USDA Service Center Initiative
Geospatial Data Acquisition, Integration and Delivery
Business Re-engineering Project

Data Themes - Outline - 14-digit Hydrologic Unit Boundary Layer

I. Acquisition

A. Data Source

1. Producer Information

a. Name

The Natural Resources Conservation Service (NRCS) State Offices, following national delineation and digitizing guidelines, are producing the 14-digit hydrologic unit coverages. In many cases, state and other federal partners are involved. NRCS' National Cartography and Geospatial Center is certifying completed coverages.

b. Location of Headquarters

NRCS State Office for the state of coverage

c. Internet Address

http://state.nrcs.usda.gov where ***state*** is replaced with the 2-letter abbreviation of the state of coverage

2. Publisher Information

a. Name

Each state will publish their 14-digit HU data on their NRCS state home page and/or on the state's spatial data clearinghouse. In addition, the Natural Resources Conservation Service's National Cartography and Geospatial Center will publish certified data.

b. Location of Headquarters

Natural Resources Conservation Service
National Cartography and Geospatial Center
P. O. 6567
501 Felix St., Bldg. 23
Fort Worth, TX 76115-3405

c. Internet Address

http://www.ftw.nrcs.usda.gov

3. Acquisition Information

a. Delivery Media

Delivery will be via anonymous file transfer protocol (ftp) when available.

b. Download URL

To be determined

c. Projected Data Availability Schedule

National status map is available at:

http://www.ftw.nrcs.usda.gov/huc_data.html

B. Standards Information

1. Geospatial Data Standard

a. Standard Name and Steward Information

Standards and instructions for the development and certification of HU boundaries can be found at:

http://www.ftw.nrcs.usda.gov/huc_data.html

2. Metadata Standard

a. Standard Name and Steward Information

Metadata Standard Name: Content Standards for Digital Geospatial Metadata
Metadata Standard Version: FGDC-STD-001-1998

b. Description of Metadata Captured

Metadata for the HU Boundary Layer are at data-set level implementation and will be in place until file-specific information for individual coverages is available.

http://www.ftw.nrcs.usda.gov/huc_data.html

C. Acquired Data Structure

1. Geospatial Data Format

a. Format (raster, vector, etc.)

Vector.

b. Format name

Data will be available as modified digital line graph (DLG-3) files, ARC/INFO coverages and ARC/INFO exchange files.

c. Data Extent

The data extent will be statewide for each state. Eventually, a national coverage will be produced.

A current status graphic of data development may be viewed at:
http://www.ftw.nrcs.usda.gov/huc_data.html

d. Horizontal and Vertical Resolution

7.5-Minute USGS Quadrangle Accuracy

HORIZONTAL POSITIONAL ACCURACY

Horizontal positional accuracy is based upon the use of USGS source quadrangles, which are compiled to meet National Map Accuracy Standards (NMAS). NMAS

horizontal accuracy requires at least 90 percent of points tested are within 0.02 inches of the true position. The digital data are estimated to contain a horizontal positional error of less than or equal to 0.003 inches standard error in the two component directions relative to the source quadrangle.

VERTICAL POSITIONAL ACCURACY

Vertical positional accuracy is not measured.

e. Absolute Horizontal and Vertical Accuracy

f. Nominal Scale

1:24,000

g. Horizontal and Vertical Datum

The reference data may be North American Datum of 1927 (NAD 27), North American Datum of 1983, (NAD 83), Old Hawaiian Datum (OHD), or Puerto Rico Datum (PRD) of 1940. Completed data will be projected to NAD83.

h. Projection

Universal Transverse Mercator Projection

i. Coordinate Units

Coordinates are in UTM meters.

j. Average Data Set Size

Depending upon the size of the state, it is estimated that the average will be about 40mg.

k. Symbology

None

2. Data Model

a. Geospatial Data Structure

The HU Boundary layer consists of polygons nested within the USGS 8 Digit (Catalog Units). The layer will delineate the 5th and 6th levels of watersheds (11 and 14 digits).

b. Data Dictionary

Appendix of National Instruction 170-304
http://www.ftw.nrcs.usda.gov/huc_data.html

D. Policies

1. Restrictions

a. Use Constraints

None

b. Access Constraints

None

c. Certification Issues

None

2. Maintenance

a. Temporal Information

Range of Dates/Times:
Beginning Date: 1979-07
Ending Date: present

b. Average Update Cycle

As needed

E. Acquisition Cost

1. Cooperative Agreement

a. Description of Agreement

None

b. Status of Agreement

None

2. Cost to Acquire Data

None

II. Integration

A. Value Added Process

1. Benefit to the Service Center

Integration will allow service centers to consider all landscape within their service center area in the context of watersheds, including those completely in the service area and those flowing into or out of the service area. Watersheds are useful for ecological context areas for water quality assessments.

2. Process Model

a. Flow Diagram

Not available

b. Process Description

- Obtain the coverage from the approved source
- Overlay the coverage on the Service Center Area

- Identify all subwatersheds coincident
- Include areas outside the Service Center when the areas flow into or out of the Service Center.
- Produce file of appropriate subwatershed features and attributes for the Service Center.

3. Technical Issues

a. Tiling

State, with clipping for service centers as described above.

b. Compression

None

c. Scale

The data are appropriate for use at 1:24,000.

d. Tonal Matching

None

e. Edge-matching

State coverages are edge matched from the 1:24,000-scale source material to a statewide coverage. Edgematching is accomplished across state lines to the degree possible. Eventually, a national seamless coverage will be made.

4. Quality Control

a. Procedures

Quality control procedures are described in National Instruction 170-304.

b. Acceptance Criteria

Data meet National Map Accuracy at 1:24,000 and were developed and attributed as per National Instruction 170-304.

5. Data Steward

a. Name and Organization

For Archiving and distribution
National Cartography and Geospatial Center
Natural Resources Conservation Service
US Department of Agriculture
501 Felix Street, Building 23
P. O. Box 6567
Fort Worth, Texas 76115-0567 **USA**

For Maintenance and updating and changing archived copy
The Originating state office

b. Responsibilities

Makes any revision to the data set and notifies National Cartography and Geospatial Center.

B. Integrated Data Structure

1. Geospatial Data Format

a. Format (raster, vector, etc.)

Vector

b. Format Name

Native format of desktop GIS, such as shapefile.

c. Data Extent

Service Center Area, with overedge for watersheds flowing into or out of the service area.

d. Horizontal and Vertical Resolution

Same as source data.

e. Absolute Horizontal and Vertical Accuracy

Same as source data.

f. Nominal Scale

Same as source data.

g. Horizontal and Vertical Datum

The horizontal datum is the North American Datum (NAD) 83. The vertical datum is mean sea level.

h. Projection

Universal Transverse Mercator (UTM), North American Datum (NAD) 83.

i. Coordinate Units

Meters

j. Symbology

None

2. Attribute Data Format

a. Format Name

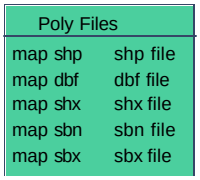
Standard .dbf files as part of shape files.

b. Database Size

Depends on extent

3. Data Model

a. Geospatial Data Structure



b. Attribute Data Structure

Dbase files as associated with shape files; all attributes are character except for the numeric area data.

c. Database Table Definition

1. Character fields containing 2-digit Region, 4-digit Sub-region, 6-digit Accounting Unit, 8-digit Cataloging Unit, 11-digit NRCS Watershed, and 14-digit NRCS Sub-watershed coding.
2. Acres – 14-width numeric field
3. State coding – character field of postal abbreviations, separated by hyphens, in ascending alphabetical order for each 6th level (14-digit) polygon to indicate location of bordering polygons.
4. Other items as desired by the originators.

d. Data Relationship Definition

Standard .dbf file that goes with shape file.

e. Data Dictionary

In Appendix NI 170-304

C. Resource Requirements

1. Hardware and Software

CCE

2. Staffing

This is unknown at this time.

D. Integration Cost

1. Hardware and Software

To reformat, reproject, and subset the dataset a minimum the following is required:
Arc/Info on UNIX or NT platform
ArcView on NT platform
5-gigabyte disk

2. Staffing

This is unknown at this time.

III. Delivery

A. Specifications

1. Directory Structure
   a. Folder Theme Data is Stored In

      (Version 5)
      \Service Center Themes
          HU

2. File Naming Convention
   a. List of Theme Files and The File Naming Convention

      To be determined

B. User Information

1. Accuracy Assessment
   a. Alignment with Other Theme Geospatial Data

      The data are captured at a scale of 1:24,000 and are intended for use 1:24,000 or smaller scales.

   b. Content

      Data are sufficiently detailed for use at 1:24,000 or smaller scale.

2. Appropriate Uses of the Geospatial Data
   a. Display Scale

      1:24,000 or smaller

   b. Plot Scale

      1:24,000 or smaller

   c. Area Calculations

      As accurate as the source data and capture scale and the algorithm used by ArcInfo/ArcView.

   d. Decision Making

C. Maintenance and Updating

1. Recommendations and Guidelines
   a. Frequency of Updates

      Update the Service Center data whenever errors are found or when new delineations are made.

b. Location for the Theme Data to be Maintained

At the state level

c. Maintenance and Updating Procedures Overview

Details in NI 170-304