

# Pilot Project: Collecting and Integrating Hydrographical Data from Local Agencies into the NHD

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## Introduction

Many hydrological data reside in the “minds of local water managers” and on paper maps maintained by local agencies such as municipalities, Counties and irrigation districts. We propose ways in which those local agencies can submit data to the Idaho Department of Water Resources (IDWR), the NHD Steward in Idaho. Additionally, we propose to encourage the use of the NHD by those local agencies.

The IDWR has begun the development of a customized tool to simplify the process of submitting edits to the Data Steward. This tool allows its users to edit geometry and flow direction, as well as update the FCODE and Name attribute fields using any ArcGIS desktop software. If local agencies already have compiled their hydrographical data into their own GIS database, then the tool will import those data and allow its users to update those components (for example the FCODE) that are missing. Other agencies that have no hydrographical data can choose to apply their updates to existing NHD data or compile their data from scratch.

Currently, IDWR is also working on an EPA-funded project to develop an online tool that allows local agencies and NHD users to submit NHD changes to the IDWR. This tool is geared towards non-GIS users, and will be used to propose attribute updates (e.g. names and FCODES) to the NHD. In contrast, this proposed project relies on GIS software being available to the local agencies submitting the data, making it easier to submit a large number of geometry, flow direction and attribute updates. These projects complement each other by allowing updates from both GIS and non-GIS users.

To ensure continued support for the NHD we want to encourage local agencies to use NHD data by showing them how NHD data would be beneficial in agency business processes. For this purpose we will encourage the local agencies to collect head gate and return flow data for irrigation districts, bridge crossing and storm drain condition data for municipalities and show the local agencies how they can use ArcGIS and HEM tools to reference those to the NHD. We will also use our Idaho NHD website (<http://www.idwr.idaho.gov/hydrography/>) as a forum for local agency NHD users, which will include a blog where users can ask questions, post comments and share ideas.

We will select an irrigation company and a municipality which reside in the same sub-basin as a pilot. This will also give us a glance into the resources and feasibility of incorporating local resolution scale data. The participating irrigation district and municipality will receive some compensation for their efforts.

## Benefits to the USGS and the NHD Community

- This project will provide updated NHD data in the selected sub-basins. However, on a larger scale, the tools and techniques we will develop can be applied to other sub-basins and municipalities in Idaho as well as other States. This project will give insight in the challenges that will arise when collecting data from local agencies with variable GIS software capabilities and GIS skills.
- By encouraging more agencies to use the same data structure, it will enhance the cross reference of this data, for example across the urban and rural interface.
- Encouraging local agencies to utilize the NHD in their day-to-day operations will increase the commitment of those organizations to support the NHD in the future.
- In the near future Idaho would like to develop a high resolution NHDPlus dataset. The proposed tools will help improve the quality of the 24K NHD which will form the baselayer on which the NHDPlus will be based.
- This project will give insight in the challenges of collecting local resolution data.

**Proposed work**

- Continue development of customized editing tool. This includes the testing of this tool and improving the tool based on user reviews.
- Submit new edits collected during this project to the USGS for incorporation into the NHD.
- Assess which linear referencing tools in ArcGIS and the Hydro Event Management (HEM) tools will be useful for those local agencies. Provide ideas and training on the implementation of those tools.
- Upon completion of tool development and testing, make those tools available for download on the Idaho NHD Website (<http://www.idwr.idaho.gov/hydrography/>).
- Maintain and update a website specific to the use of the NHD in Idaho (<http://www.idwr.idaho.gov/hydrography/>). Include a section and blog where local agencies can share ideas on how they are using the NHD.

**Deliverables**

- Improved NHD data for the subbasin considered in this pilot project
- A customized editing tool with documentation for local agencies that is made available on the Idaho NHD website.
- Improved and frequently updated information relevant to local agencies on the Idaho NHD website.
- Support for local agencies that are part of this pilot project to help them collect and implement event theme data.
- Short report detailing the successes and challenges met with this project.
- Provide insight to perspectives and challenges that will need to be addressed when developing an online NHD data update submission tool.