Oregon Hydrography Framework Implementation Team Meeting
Thursday, February 2, 2012
1:00 – 3:30 p.m., Conference room 124B
North Mall Office Building, 725 Summer St. NE, Salem

Attendees:

Bob Harmon, OWRD, Hydro Chair	Chris Strobl, USFS
Milt Hill, DAS GEO	Jon Bowers, ODFW
Jay Stevens, BLM	Malavika Bishop, DEQ
Jed Roberts, DOGAMI	Steve Aalbers, DEQ
Sheri Schneider, USGS	Emmor Nile, ODF

Agenda:

1) <u>Welcome & introductions</u>, Bob & group

2) <u>Announcements</u>, Bob & group

   a) Email from Dick Lycan, PSU: They are expecting a press release on the on-line lakes atlas in the next few days. They have added links to the ODFW weekly fishing report and to the Marine Board Access points and have made a number of cosmetic and functional changes. It can be viewed at: http://aol.research.pdx.edu.

   Email from Ashley Massey, Marine Board, added that they will be promoting the on-line lakes atlas in their booth at the upcoming Pacific Northwest Sportsmen's Show. They are also updating and adding functionality to their Boating Access Map.

   b) From Sheri: Proposal to hold NHD Editor training in Oregon (for new tools). Hank Nelson (NHD Point of Contact for the PNW) proposed putting on a 2-day course in late March in Oregon. There was a lot of interest shown by the group and general agreement that it should be held in Portland. Sheri will work with folks to identify a training location (w/ computers) and dates.

   Sheri also mentioned that the USGS undertaking a stewardship assessment. Bob will participate in that with Dan Wickwire and Jay Stevens in Portland.

3) <u>Review of Revised Standard</u>, Group

   Bob had sent out a draft revised standard document. He gave a quick overview of the contents and pointed out that it included recognition of the NHD <u>and</u> WBD (Watershed Boundary Dataset) as the new, single standard for Oregon, since that is how they're managed nationally (since 2010). After review by the group at this meeting he is hoping to send it out to the larger community (through the state GIS email list-serves) for review per the Oregon Framework process. He also encouraged the group to send it to anybody else that they would like to include in the review.

   Discussion by document section:

   Section 2.1 (scope and content): It was suggested that more examples of water features be included in the text and stated that it does <u>not</u> include the NWI (National Wetlands Inventory) even though integration with that State (& NWI) wetlands data is important. The NHD has a "marsh" feature that is largely a legacy of cartographic

data sets (DLGs & CFFs). This also pertains to the "integration section" (2.4) of the document. Bob mentioned that Dick Lycan had also brought up the need for better coordination regarding wetlands and bathymetry, which falls under the Oregon Elevation FIT.

Section 2.5.5 (resolution): Emmor suggested correcting the language to say "…1:24,000-scale, *or better…*".

Section 2.2 (need for standard): Jon will send Bob text with more examples.

Section 2.3 (participation): Jon suggested listing participating agencies/groups.

Section 2.4 (integration): Jon asked the reference to the Fish Passage Barrier Data Standard be corrected to say that the use of NHD linear referencing is optional. Emmor mentioned that the term "lidar" is commonly spelled without capital letters not mixed case ("LiDAR").

Section 2.5.2 (reference system): Jon brought up that the NHD coordinate reference system is in geographic which differs from the state standard (Oregon Lambert (EPSG 2992)). There was some discussion about reprojecting the state extract periodically posting that copy for the Oregon GIS community (probably from the GEO site). Jed suggested just mentioning the difference in the state standard.

4) <u>State Agency migration to the NHD</u>, Group

   a) Developing migration plans

An outcome of the last Hydro FIT meeting (8/4/11) was to identify issues for each agency as they migrate to the NHD from other hydrography data sets. It should make it easier for agencies with common needs to work together, and for all involved to build cases for making the work a high priority and get grants to complete the work.

      i) Proposed "plan" format

Bob presented the following list of questions that he would like each agency to answer if they maintain their own data on a hydrography theme:

- What are the particulars of your agency's current hydro data set?:
    - primary compilation scale (100K, 24K, etc.)?
    - are agency's hydro data maintained as attributes or events, or both?
    - if you use linear referencing, what is the model used by this data set, e.g., LLID, NHD river reach, something else?
- Is this migration on your project list?
- Do you have a pilot area defined? If so, where, in approximate terms like HU 17######## or 'X' county?
- Coordination
    - Have you identified other agencies that can assist based on their experience?

- o Likewise, based on similar needs/goals/data?
- Based on the scope of your migration will additional funding/positions be necessary?
  - o Have funding sources been identified?
- Do you have a timeline for the migration?

ii) Agency rundown

There was discussion on the use of the 24K+ LLID (whole stream routed, ca. 2006) theme that OWRD and ODFW still use. Bob gave a summary of the whole stream id that OWRD has had for a couple of decades—its design and use are primarily "behind the scenes" to support spatial-like queries from the database. He ran some queries later and there are approximately 41,000 WRD streamcodes in their database and of those 27,000 are mapped in its streams feature class.

ODFW has added some streams to their copy of the LLID where they needed to map barriers and fish distribution.

Folks enquired about OWEB and ODOT. Some knew about their programs as they relate to hydro, but didn't think they went as far as to maintain hydro event data. Bob will check with these agencies.

Emmor spoke about ODF's work with hydro data. It's primarily focused on mapping fish presence (record "yes"/"no"/"don't know") in support of the Forest Practices Act. They improve the channel alignment of their data with lidar wherever possible.

Jed mentioned a recent judgment against FEMA in the Puget Sound area, which is still being worked out, but will likely require knowing the location of endangered fish species along certain reaches of streams for planning purposes. A similar lawsuit has been filed against FEMA in Oregon which could also affect the administration of the National Flood Insurance program.

DEQ maintains its water quality limited data as event on LLID-routed streams compiled at 1:100,000-scale. They are looking into pursuing EPA 'Exchange Network' grants for their migration to the NHD. It's possible that they might be able to use PSU students to undertake the work. The application deadline for the next round is this November (2012).

iii) Whole stream identifier

The whole stream identifier still remains an important component of several agencies' work: ODFW for StreamNet reporting, DEQ for water quality limited reporting (that may change depending on the EPA), and WRD for water right spatial queries and for determining approximate stream mile locations (see outcomes section (5.c.) in these notes). A proposal was made and accepted to add language to the revised standard identifying the need for a whole stream identifier and further study by the Oregon Hydro FIT.

Jay recollected the meeting held in Montana (in August 2009) to discuss the issue of maintaining a whole route id on the NHD. There was a pilot study generated from the meeting, but the group had not seen a final report. Sheri will check into it (response at end of notes).

b) Technical discussion

Jon is currently working on migrating ODFW's Fish Passage Barriers (~30K lines and points) and Fish Habitat Distribution data. He successfully migrated ~95% of the barriers without manual editing (of the NHD). Most of the remaining locations are culverts high in the watershed with minimal or no fish passage status attributes. He's assessing how much effort should be put into migrating the remaining data. Jon used a snap distance of 5-meters and the HEM import tools for most of the processing. At the time HEM had an import limitation of 5K features in a single batch. The output are HEM-compliant event tables.

Jon initially tried migrating the whole-stream id to the NHD using Rick Jordan's (WA Dept. of Ecology) process (Jay helped with that) to help QA the distribution event data migration. He tabled that and went back to migrating the distribution data with the "transform route event" geoprocessing tool and "HEM import" at the sub-region level (second level or 4-digit HU).

Jon found a pervasive difference in the geometry between the current OR Framework theme (LLID) and the NHD of 1-2 feet. He remarked that it's fairly manageable, but more problematic where the delta is greater. The bigger discrepancies are scattered around the state. Jay (during the processing) suggested comparing lengths of source events against their output to quickly highlight areas needing more work. Jon also applied visual QA and HEM tools with manual editing. He noted that where the NHD has been edited create the most work for event migration, notably in the area of the Portland and the Kilchis watershed which have been updated from lidar-derived elevation data. Jon also found discrepancies at the stream mouths throughout the state.

Jon asked if Bob (WRD) maintained events on the LLID. He said no, but his hope was to migrate WRD's water right surface Points of Diversion (PODs) to the NHD to enable more robust network analysis. Jon also asked Jay about the BLM migration experience and Jay summarized the project involving 3.5 million event records. Jay thought that once they had nailed down the workflow, snapping tolerances, etc., that the process went more smoothly. He added that that does not include the re-densification and centerline realignment of the NHD data.

Steve asked Jay about the pros and cons of maintaining data on single versus multi-route events. Jay thought that "short" routes had more advantages especially when synchronizing with changes in geometry. Maintaining attributes on one long event composed of many routes has the advantage of human readability and less tabular records to coordinate.

5) <u>Outcomes</u>, Group

    a) Revised standard document:

       Bob will incorporate the suggestions sent to him via email and made during the meeting into the draft revised standard and send that to Milt for distribution to the state GIS community.

    b) Agency migration plans:

       Each agency in the group will submit answers to the questions listed above (in 4.a.i) to Bob by March 15th. He will incorporate them into a single document. He will also solicit comments from ODOT and OWEB, as well as, members of the GPL group.

    c) River-mile "address point"/"index" theme:

       There was discussion around the need for a point theme that represents "river-mile" locations compiled from the USGS quads and calculated for the remaining streams in the NHD. A sub-group will be formed to study this issue further after the hydro standard revision has moved further along through the adoption process.

    d) Next meeting: August 2012.

<u>From question raised in 4.a.iii, email response to Sheri from Lance Clampitt, USGS lliason to Montana, on 2/6/12:</u>

"Hi Sheri,

I believe you are speaking of the Montana effort to get the MT Fish Wildlife and Parks to utilize the NHD through the implementation of a whole stream identifier. This has been a struggle and thus far MT has not been successful in getting a single stream network that satisfies all stream course users. A unique id within the NHD that could link these other stream sources was determined to be the best way to do this but it is my opinion that only time will bring these data sets together. In a nut shell we have not made much progress to that end. On the positive side all users of stream networks in MT are aware of the NHD and our efforts.

If your state people would like to chat about this effort more then they may want to contact Mr. Evan Hammer, NRIS Manager in Helena (ehammer@mt.gov). Even is the lead for this effort and the NHD Steward in MT.

Sorry I could not offer more positive information."