1. **3.75-minute (quarter-quad) DOQs** are available in both Native and GeoTIFF formats. DOQs in native format are cast to the Universal Transverse Mercator (UTM) projection and referenced to either the North American Datum (NAD) of 1927 (NAD27) or the NAD of 1983 (NAD83). DOQs in GeoTIFF format are cast to the UTM projection and referenced to NAD83. The average file size of a B/W quarter quad is 40-45 megabytes, and a color file is generally 140-150 megabytes. Quarter-quad DOQs are distributed on CD-ROM, DVD, 8-mm tape, and File Transfer Protocol (FTP) as uncompressed files. Software is available that will convert a DOQ image from Native to GeoTIFF format in either NAD27 or NAD83 (download from http://rmmcweb.cr.usgs.gov/software/).
2. **7.5-minute (full-quad) DOQs** cover an area measuring 7.5-minutes longitude by 7.5-minutes latitude. Full-quad DOQs are mostly available for Oregon, Washington, and Alaska. Limited coverage may also be available for other states.
3. **County DOQs** consist of collections of individual DOQs that have been compiled on a county-by-county basis. There is fairly good coverage for counties in Kansas, Georgia, Minnesota, North Carolina, and Pennsylvania. Other states may also have limited counties available. The files are cast to the UTM projection and referenced to either NAD27 or NAD83. County DOQs are packaged as individual JPEG-compressed 8-bit binary files on CD-ROM.

The tiled DOQQs are searchable and orderable from EarthExplorer at http://edcsns17.cr.usgs.gov/EarthExplorer/. DOQs are available from EROS Data Center (http://edc.usgs.gov/products/aerial/doq.html) on DVD, CD, 8 mm tape, and via FTP (download). County DOQs are available only on CD, and typically require multiple CDs per county.