Flood Characterization and Notifcation Tools:

USGS **WaterWatch** and **WaterAlert**

Todd Koenig, USGS Office of Surface Water

WaterWatch

Compares today's conditions with the same calendar day of past recorded years.

WaterWatch: Current Streamflow

Uses a color range to show current streamflow relative to the calendar-date history of streamflow at each station:

WaterWatch: Current Streamflow

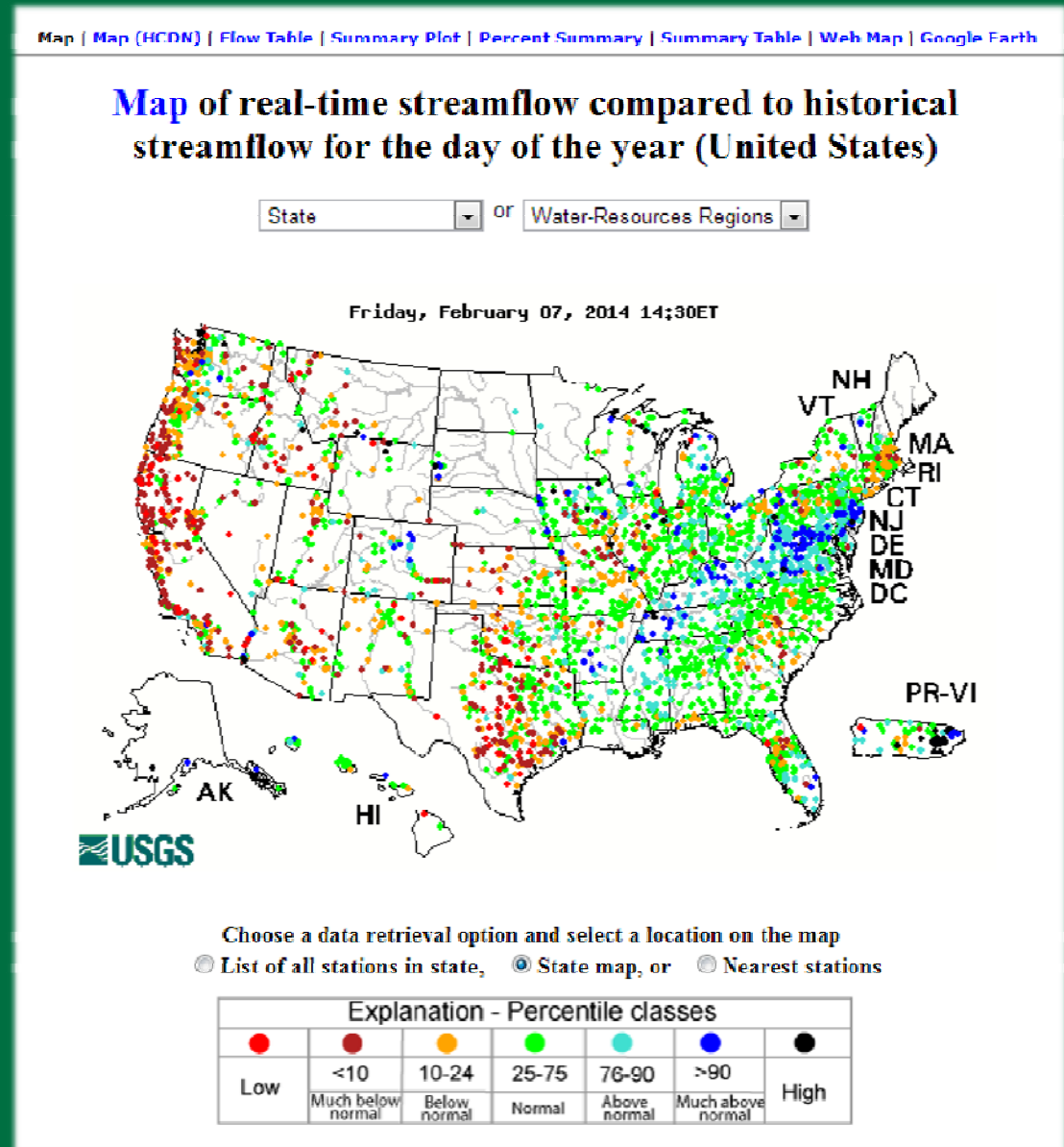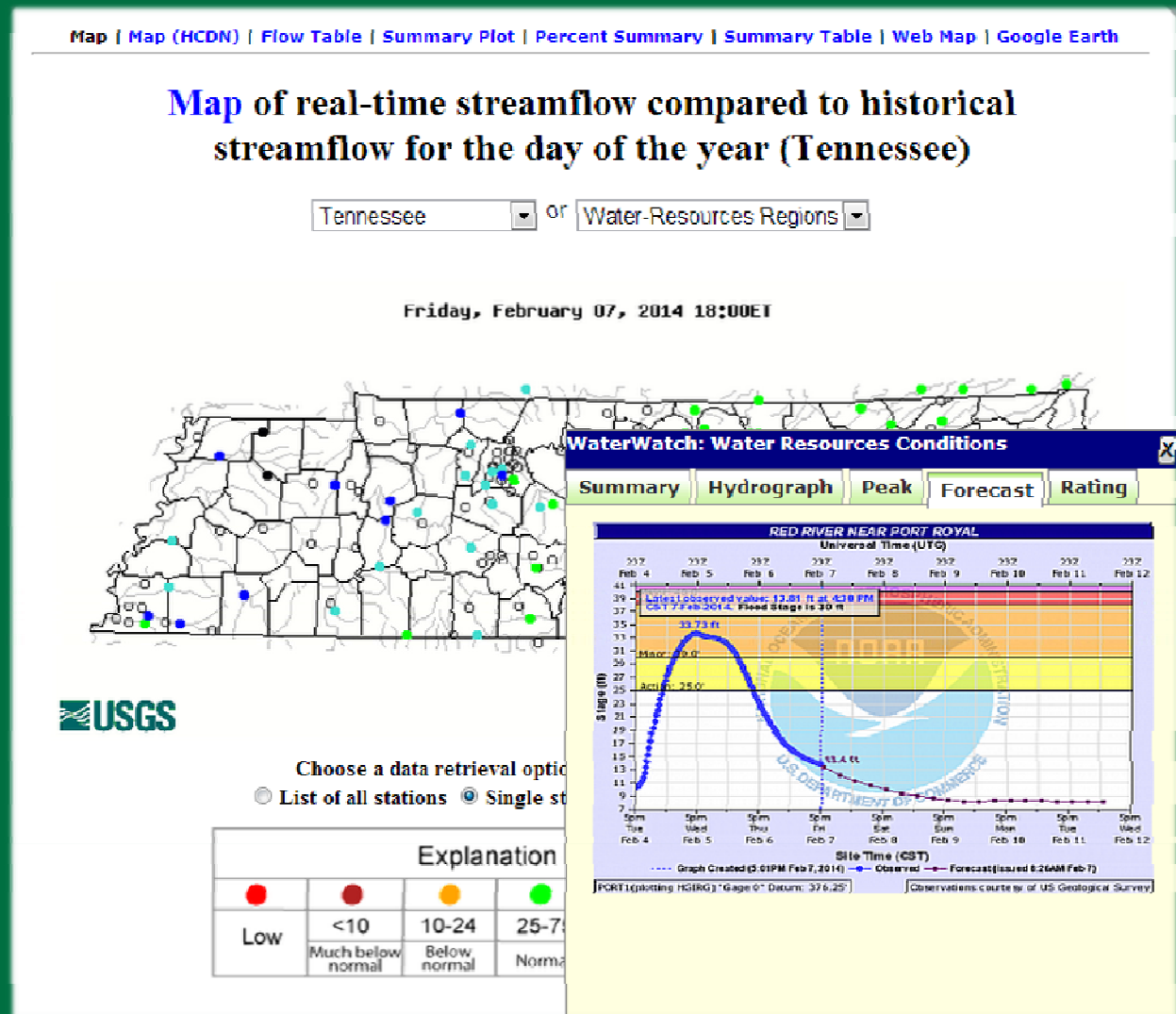**Additional information available for sites:**

- **Summary**
- **Hydrograph**
- **Peak comparison**
- **NWS forecast**
- **Rating curve**

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WaterWatch: Flood

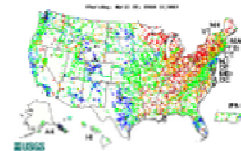**Displays stations where the current streamflow exceeds 95% of past recorded streamflows of the same calendar date:**
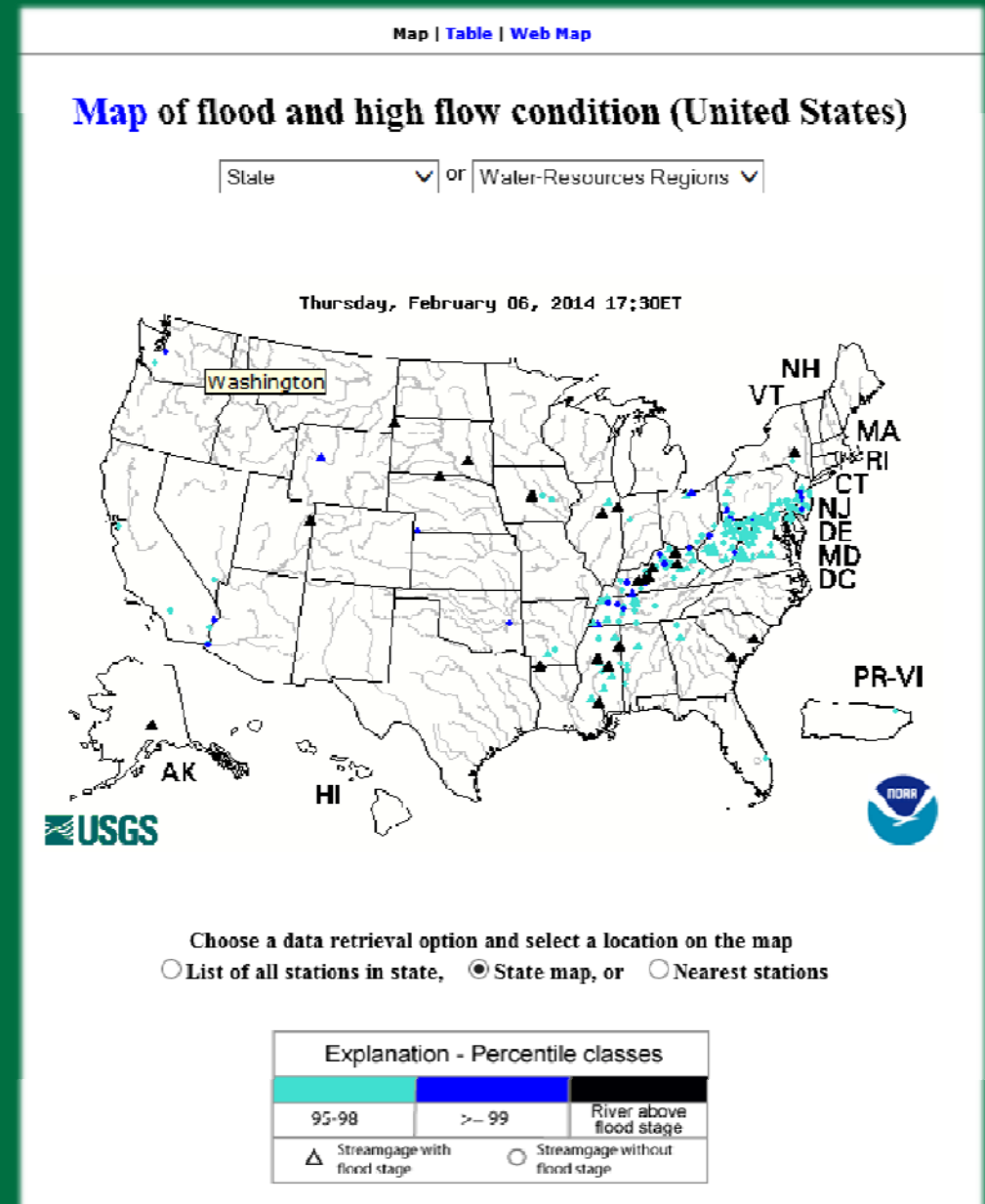
WaterWatch: Toolkit
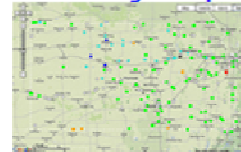
Build many different views of the data:

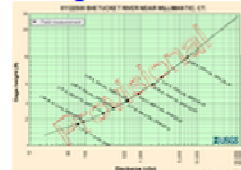## USGS WaterWatch Toolkit

Streamflow Conditions Map Builder
This builder is used to customize the streamflow conditions maps in size and color.

State Google Map Builder
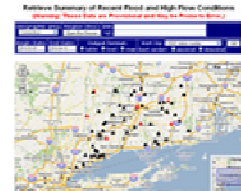A Google Maps version of the streamflow conditions map can be created in users web sites.

Rating Curve Builder
The rating curve builder is used to create a USGS streamflow rating curve. The rating table is from the USGS ratings depot. Field measurements can also be appended to the curve.
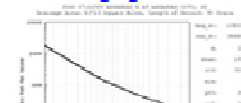
Flood Table Builder
This tool summarizes the flood and high flow conditions for a state or a region for a given time period. Tables and Google Maps are used to summarize conditions and to show locations, respectively.
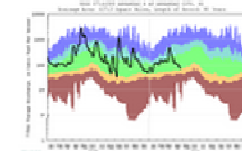
Streamgage Statistics Retrieval Tool
The "streamgage statistics" retrieval tool provides a list of basic summary statistics and
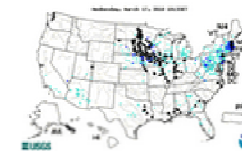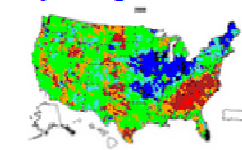
Duration Hydrograph Builder
The builder is used to present a time-history of streamflow for the past two years along with historical streamflow percentiles for individual streamgages.
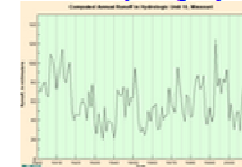
Streamflow Map Animation Builder
This tool is to create a streamflow map animation for a time period for real-time streamflow and flood-and-high flow maps, respectively.
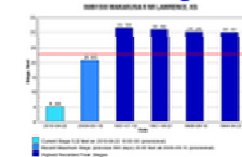
Hydrologic Unit Runoff Maps
Hydrologic unit runoff and runoff condition maps since 1901 are available.

Runoff Hydrograph
Monthly, quarterly, and annual HUC runoff time-seris plots are avialable in a HUC area and a state.

Flood Tracking Chart
A URL is provided to create flood-tracking chart which shows current state, recent peak stage, historical highest peaks, and

WaterWatch: Flood Table

Build a table of flood data including:

- **Stage**

- **Streamflow**

- **Historic rank**

- **Years of record**

Summary of Recent Flood and High Flow Conditions
(2013-08-01 -- 2013-09-30)
["--", no data; "<", less than all historical peaks]

USGS station number	USGS station name	Drain. area [mi²]	NWS flood stage [ft]	No. of days above flood stage	NWS flood class	Highest peak from 2013-08-01 to 2013-09-30				Historical Peaks	
						Date	Stage [ft]	Stream flow (date) [ft³/s]	Rank	No. of years	Max. (year) [ft³/s]
06709000	PLUM CREEK NEAR SEDALIA, CO.	274	8	1	▲	2013-09-14	8.87	1260	4	28	7700 (1945)
06752260	CACHE LA POUDRE RIVER AT FORT COLLINS, CO	1127	10.5	1	▲	2013-09-13	10.79	8120	1	38	7710 (1999)
07105500	FOUNTAIN CREEK AT COLORADO SPRINGS, CO	392	8	2	▲	2013-09-12	10.66	8670	3	37	10100 (1994)
07106300	FOUNTAIN CREEK NEAR PINON, CO	865	7	1	▲	2013-09-13	8.68	11800	3	40	19100 (1999)
07109500	ARKANSAS RIVER NEAR AVONDALE, CO.	6327	7	3	▲	2013-09-14	9.46	11100	11	61	50000 (1965)
07124200	PURGATOIRE RIVER AT MADRID, CO.	505	7	1	▲	2013-08-04	7.09	6130	7	40	14300 (1976)
07128500	PURGATOIRE RIVER NEAR LAS ANIMAS, CO.	3318	9	4	▲	2013-08-10	9.54	2200	55	74	70000 (1955)

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WaterWatch: Flood-Tracking Chart

Compare the current stage to:

- NWS flood stage
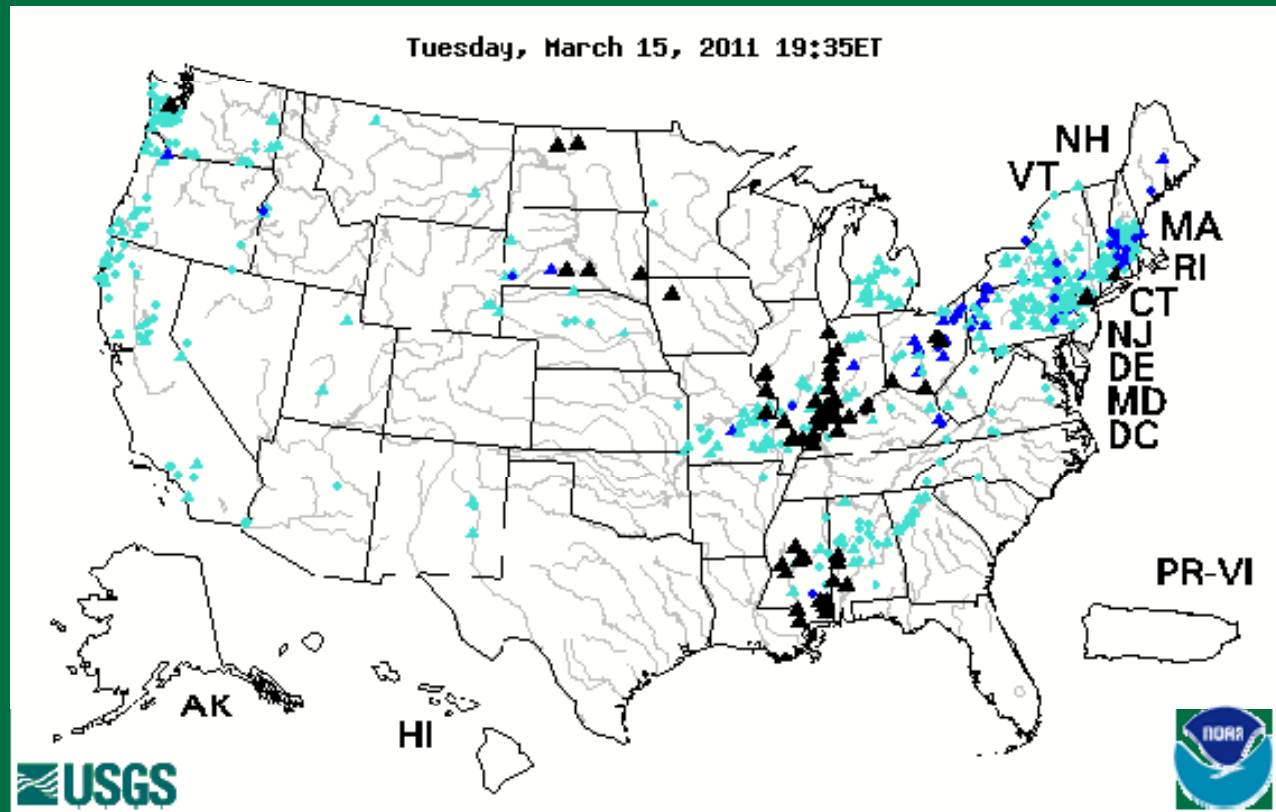
- peak of the past 365 days

- 4 highest peaks of record.
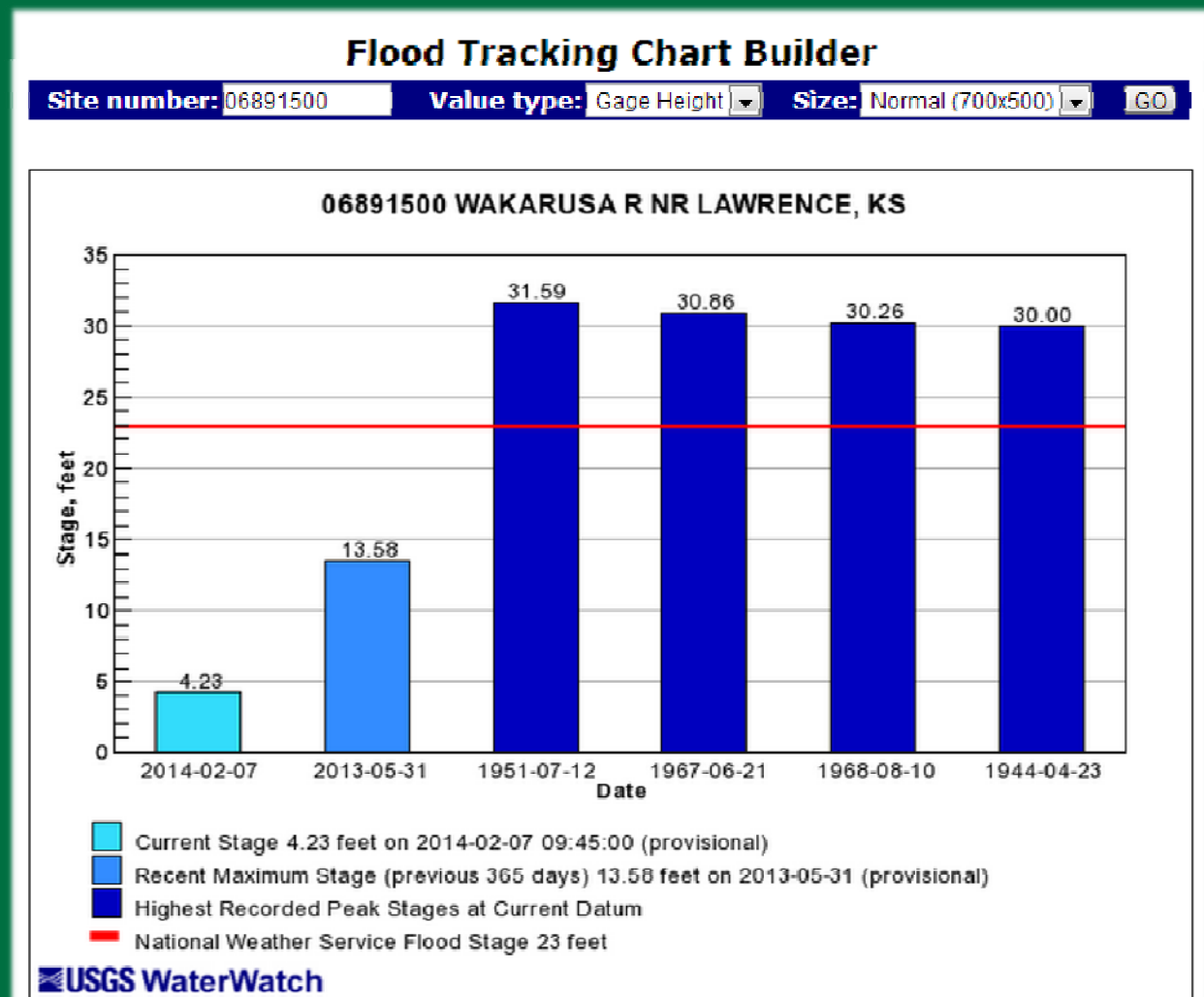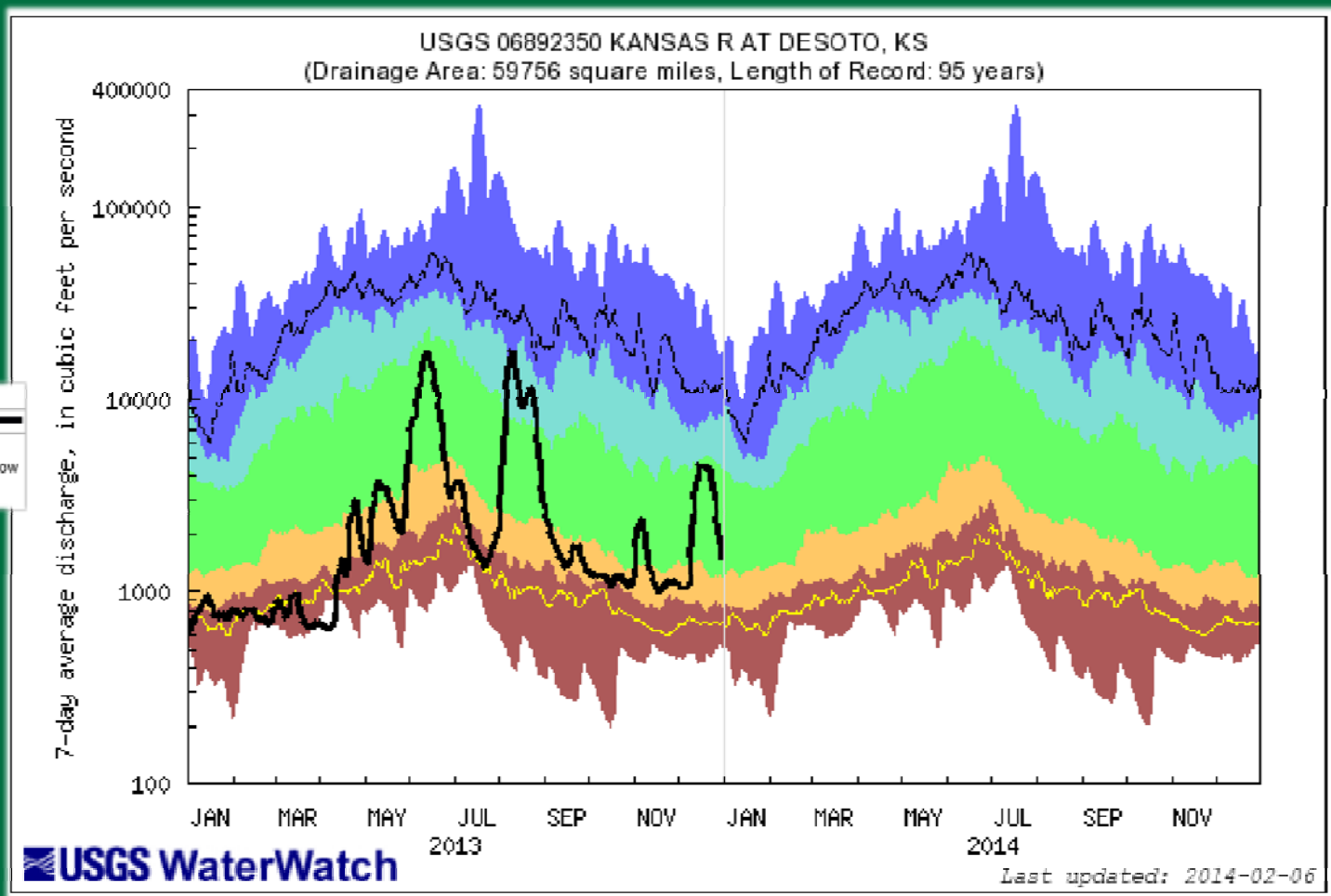

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WaterWatch: Animation

Create a visual time-series of daily conditions

WaterWatch: Duration Hydrograph

Time-history of streamflow for past 2 years with historical streamflow percentiles:

WaterWatch: Cumulative Streamflow Hydrograph

**Compare the current cumulative runoff to historic annual runoff:**

USGS 06892350 KANSAS R AT DESOTO, KS
(Drainage area: 59756 square miles, Length of Record: 96 year)

Cumulative flow between daily 25th and 75th percentiles
Cumulative streamflow of daily median
Lowest observed cumulative flow (1956)
Highest observed cumulative flow (1993)
Observed cumulative flow (2014)

Last updated: 2014-02-07
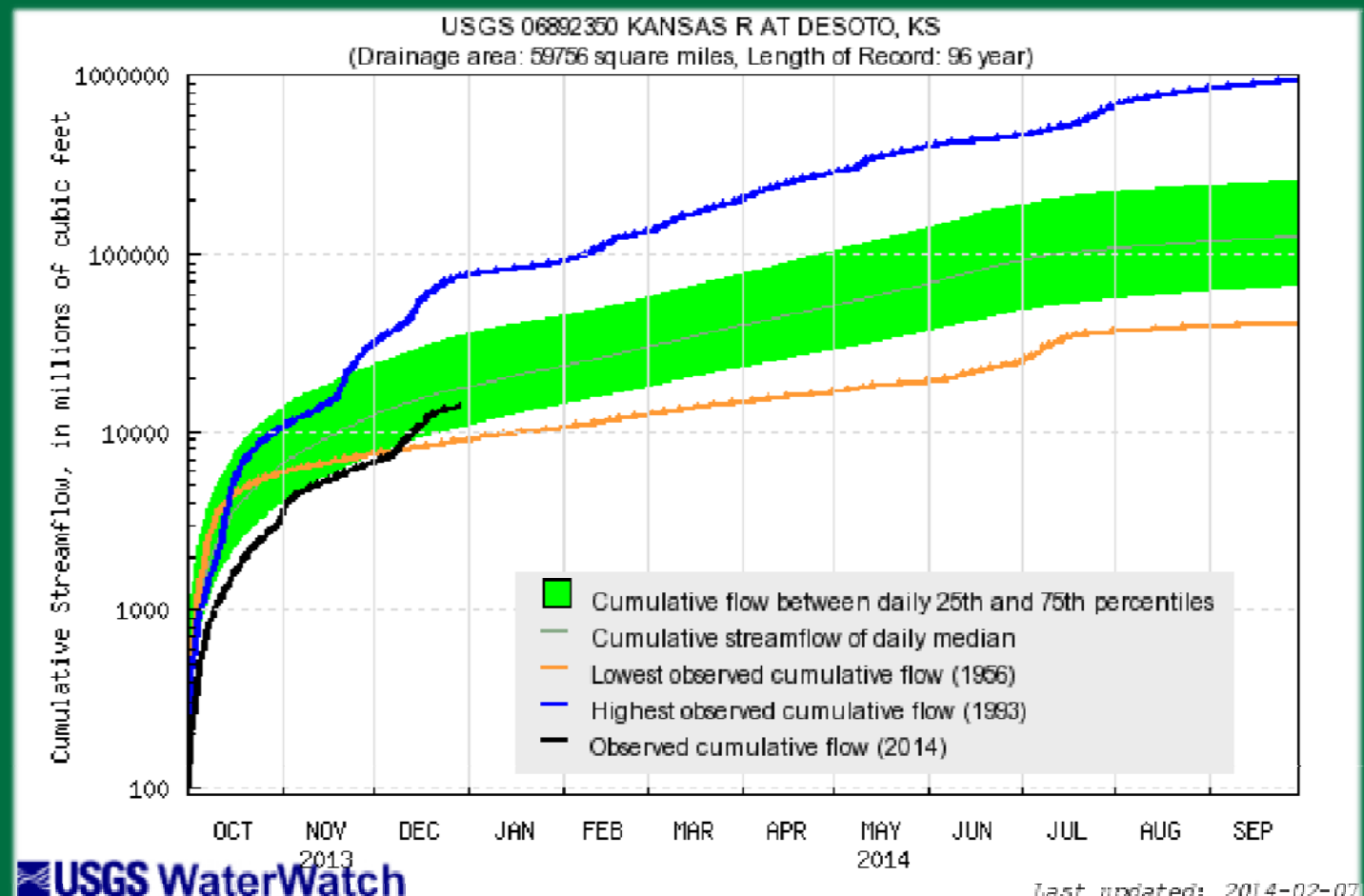
WaterWatch: Raster Hydrograph

View seasonal and annual trends in the entire daily record

Raster hydrograph of daily flow at USGS 11179000 ALAMEDA C NR NILES CA
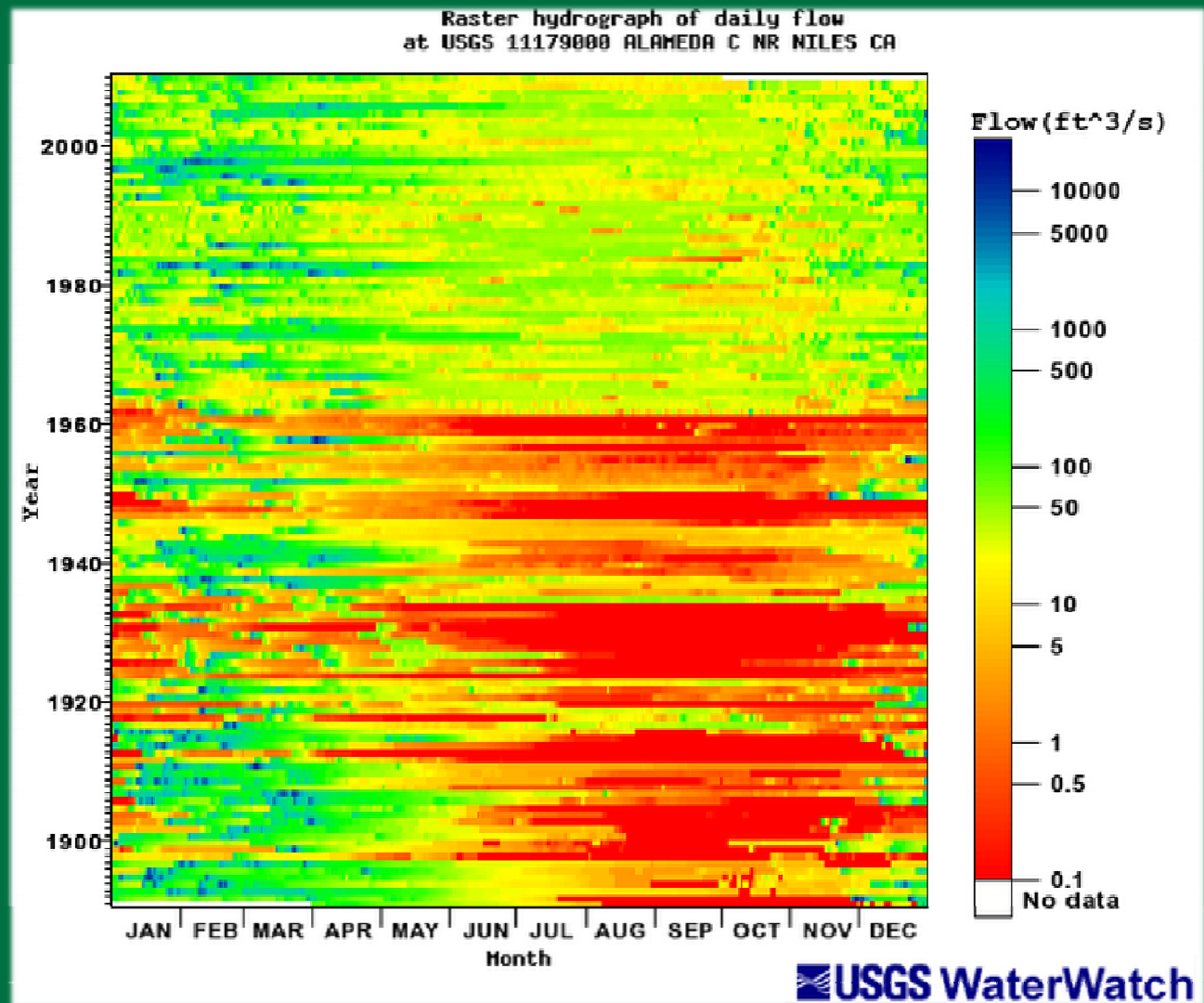
WaterWatch: Rating curve

Find rating curves for active USGS streamgages
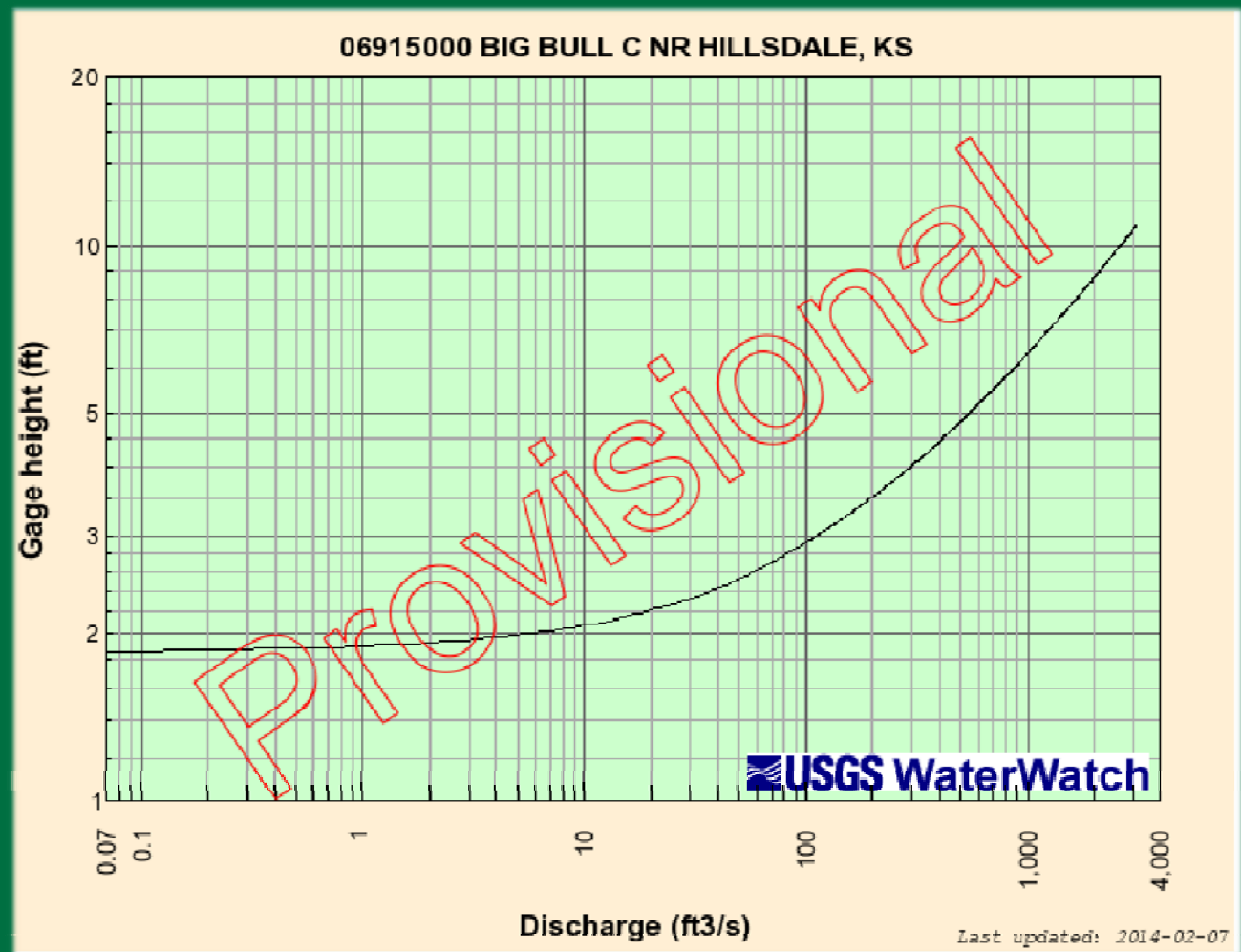
WaterAlert

Map-based utility where users can create custom mobile text or email notifications for stream conditions that they define.

USGS

WaterAlert

Users can zoom in to gage locations with the map or type in place names or site numbers.

![USGS logo]
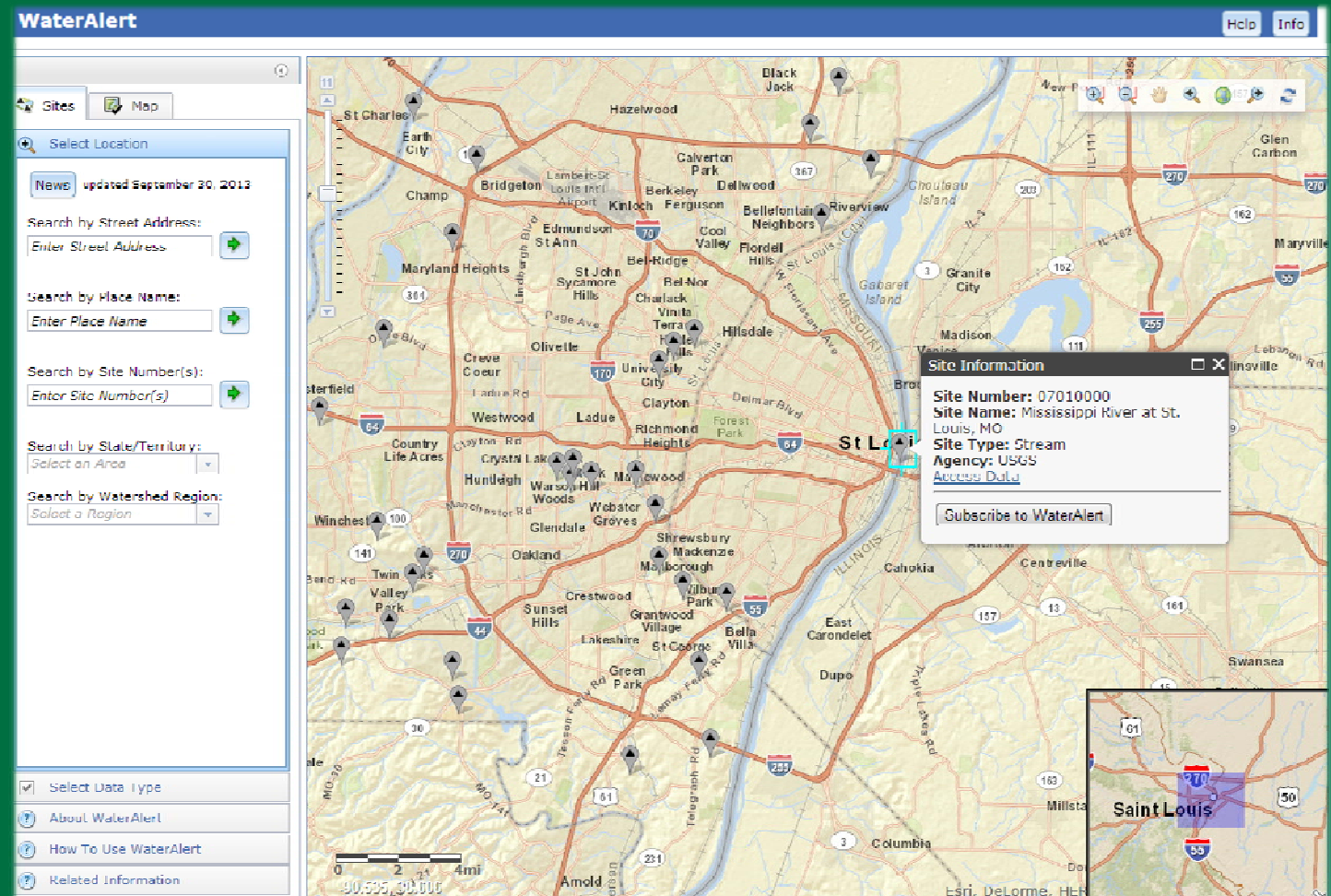
WaterAlert: subtopic

Users choose:

- **Station**

- **Hourly / Daily repetition**

- **Stage thresholds**

- **Discharge thresholds**

USGS

USGS WaterWatch and WaterAlert

http://waterwatch.usgs.gov

http://maps.waterdata.usgs.gov/mapper/wateralert/

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