
Appendix: Colorado Water HydroBase Guest (ColoradoWaterHBGuest) Input Type

2010-08-20

Overview

The State of Colorado's HydroBase database is the primary database for water data in Colorado. However, using the HydroBase input type in TSTool (see the **HydroBase Input Type** appendix) requires a direct connection to the database, and a local installation of the database may not be available. The ColoradoWaterHBGuest input type provides internet web service access to historical data and is described here:

<http://cdss.state.co.us/DNN/ViewData/WebServices/tabid/90/Default.aspx>

Although the above web service provides many data types, the ColoradoWaterHBGuest input type currently only supports accessing diversion totals on day, month, and year interval. Support for additional data types is envisioned in the future.

The ColoradoWaterSMS input type (see the **Colorado Water SMS Input Type** appendix) provides access to real-time data using a web service.

ColoradoWaterHBGuest Web Service and Standard Time Series Properties

The standard time series identifier format for ColoradoWaterHBGuest time series is of the form:

`Location.DataSource.DataType.Interval~ColoradoWaterHBGuest`

The meaning of the parts is as follows:

- The `Location` is set to the State of Colorado's water district identifier (WDID) for structures.
- The `DataSource` is set to the providing agency (e.g., DWR for diversion data).
- The `DataType` is set to the "measurement type" described in the State's web service documentation (e.g., `DivTotal` for total diversions through a structure). Refer to the **HydroBase Input Type** appendix for a full list of time series data available in HydroBase.
- `Interval` is `Day`, `Month`, or `Year`, as requested. The interval string is converted from HydroBase conventions of `Daily` and `Annual` (monthly and annual diversion data are stored together in HydroBase and are identified as `Annual` data).
- The `ColoradoWaterHBGuest` input type indicates that the data are being read from the ColoradoWaterHBGuest web service.

Limitations

The following limitations of the web service may impact users of the data.

- Data type – only the `DivTotal` data type has been implemented. Additional data types will be supported in the future.
- Time series metadata – some metadata such as units and measurement counts currently are not available from the web service. This information will be displayed as blank in the time series listing.

- Performance – time series metadata (lists of location/data type/interval combinations) are retrievable from the web service by water district, water division, and single entry. In order for TSTool to provide the user with “drill down” capability starting with a full list of available data, it is necessary to request blocks of data from the web service. However, requesting too large a block results in performance problems due to the bandwidth necessary to transmit data across the network. Consequently, TSTool utilizes caching to store lists of time series metadata, grouped by water district, data type, and interval. The cache is populated based on user requests. Consequently, the first time that data are requested for a district, performance will be slower while the data are retrieved. Subsequent listing of the time series should be fast. Time series data are not currently cached and therefore there may be noticeable slowing for large queries. Additional optimization of data transfer will be evaluated as web service use increases.