

USGS National Hydrography Dataset Newsletter
Vol. 1, No. 5, March, 2002
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High Resolution (24K) News:

Vermont: The first 1:5,000-scale NHD sub-basin has been produced and will be available soon. The Vermont Center for Geographic Information, Inc. (VCGI), with assistance from the USGS, State, regional and local agencies, is enhancing Vermont's spatial data infrastructure by extending the NHD standard to produce a statewide 1:5,000-scale surface water data. This three-year effort to produce the Vermont Hydrography Dataset (VHD) supports a variety of state, regional and local interactive mapping, analytical and cartographic applications. This includes; river channel assessment and management, hazard mapping, emergency management, conservation planning, bio-monitoring, aquatic studies, management of lakes and ponds, and storm water management. The NHD-compliant VHD will greatly facilitate applications and data sharing among parties as well as allow the use of tools, applications and custom interfaces developed by the USGS, EPA and third party vendors. The advantage of 1:5,000-scale data (1) allows a substantial increase in spatial accuracy, (2) improves the accuracy of both cartographic and analytical applications, and (3) provides integration consistency with other data layers created or updated using high resolution imagery. The 1:5,000-scale content was obtained from one-half meter resolution Digital Orthophotography Quadrangles and other supporting data to provide spatial and attribute enhancements to existing surface water data. This imagery has become a standard base data layer for Vermont users because it is highly accurate, widely distributed and rich in visual information. The existing data had been created by a variety of methodologies and was inconsistent across the State. The current effort will correct this problem and provide a uniform and accurate statewide dataset. Developing the VHD follows the same steps of pre-conflation, conflation and post-conflation as with 1:24,000-scale data production. A custom ArcEdit GUI was created at VCGI for the pre-conflation effort while the USGS Conflation Toolkit was used for the later two tasks. Spatial edits in the pre-conflation phase involve a time consuming and methodical process of photo interpretation while following established protocols that govern the addition, update or deletion of features. The 1:5,000-scale VHD data will be available from both the NHD homepage <http://nhd.usgs.gov> and the VCGI homepage <http://www.vcgi.org>. The first 1:5,000-scale sub-basin, the White River sub-basin (01080105), will be available by late May. Questions about the VHD can be directed to Mike Brouillette, VHD Project Manager at mikeb@vcgi.uvm.edu. The DOQ imagery and supporting information are available from the Vermont Mapping Program, <http://www.state.vt.us/tax/Vermont%20Ortho%20Program.htm>.

NHD Technology: The transition of the NHD from the current Feature Operational Database (FOD) to the Environmental Systems Research Institute (ESRI) Inc. Geodatabase is organized into several major tasks. These tasks are briefly described to give readers some insight to the issues surrounding the effort. The USGS has contracted with ESRI for assistance on a number of these tasks using a contract that expired this month.

FOD-to-GEO Conversion: Convert FOD ArcSDE database to a NHD Geodatabase ArcSDE database. Beyond a straight data conversion, the task involves data cleanup, preservation of metadata lineage, and some data alterations (e.g. removal of branched reaches).

Tools: Develop user tools for the creation, maintenance, and application of NHD Geodatabase data. An initial development, tasked to ESRI, involves a requirements analysis in the context of ArcGIS 8 and Geodatabase capabilities. Other developments also tasked to ESRI include: conversion of NHDinARC datasets to Geodatabase datasets for development testing; application of M coordinate values based on reach delineations; derivation of geometric networks and associated linkages; and extraction of personal Geodatabase datasets in support of ArcIMS downloads.

ArcIMS: Develop an ArcIMS web interface for the display, query, and download of NHD data. Initial development of an ASP-based interface was tasked to ESRI. Additional planned developments include support of data extract and query through versions, extract by custom area-of-interest, and web-based applications using ArcObjects geo-processing servers.

GEO Database: Implement the Geodatabase repository for NHD data, including support for versioning, I/O, integrity checks, optimization tuning, and data backup and recovery.

Data Exchange/Backward Compatibility: Develop a data path to allow continued data creation, maintenance, and distribution using existing data models. Also develop non-proprietary data delivery/exchange capabilities.

Model: Support continued enhancement of the NHD Geodatabase model.

Status of U.S. Forest Service Program: The joint program between the U.S. Forest Service and the U.S. Geological Survey currently involves the following projects, their locations, and expected availability:

Payette NF – Western Idaho – due in April
Salmon-Challis NF – Central Idaho – due in April
George Washington-Jefferson NF – Western Virginia – due in April
Clearwater NF – Northern Idaho – due in May
Bridger-Teton NF – Western Wyoming – due in May
Land Between the Lakes – Western Kentucky/Tennessee – due in May
Beaverhead-Deerlodge-Bitterroot NF – Southwest Montana – due in June
Shawnee NF – Southern Illinois – due in June
Caribou-Targhee NF – Southeast Idaho – due in July
Hoosier NF – Southern Indiana – due in July
St. Francis NF – Eastern Arkansas – due in August
Nezperce NF – West central Idaho – due in August
Finger Lakes NF – West central New York – due in August
Shoshone NF – Northwest Wyoming – due in September
Tahoe (and adjacent) NF – East central California – due in September
Lolo NF – Northwest Montana – due in October
Huron NF – Northeast Michigan – due in October
Monongahela NF – Central West Virginia – due in October
Ozark NF – Northwest Arkansas – due in November
Green Mountain NF – Central Vermont – due date pending
Chattahoochee-Oconee NF – Northern Georgia – due date pending
Note: *Italics* - Produced by third-party

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Thanks to Mike Brouillette and Paul Wiese

Jeff Simley, USGS, assumes full responsibility for the content of this newsletter.