Drainage Area: CO, VPU: 15 - Release Notes

12/01/2018 – Updated and New Data

Time of Travel and Related Attributes: The new and updated data is included in new versions of the NHDPlusAttributes and EROMExtension components. Specifically,

EROM mean annual and mean monthly statistics have been re-computed with the following changes:

Removal of upper and lower limits for reference gage regression adjustment,
Correction of reference gage regression equation, and
Reference gage regression included in all flow statistics.

PlusFlowlineLakeMorphology and PlusWaterbodyLakeMorphology tables have been updated based on the new EROM mean annual flows.

PlusFlowlineVAA mean annual time of travel (TOTMA) has been updated based on the new EROM mean annual flows. Path time (PathTime) attribute has been added and populated based on the updated TOTMA values.

09/06/2016 – EROM Component Updated

The Lower Colorado River did not have the upstream boundary values from the Upper Colorado River (VPU 14) properly transferred, which resulted in significant under estimation of the flows and drainage areas on 570 flowlines on the Lower Colorado River.

05/10/2016 – Updated Components

The improved HUC12 downstream pointers from the February 2016 WBD Version were updated in the NHDPlus WBDSnapshot. When a correspondence between the two versions could be determined for both the HUC12 and the downstream HUC12, the downstream pointer was updated.

01/05/2016 – Updated Components

EROM Mean Annual and Mean Monthly flow estimates have been re-run to correct incremental flows to be the sum of the incremental flows upstream and on the flowline. EROM velocities were updated to provide velocity estimate only for flowing waters. EROM velocities are now set to -9998 (missing value) in all water bodies except swamp/marsh.

07/08/2015 – Updated Components

The WBDSnapshot was revised to correct the values in the Acres field. The NHDSnapshot and NHDPlusAttributes were revised to correct values in FType/FCode in a handful of features.

1/30/2015 – Revised Component

The VPUAttributeExtension has been updated to include accumulated mean annual and mean monthly runoff files. In addition, an error in the allocated and accumulated mean annual precipitation has been corrected.

2/12/2014 – Replacement components

New versions of several components have been released due to a variety of issues:

- A packaging error in the Vogel component
- An accumulation error across the boundary of VPU 14 and VPU 15
- A StreamOrder computation error

The new components are (1) NHDPlusAttributes, (2) EROMExtension, (3) VPUAttributeExtension, and (4) VogelExtension.

1/21/2014 – New Data Release

The EROMExtension was enhanced to include mean monthly flow estimates. See NHDPlusV2 User Guide for additional information.

12/07/2012 – Replacement components

Three NHDPlusV2 components are replaced with new versions: NHDSnapshot, NHDPlusBurnComponents, and NHDPlusAttributes. These replacements represent some changes in NHDFlowline ReachCode values and the inclusion of an NHDReachCrossReference table that tracks ReachCode changes from NHDPlusV1 to NHDPlusV2.

9/4/2012 – Initial Release Notes

Catchment/Burn Settings

Thirteen NHDFlowline features in conflict with the WBD-defined VPU boundary were set to "N" (no) for both Burn and Catchment attributes in BurnLineEvent.dbf. These features were not used in the hydro-enforcement process as burn features, nor were catchments delineated for these features. This was done to avoid catchments extending into adjacent VPUs.

Five intermittent Stream/River features along the Granite Reef Aqueduct were reviewed and all had their Catchment attribute set to "N". Based on feedback from the Arizona WBD working group, sinks were placed in borrow pits along the uphill side of the aqueduct to intercept flow from that side of the aqueduct.

An intermittent Stream/River feature (ComID 21755956) that connected Little Mormon Lake to Rocky Arroyo to the east was reviewed and had its Catchment attribute set to "N". This stream crossed a WBD divide and might have rerouted flow across the divide in a manner inconsistent with the WBD.

BurnAddLine Notes

12,844 lines from the harmonized HiRes NHD were added in Mexico or near the Mexico border to condition the DEM surface in those areas.

Mexico contributing drainage

Contributing drainage area from Mexico to U.S. waters is accounted for in the NHDPlusV2 data. These areas are represented in the HydroDem where harmonized WBD and high-res NHD stream lines were used as drainage enforcement, along with NED data that extends into Mexico. The added drainage lines from Mexico hydrography are included in the BurnAddLine. HUC-8 boundaries in Mexico were added to the Wall feature class from the WBD. No HUC-10 or HUC-12 boundaries were available in the WBD in Mexico at the time of NHDPlusV2 production.

BurnAddWaterbody notes

Additional closed lake features from high-res NHD were added to BurnAddWaterbody to enforce these lakes and their contributing drainage areas as isolated closed systems.

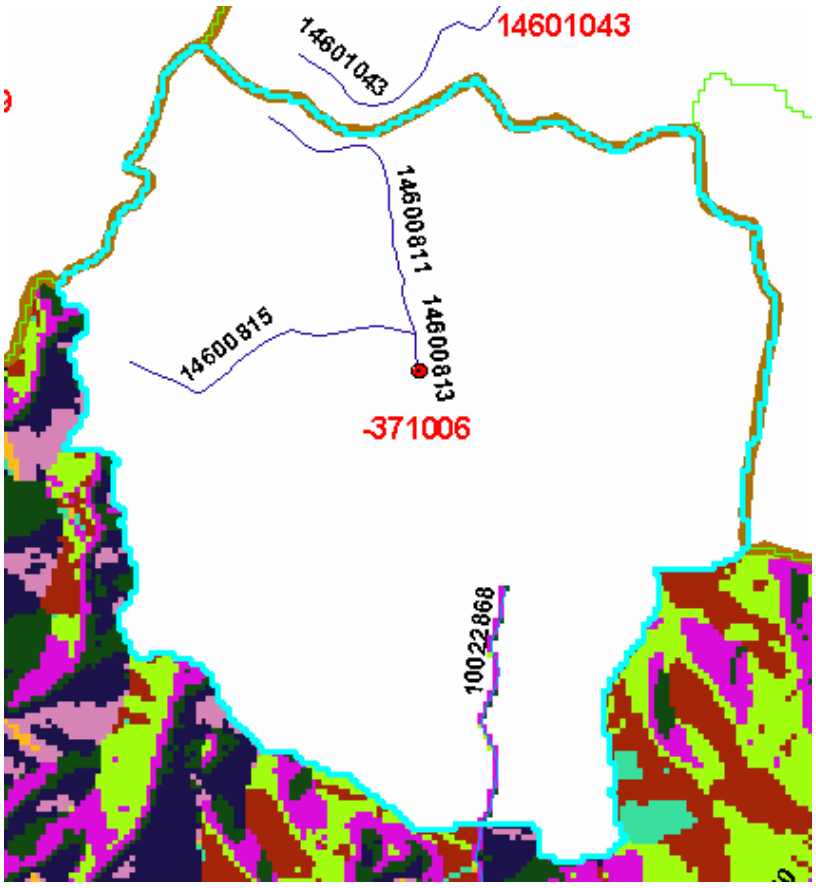
Arid Area Wall Removal

The usual treatment of HUC-12 boundaries as walls in many cases was not appropriate due to the extremely arid climate in this VPU. Review of the Filled_areas grid after initial runs showed many areas that were filled in order to allow drainage into sinks at the end of isolated streams. These filled areas were downslope from the sinks, but flow could not continue down slope because of walls along the WBD boundaries. The WBD, however, identified downstream HUC-12 units. In more humid climates the streams generally continue and cut through the walls, but since the streams were discontinuous here, many sections of walls were removed to allow the flow direction grids to represent flow downslope through these areas.

Specific Notes/Special Situations

1) Two playa features, ComID's 21352757 and 21352759, are included in the VPU 15 NHD, however they actually fall in VPU 13 according to the WBD. Careful inspection of the topographic maps confirms that if the playas were to fill up and drain, they would drain into VPU 13. However, this was discovered late in the production process, so the playa features and their resulting catchments remain in the VPU 15 datasets.

2) Catchment FeatureID -371006 (in the VPU 16 catchments) actually falls outside the boundary of VPU 16, according to WBD. The three flowines (COMIDs 14600811, 14600813, and 14600815,) were set to "N" for Catchment and Burn attributes. However, the associated sink should have been removed, but was overlooked. Because VPU 16 was processed first, the catchment boundary was enforced when VPU 15 was processed. Because it did not conflict with the VPU wall from WBD, the flowline (COMID 10022868) was burned in, even though it conflicted with the VPU 16 catchment boundaries. The result is the flowdirection and flowaccumulation grids for RPU 15b include a string of cells along the flowline, even though these cells are assigned to a VPU 16 catchment



Enhanced Unit Runoff Method (EROM)

See Appendix A of the "NHDPlus V2 User Guide" for a detailed explanation of the EROM parameters.

EROM Flow and Velocity estimates are for Mean Annual values.

The time period for these estimates is 1971 to 2000; the runoff, temperature and precipitation grids are for this time period.

For gage adjustment and Reference Gage Regression, gages must meet the following criteria:

1. A minimum of 20 of the 30 years (1971 to 2000) of complete flow records.
2. NWIS reported drainage area versus NHDPlus drainage area, for the gage, must be within 0.2 (+/- 20%).

Upstream gage drainage area proportion is 0.5 (50%).

Excess Evapotranspiration default coefficients are 0.3 and 0.5.

Gage sequestration proportion is 0.2 (20%).

Because of poor QAQC statistics in the Excess Evapotranspiration step, this step is not run in the following VPUs: 09, 10U, 17, 12. The reasons for the poor QAQC statistics are under investigation.