HYPACK
a xylem brand

Sounding Better!

Recent eHydro Work at HYPACK

By Mike Kalmbach

- Beta updates are available for USACE districts that submit surveys to eHydro. For multibeam surveys (single beam may come later).
- The updates are for ease of use and reliability of information.
- Topics include survey devices and geodesy, survey identification (eHydro naming), metadata and target and XYZ export.
- Not intended as “One Size Fits All” for all USACE districts. We know better than that! Rather, another tool in the HYPACK® toolbox.

Ease of Use and Reliability of Information

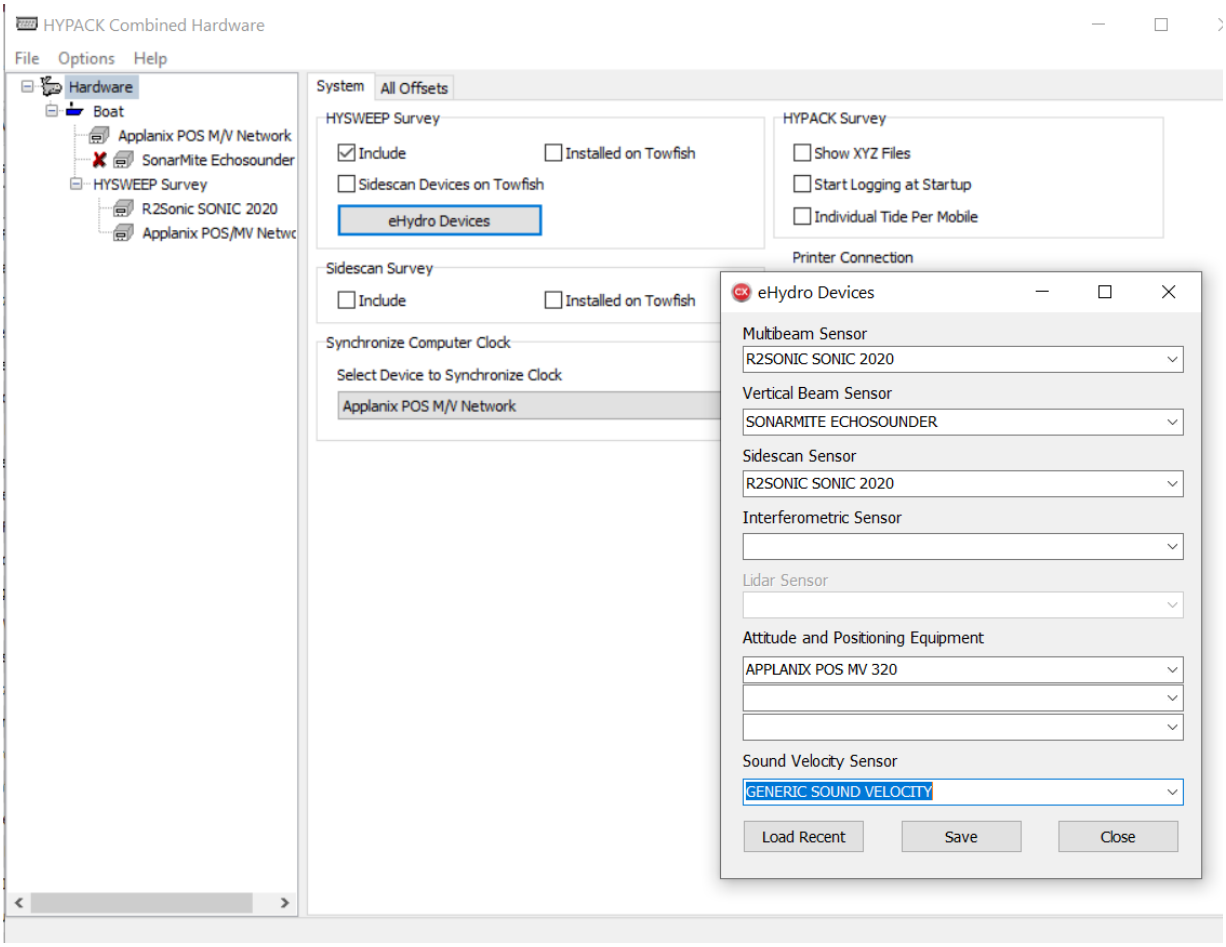
The latest for eHydro does XYZ and target export with metadata. Things are simplified by limiting the amount of metadata and the number of items included in an eHydro payload (export files).

Wherever possible, information is entered by the people who know it then carried around in survey data files. For example, the detailed list of survey devices included in metadata is integrated with hardware setup. Geodetic metadata starts with geodesy at survey time, but if changes are made in post-processing, metadata will get the update. This is reliable; the geodesy metadata, without doubt, belongs with the XYZ points.

Survey Devices

A detailed list of survey devices (sonar, positioning, etc.) is included in the metadata. Pick from the list (or enter) in HYPACK® HARDWARE as shown in the following figure. Selections are saved to survey data files (HSX) then inserted into metadata by post-processing.

eHydro Device Selections in HYPACK® HARDWARE.



SURVEY GEODESY

There are no UI changes for this. Geodetic parameters used during survey are automatically saved to HSX files then put into metadata in post-processing.

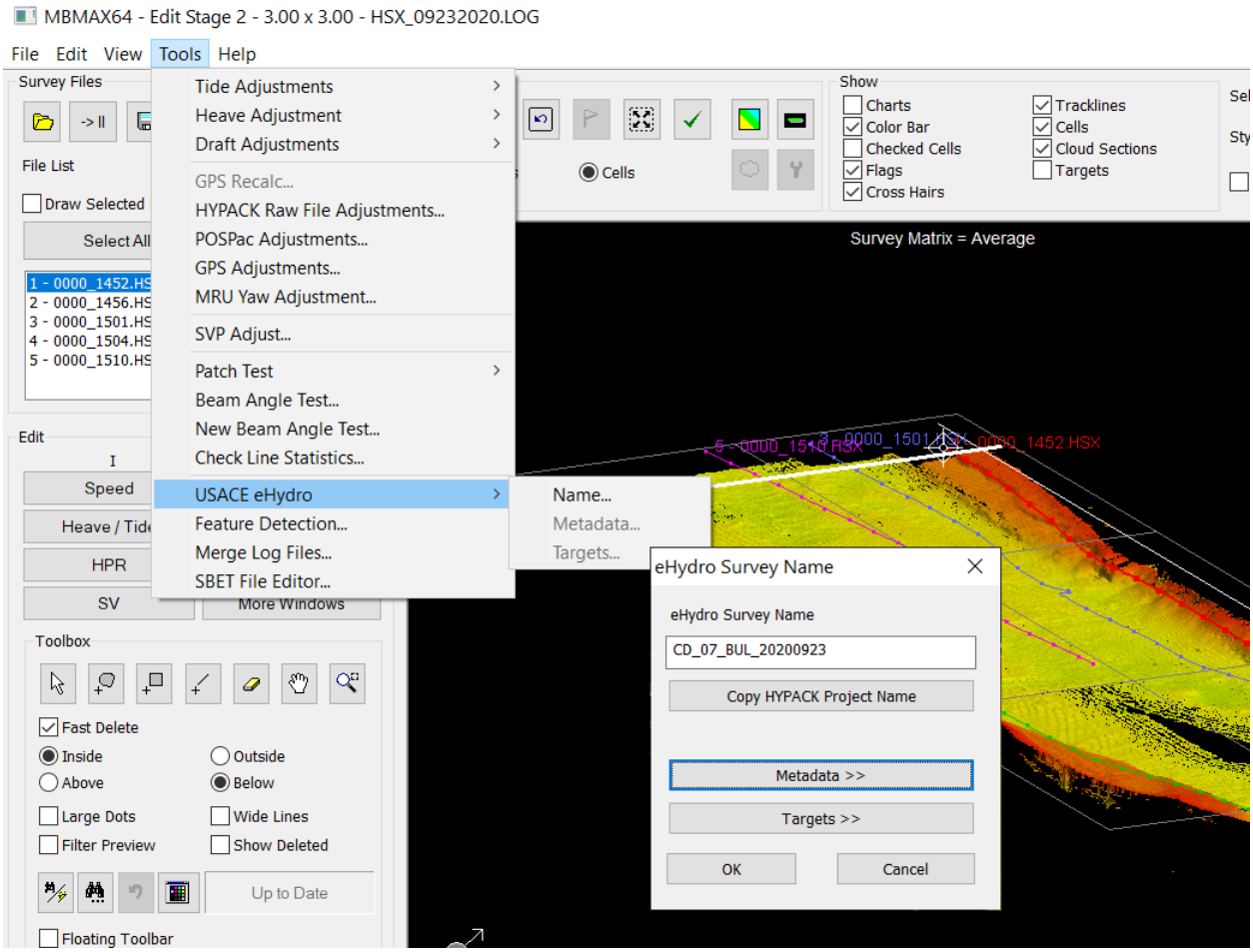
SURVEY IDENTIFICATION (NAMING)

This brings us to MBMAX64 (64-bit HYSWEEP® EDITOR).

To enter the name, select TOOLS-USACE eHydro-NAME.

We don't have an easy way (yet) to compose the complex eHydro name. That might come later. But, once the name is entered, it is remembered and used repeatedly for individual file naming.

The survey name for the C&D Canal (Figure 2) was picked out of a hat but is likely representative of eHydro naming. If HYPACK® project naming coincides with eHydro naming, the copy button is handy.



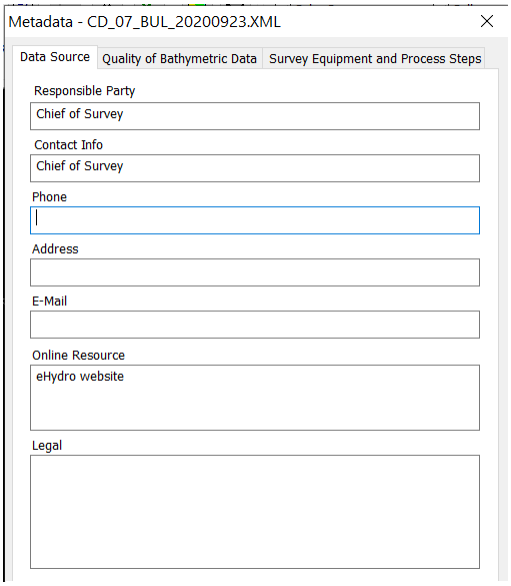
METADATA

A minimal list has been hashed out. Where possible, the ISO 19115 standard is used for metadata. This is troublesome because the previous standard (FDGC) doesn't translate well. We're still working on that. The metadata file will be CD_O7_BUF_20200923.XML.

Some metadata depends on the updates described above (device selections and geodesy logged to HSX files). So it's best to do the HYPACK® 2020 Q3 update then work with HSX files from the new survey programs.

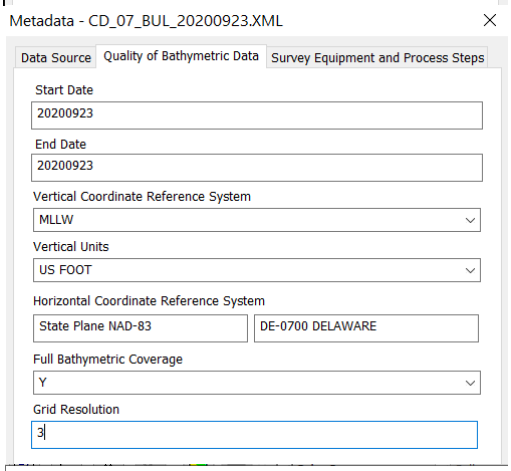
Data Source Information

Contact info, etc. that is remembered between surveys.



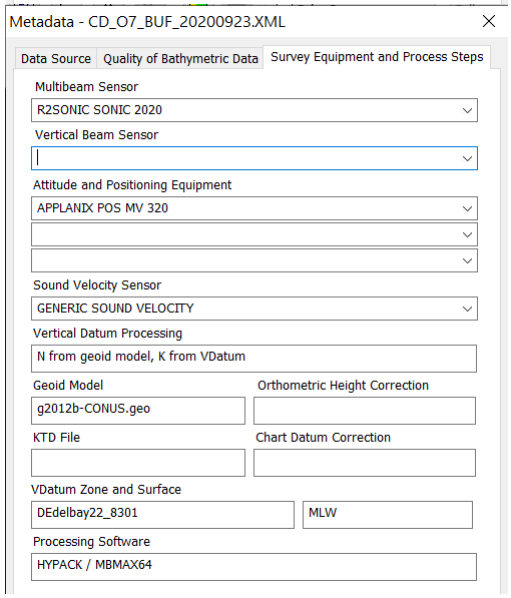
Quality of Bathymetric Data

Most of this is populated from survey geodesy. Grid resolution is typically matrix cell size.



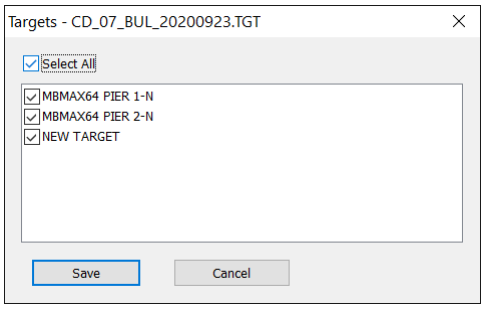
Survey Equipment and Process Steps

Information from HSX data files. If the survey is reprocessed (POSPac for example), the vertical datum section will be updated.



TARGET EXPORT

Target export is easy. Just select from the list to save to CD_O7_BUF_20200923.TGT.



XYZ EXPORT

MBMAX64 composes eHydro XYZ names as follows:

- High resolution grid points are saved to CD_O7_BUF_20200923.XYZ
- Plot resolution grid points are saved to CD_O7_BUF_20200923_P.XYZ
- All multibeam points are saved to CD_O7_BUF_20200923_FULL.XYZ

The HYPACK® SORT program also supports eHydro naming.

eHydro Naming Option in MBMAX64.