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PILOT PROJECT: COLLECTING AND INTEGRATING HYDROGRAPHIC DATA FROM LOCAL AGENICES INTO THE NATIONAL HYDROGRAPHY DATABASE

COOPERATIVE AGREEMENT NO. G09AC00272

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The purpose of this grant was to provide updated National Hydrography Dataset (NHD) data in the selected hydrologic units (HU) by collecting information from local water delivery agencies and then provide insight to other NHD Stewards regarding the challenges of collecting local resolution data. The Idaho Department of Water Resources (IDWR) created an ArcGIS based tool to help collect NHDflowline data and during the timeframe of this grant functionality was added to the IDWR Customized NHD Edit Tool and it was tested by local water delivery agencies. Additionally, the Hydro Event Management (HEM) tools were used by a local water delivery agency to test the feasibility of the ease of use of the HEM tools by such an agency.

The Idaho Department of Water Resources (IDWR) relies heavily on input from local water delivery agencies to assess and update NHDflowline information. It is important that these local agencies have a simple, straight-forward procedure for submitting changes to the NHD. Local agencies in Idaho currently use two primary forms of hydrologic data; lines and points. The line features primarily indicate a water delivery system and the points indicate structures in and along the system that indicate or impact water delivery.

During the timeframe of this grant, improvements were added to the IDWR Customized NHD Editing tool by adding additional features and processes. A Point of Diversion feature class was added plus the ability to transfer geometry from either user developed shapefiles or feature classes into the tool feature classes. Connectivity checks, flowline direction correction, and bulk addition of names to the tool name table was also added. For details about the tool, please review the IDWR Customized NHD Editing Tool Description at http://www.idwr.idaho.gov/GeographicInfo/NHD/Projects/PDF/NHD_Editing_Tool.pdf.

The IDWR Customized NHD Editing Tool was tested by the City of Nampa and City of Jerome GIS and the Northside Canal Company. The Northside Canal Company and City of Jerome edited linework in HU 17040212 (Upper Snake-Rock). The City of Nampa conducted testing with a preliminary dataset in HU 17050114 (Lower Boise). Support for these local agency testers was provided in the form of training, documentation, and a \$1000.00 stipend. All of the testers found the tool easy to use, but encountered challenges especially with large datasets as inputs and also bulk deletions. A summary report of comments from testers and changes made due to input from testers are available in the following document:

http://www.idwr.idaho.gov/GeographicInfo/NHD/Projects/PDF/NHD_Tool_Testing_Summary.pdf.

A copy of the ArcMap project containing the custom code for the IDWR Customized NHD Edit Tool, Custom Geodatabase, Installation Instructions, and User Guide is available at http://www.idwr.idaho.gov/GeographicInfo/NHD/Projects/collecting_edits.htm.

IDWR also developed an online edit tool in conjunction with the testing of the IDWR Customized NHD Editing Tool. An online edit tool is necessary for local water delivery agencies and other water managers that may not have access to GIS software or do not have GIS skills necessary to submit edits. When developing an online NHD data update submission tool, there are some challenges that need to be addressed:

- 1) The submission tool needs to work in a variety of available browsers.
- 2) The tool should have enough base data for the person submitting the update to be able to delineate an edit correctly.
- 3) The tool should work quickly.
- 4) The tool should be simple enough to work allow a user to submit edits easily and efficiently.
- 5) The tool must have the ability to capture information about the person or agency submitting the edit and also any other information needed to populate the metadata fields.
- 6) The tool should also allow the user to alter edits or submit comments.
- 7) The editor should be able to edit both geometry as well and geometry.
- 8) The editor should be able to submit edits for line, point and polygonal features.
- 9) The data must be captured in a way that easily allows the NHD editor to process the edits and submit the information into the National Dataset.

Many of these challenges are similar to those encountered when developing and testing the IDWR Customized NHD Edit Tool.

Being able to create point events is very useful to local water delivery agencies since these agencies collect point data to represent the majority of their water diversion information. Water delivery agencies may have varying levels of accuracy for these points but need to use this information in a networked environment. Additionally, some agencies have reservations regarding submitting the exact ground locations to a national database, but are willing to represent them as an event layer. IDWR and the Burley Irrigation District (BID) agreed to test the Hydro Event Management (HEM) tools (version 2.2a Beta) to add points of diversion to updated NHD within the BID service area. BID was able to use the HEM tools to create point events for their diversion locations. A major challenge was developing a procedure for BID to follow that was repeatable and uncomplicated. During the testing process, there were some difficulties encountered while trying to create events from diversion points. These challenges resulted in event locations that required further review and investigation after running the HEM tool. A summary report of the tester's comments is available in the following document:

http://www.idwr.idaho.gov/GeographicInfo/NHD/Projects/PDF/HEM_Testing_Summary.pdf.

The edits to the NHD identified in these processes have been submitted to the Idaho NHD Data Steward for integration into the NHD.

IDWR maintains an Idaho NHD webpage at

<http://www.idwr.idaho.gov/GeographicInfo/NHD/default.htm>. This website is updated as new information becomes available. Through this webpage, local agencies are informed of recently updated NHD in Idaho, current IDWR projects, and may submit comments on how they are using the NHD.