

**Oregon/Washington Hydrography Framework Groups - Meeting Notes  
Duncan Federal Building, Portland, OR  
November 7, 2003**

**Attendees**

Bob Harmon	OWRD	Tim Smith	BLM
Carl Harris	WADNR	Dana Baker	BLM
Jon Bowers	ODFW	Janis VanWyhe	BLM
Dan Wickwire	BLM	Ken Adee	FS
Gege Coleman	BLM	Jim Edmonds	FS
Steve Salas	BLM	Pat McNeil	FS
Georgia Bosse	BLM	Rick Jordan	FS

**Introductions & agenda review**

**Status of REO transition**

Dan gave a brief background on the transfer of operational responsibility for the Hydro Clearinghouse from the REO to the BLM/FS that took place in September and October. After the servers were moved the test data sets were removed from the system. Loading of the *real* data began three days ago (11/4) and is continuing. The BLM/Titan group and Jim (FS) are providing support using BLM business practices.

**Clearinghouse operations**

**New servers**

Ken mentioned that he used year-end funds to buy two loaded Dell servers. The current server will be moved into a test role. One of the new servers will be used for production and the other for development.

**Web page**

Dan talked about the update of the Clearinghouse web page including the clean up of several old links and data sets. The supporting documentation has also been updated to include new organization codes, and the revised hydrologic unit (HU) procedures and data structures.

**Washington data**

Carl said that a large chunk of the hydro data sets for western Washington are ready for submission to the Clearinghouse. The remaining areas west of the Cascade crest need to be integrated with FS data. A meeting will be scheduled shortly to outline the process.

**StreamNet**

Carl also mentioned that he attended a meeting of the [StreamNet](#) steering committee and they have decided to move to the 24K hydro framework (PNW) data model, along with the fish distribution data.

**Hydro framework intro meetings**

Carl proposed, and the group agreed, to set up a meeting(s) with interested users of the hydro data across the region and brief them on the PNW Hydro framework, the clearinghouse, data structure, etc.

**Status graphic & distribution data set**

Bob asked that a status graphic of available data be posted to the clearinghouse web site. He also asked that a distribution data set be made available for general use (not for check-out and editing) when practical.

**Coordination along the Columbia River**

Carl said that he provided the south bank of the Columbia River to the contractor compiling Washington's hydro data. Dan asked to get a copy to compare it with what the BLM has.

### **Periodicity of stream centerlines**

Ken started a discussion on the consistency of coding periodicity of stream centerlines through water bodies. He noted that there doesn't appear to be a consistent method applied by the partners. The group discussed some options and came up with a draft set of rules (at the end of these notes).

Dan will ask Chester (BLM State Hydrography Steward) to review proposed rules.

### **Densification consistency, or lack thereof**

Ken ran into this issue during the integration process. Others have identified it, also. The FS developed a tool a few years back to densify the hydro network from DEMs. The purpose of it would be to apply it to areas that have not been densified in order to create a "consistent" stream coverage. It's currently in "alpha", i.e., more resources are required for further development and testing. Carl and Bob reiterated the importance of this issue to the partners and users. We also need to figure out methods for "de-densifying" stream networks for analysis or cartographic use.

### **Classification of flow**

Ken has noticed preponderance of the "unknown" code when classifying watercourse continuity and periodicity. The group agreed that the onus is on the editor to fill in these codes wherever possible. Carl said that he couldn't make that assignment at this time for a variety of reasons. He will investigate it further. At present there is no requirement to populate these fields with something other than "unknown." A proposal was made to add a flow source attribute in the next iteration of the model.

### **Edit tools**

Ken's contractor is almost ready to deliver the "enhanced" editing tools for all of the framework feature types (water bodies, centerlines, shorelines, & points). Testing should be completed by the end of November. The tools now handle the connection between water bodies and shorelines during editing. The partners are still left with the issue of editing large features, i.e., the "Columbia situation."

### **QC enhancements**

A list of necessary QA/QC routines was reviewed during a conference call a few months ago. These will be integrated in to the check-in/out routines of the clearinghouse. Ken is going to see if he can use Jim's time and expertise to do the integration.

### **Integration workshop**

There will be another hydro integration workshop between the BLM and FS. They will meet first to identify the sub-basins to work on and then define a process—either through "face-to-face" workshops, as before, or through net meetings. Dan and Ken thought they might be ready to do this in mid-January.

### **Certification of HUs meeting**

During the week of November 17<sup>th</sup> (17-20) there will be series of meetings at the NRCS state office in Portland between the hydro framework partners and representatives from the certification group (NRCS and USGS national). They will review any remaining issues with the HU delineations for Washington and Oregon, and lay out a strategy for certifying the entire theme, i.e., putting it into the national data set.

A number of people remarked that the PNW HU theme still needs some work on naming and numbering to achieve more consistency with the national guidelines.

### **Clearinghouse redesign—Infrastructure**

The group saw a demonstration of the BLM's ArcSDE editing environment given by Tim Smith. We saw some tools that may be used in a typical editing scenario.

## **Clearinghouse redesign—Data design**

Dana Baker gave us a demo of ArcHydro and NHDinGeo (as in geodatabase).

### **Outcomes:**

1. Status graphic of available hydro data on the clearinghouse
2. Distribution version of hydro data set
3. HU certification meeting (reminder)
4. BLM/FS integration workshops
5. Migration of Clearinghouse to new servers & distribution of new comprehensive edit tools
6. Region wide "Intro to the PNW Hydro Framework" meeting(s)

Notes by Bob, 11/24/2003

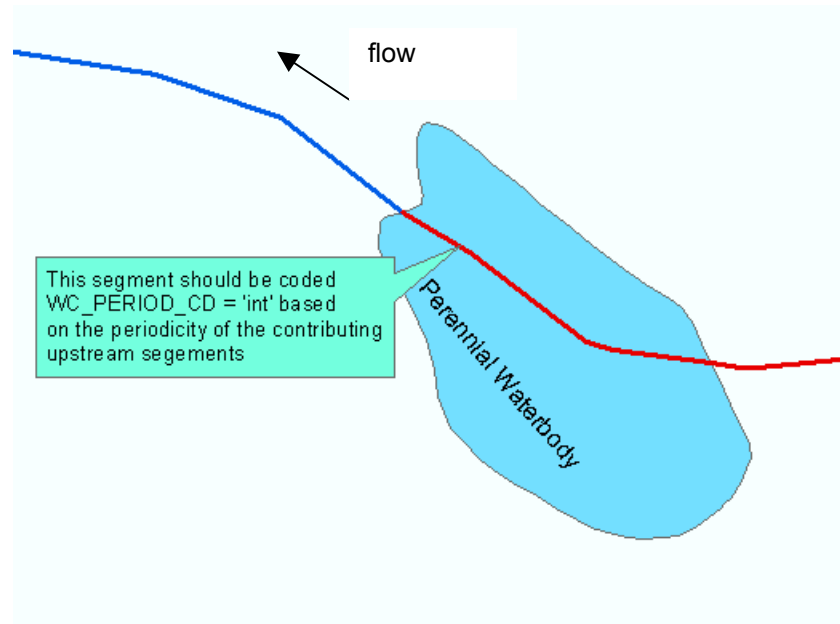
## DRAFT NW Hydro Framework protocol for populating WC\_PERIOD\_CD for artificial centerlines in waterbodies

### The need for standardization and justification of the protocol

While we have developed standards for the periodicity (ephemeral, intermittent, perennial) of hydrologic features, we have no protocol that establishes how these codes should be established on artificial centerlines within waterbodies. As a result we have inconsistencies in the coding of the WC\_PERIOD\_CD for centerlines among the various partners. In some instances we have used the periodicity of the waterbody to set the periodicity of the centerline arcs. This can result in problems when we reselect perennial streams, for instance, leaving centerline “stubs” of intermittent streams that have been removed from the coverage. This document specifies a protocol for assigning WC\_PERIOD\_CD values to the waterbody centerlines.

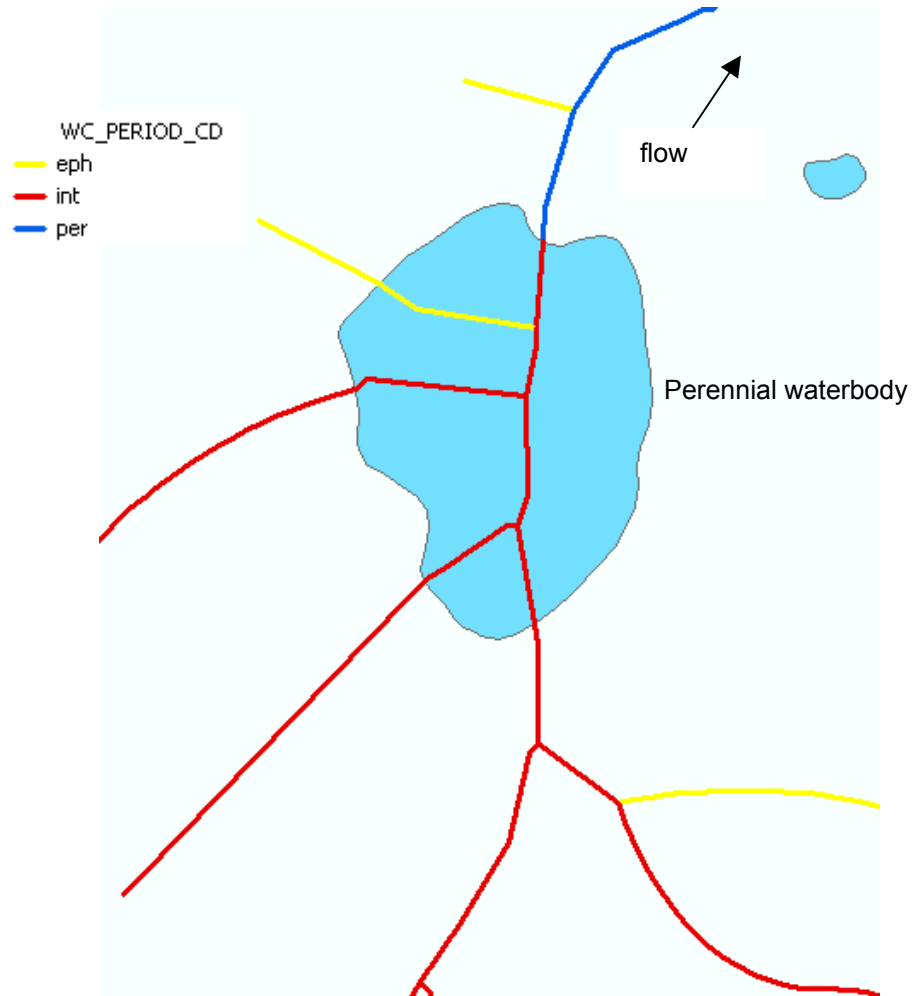
### The NW Hydro Framework protocol for establishing artificial centerline periodicity

1. Periodicity of waterbody centerlines will follow the periodicity of the associated stream and not the periodicity of the waterbody in which they occur.
2. Periodicity of the centerline will be determined as follows:
  - a. The periodicity of a downstream waterbody centerline is determined by the periodicity of the upstream segments flowing into that waterbody. This is straightforward, only a single stream contributes flow to the waterbody.

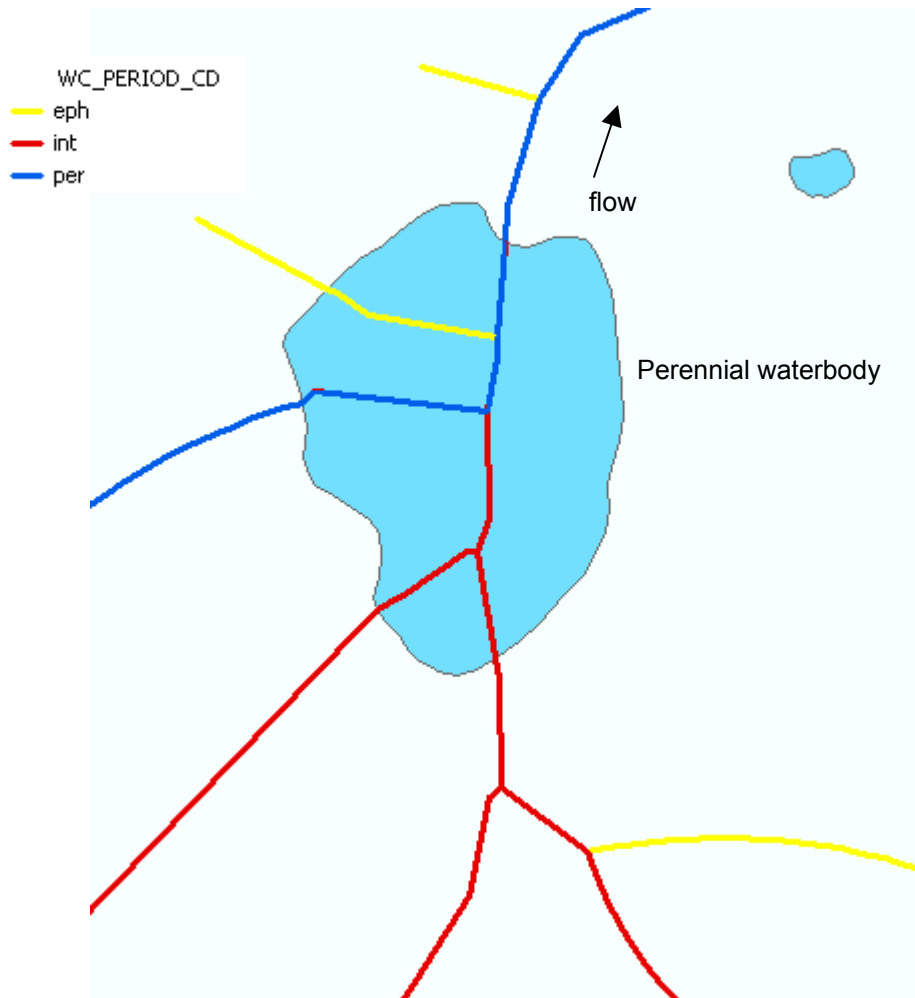


- b. The situation becomes somewhat more complex when multiple streams intersect inside a waterbody (branched centerlines). In the case of branched centerlines the periodicity of the centerline segments will be determined using the “accumulated flow periodicity”. In order to determine accumulated flow periodicity we first set up a hierarchy of periodicity. Perennial streams are assigned the highest level in the hierarchy, then intermittent and then finally ephemeral are assigned the lowest level. The

rule for assigning WC\_PERIOD\_CD may then be stated as follows: *The periodicity of a **centerline** .segment is determined by the highest periodicity value of the streams contributing to the upstream confluence of the segment.* In fact, the simple example above follows this rule as well. For instance, if an intermittent and a perennial stream contribute to the upstream confluence of a waterbody centerline the periodicity of the centerline segment will be perennial. In the following illustration the highest periodicity level reached in the branched centerline is intermittent.



If we change this slightly to make one of the tributaries a perennial stream the centerline periodicity will be as follows:



Note the differences between this illustration and the previous. By changing the periodicity of the tributary to perennial, we have changed the periodicity below the its confluence with the other centerline segments to perennial.