

Lisa Helmuth

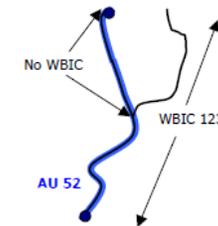
ASSESSMENT UNITS IN WATERS

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- ✘ System designed 2002-2004
 - + Spatial Model Decisions are documented
 - + AUs tied to Hydro
 - + AUs require a WBIC
 - + System designed to report to USEPA
 - + Features stored as individual features in SDE Environment
- ✘ 25,000 assessment units in WATERS
 - + Fraction of the state's rivers/streams
 - + Most of the lakes, open waters
 - + Fraction (very small) of springs
 - + Great Lakes and Mississippi (Wisconsin Portion Only)

WADRS Spatial Issues Issues and Decisions

- 1.) This AU (blue) was created in the WADRS before the proper WBIC was assigned in hydro. This AU now spans 2 WBICs. **How do we detect these in the database? WBICs in ROW but not in hydro...**



Mark Cheyne notes:

It is not valid for an Assessment Unit (AU) to exist without having a single WBIC assigned to it. However, there will be cases where a desired WBIC does not yet exist on 24K Hydro (Hydro) (and thus the user cannot use the Locator Tool (LT) map to visually delineate the spatial representation of that AU), and we do not want to delay the creation of the AU spatial representation, so we will allow the AU to be created without a WBIC (e.g. with a WBIC of 0). There will be related cases where the WBIC does not yet exist on Hydro, but it does exist in ROW, in which case the user is allowed to type the WBIC, and it is verified against the ROW database (W23323.DW_SURFACEWATER on PRDB1). Another case may arise where an AU was defined on a reach of Hydro that had a single nonzero WBIC at the time the AU was delineated, but as a result of Hydro maintenance, the extent of that WBIC was edited at a later time.

All of these cases can create a situation with each new (more or less annual) release of Hydro where the WBIC assigned to an AU differs from the WBIC(s) assigned to the Hydro features underlying the AU. This is considered a rule violation. These cases could be detected by a batch process run in conjunction with each new release of Hydro. The process might work as follows: Every AU is examined. A rule violation is identified if a spatial join of an AU to Hydro reveals that the Hydro features underlying the AU either have a WBIC that differs from the AU or have more than one WBIC. If the underlying Hydro has a single nonzero WBIC and the AU has a WBIC of 0, we might assume that the WBIC was assigned to Hydro (and ROW) after the AU was created, and we might edit the WBIC of the AU to match that of Hydro. The case where the underlying Hydro has a single WBIC of 0, and the AU has a nonzero WBIC represents a case where a valid WBIC has not yet been assigned to Hydro. This will perhaps be noted by the process as a guide for Hydro editors, but will not otherwise be considered a rule violation. For all other violations, we should flag the AU for manager intervention. The AU may need to be split at the junction of WBICs, or the assignment of WBIC to Hydro may be in error. (Anup/Sharee - do we need a flag column on WT_ASSESSMENT_UNITS for this?)

SPATIAL REPRESENTATIONS

- × Streams

- + Single line streams (lines)
- + Double line streams (polylines)

- × Rivers

- + Double lines (polylines)

- × Lakes, Bays, Harbors, Flowages

- + Polygons

- × Springs

- + Polygons

CURRENT CONDITIONS

- ✘ Snap to Hydro
 - + Dependency on Hydro Shapes
- ✘ WBIC required
 - + Dependency on Register of Waterbodies
- ✘ Heads up digitizing is conducted
 - + Goal: incorporate wbic and connection to hydro as soon as hydro is updated to reflect additions.
 - ✘ Example: trout waters, o/erw

DECISION RULES FOR ASSESSMENT UNIT

- ✘ WQ Standards Use Designations (i.e. Classes and/or Special Standards),
- ✘ Point and/or nonpoint source input to the stream or its tributaries (and associated Water Quality Variance segmentations listed in NR104, Wisconsin Administrative Code.
- ✘ Outstanding and Exceptional Resource Water designations (state and/or federal)
- ✘ Classification of the water as a Wisconsin Trout Stream in NR 1.0 Wisconsin Administrative Code.
- ✘ Identification of a water or segment of water as impaired and listed on the state's Clean Water Act 303d List of Impaired Waters.
- ✘ Lakes defined by natural community to clarify potential or attainable use

POTENTIAL CHANGES TO SPATIAL MODEL

× New eLT allows:

- + Multiple wbic groupings [not implemented]
- + Tracing upstream functions (all waters) [not implemented]
- + Circle to select and define area [not implemented]
- + Extension of existing wbic (rather than two wbics, one on hydro feature, one an edit to hydro)
- + Custom modification of polygon features (once it has cloned hydro, vortex tool allows modification without losing connection to wbic and hydro)
- + Polygons can be sliced (good for bays, harbors, etc.)

ADDITIONAL CONSIDERATIONS

- ✘ Changes to assessment units per say will require complete overall of data model in WATERS and remapping to federal database.
- ✘ *Alternatives:*
 - + **assessment group feature** to WATERS - tabular - to achieve similar result without modifying how we send data to USEPA (result is the same on their end, data management more intuitive on our end).
 - + **Search and Report Queries** based on program need rather than restructuring data system.

ADDITIONAL CONSIDERATIONS

- ✘ Decision protocols on data representativeness of monitoring - versus how assessment units are delineated...
- ✘ WARP Project to describe supporting impaired waters and tmdl management.
- ✘ Amendments