# NHDPlus Release Notes for
# Region 09
# Last Updated 8/2/2010

**Data Release Note – 8/2/2010 – Flowline_Cat_Attr V01_02 Released**
Two changes have been made to the FlowlineAttributesFlow Table: (1) All zero slopes have been changed to a nominal slope of 0.00005; and (2) the corresponding MAVELU and MAVELV estimates have been updated using the Jobson "slope" method for all Flowlines where these slopes have been changes. The result of this change is that the Jobson "noslope" method is never used. The reason for this change is that the NHDPlus Team has determined that the "noslope" method is not appropriate for zero slope applications. The Jobson velocity calculations are described in Appendix A- Step 6 of the NHDPlus User Guide.

**Data Release Note – 10/17/2008 – NHD Component V01_02 Released**
NHDFlowlineVAA.StreamOrde was set to zero to indicate that users are directed to use the new Stream Order/Stream Calculator fields that are available from the Data Extensions tab on the www.horizon-systems.com/NHDPlus web page.

**Release Note 04/28/2008** – The problem with prj.adf parameter Zunits has been corrected in the elev_cm grids.

**Data Release Note – 9/30/2006 – International Catchments**
International catchments for Region 09 were developed using the Atlas of Canada National Frameworks Hydrology, at the 1:1,000,000 scale. These data are available from http://www.geogratis.cgdi.gc.ca. The Drainage Network Skeleton (canadskel_l.shp) was used to create a geometric network and this was traced upstream, selecting the applicable lines. A relationship was established via attribute values to the corresponding catchments, and the catchment areas were merged together to define the drainage areas.

Additionally, the Prairie Farm Rehabilitation Administration (PFRA) Watershed Dataset was used. This dataset was mostly developed at 1:50,000 scale, and is available at http://www.agr.gc.ca/pfra/gis/gwshed_e.htm. This data set was used to define the noncontributing drainage areas, which were subsequently removed from the catchment areas. Removal of the noncontributing areas from the catchments in Canada resulted in numerous holes in the catchments. This appears to be reflective of the general drainage pattern in this area.

**Data Release Note – 9/30/2006 – Drainage Area**
For gages along the Red River and Souris River NHDPlus drainage area estimates are consistently lower than the gage drainage areas. These differences are most likely due to differences in what the gage estimates consider contributing drainage areas versus what NHDPlus considers the contributing areas. There are other outliers that are due to the systematic issues as described in the "Readme" sheet of the QAQC_Sinks spreadsheet. Other than these issues, NHDPlus drainage areas tend to match gage areas well.
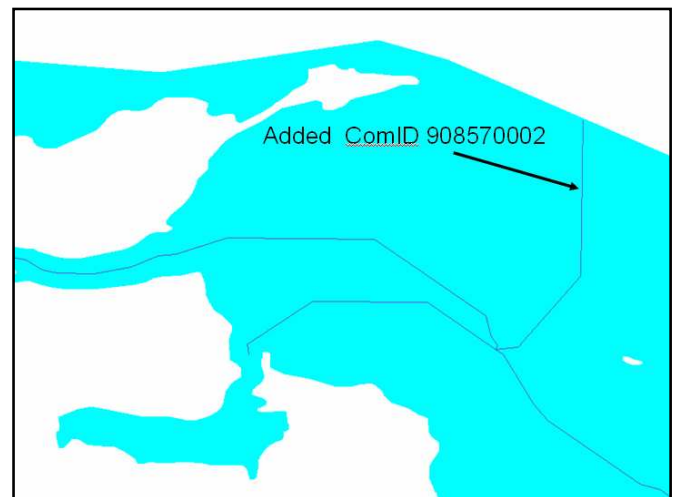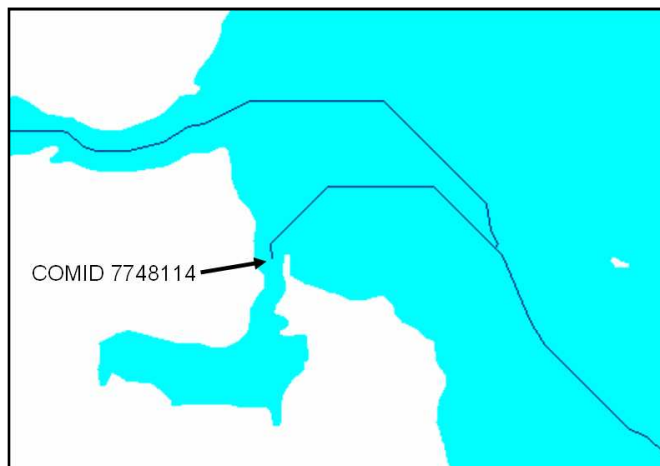
**Data Release Note – 9/30/2006 – Flow**
NHDPlus flow estimates on the most downstream gages of the Red River either over or under-estimate the gage mean annual flows, for instance the NHDPlus flow estimate at Grand Forks, ND is 11% less than the gage flow value. Overall, the NHDPlus flow estimates match the gage flows fairly well, especially for flow estimates less than 400 cfs. In general, The UROM flow estimates show less "scatter" than the Vogel flow estimates.

**Data Release Note – 9/30/2006 – Placement of Sinks**
"Nodata" sinks were applied at network ends of rivers, streams, and artificial paths where drainage from the U.S. drains into Canada.

The eastern part of Hydro Region 9 drains to the "Lake of the Woods" along the Canadian border. This lake drains northward into Canada. To create the accumulation grid, a sink was placed at the end of an artificial path within the lake at its' northern end (COMID 7748114 – see picture below). This provided the necessary sink for the accumulation grid. After the sinks were applied, flow direction was corrected in the NHD and an artificial path was added to the NHD to serve as the outlet to Canada (ComID 908570002 – see picture below). Therefore, the FAC grid does not agree with the NHD at this location.



**Data Release Note – 9/30/2006 – Application of the Watershed Boundary Dataset**
For Hydroregion 9, state certified versions of the Watershed Boundary Dataset (WBD) were not available and therefore not applied in the production of the HydroDEM. For more information on WBD see the NHDPlus Metadata file.

**Data Release Note – 9/30/2006 – Catchments**
Three flowlines (comids 7040803, 7040121, and 7040123) were added to the network after the catchments were generated. They do not have catchments. Two of the three (comids 7040803 and 7040121) are also headwater flowlines and thus lack calculated headwater node areas. These three flowlines form a small network that flows into a single

flowline with comid 7040159.  Thus, the catchment areas for these three flowlines are essentially part of the larger catchment of this receiving flowline (7040159).