

Kentucky Water Science Center

Real Time Monitoring Networks

First Order of Business

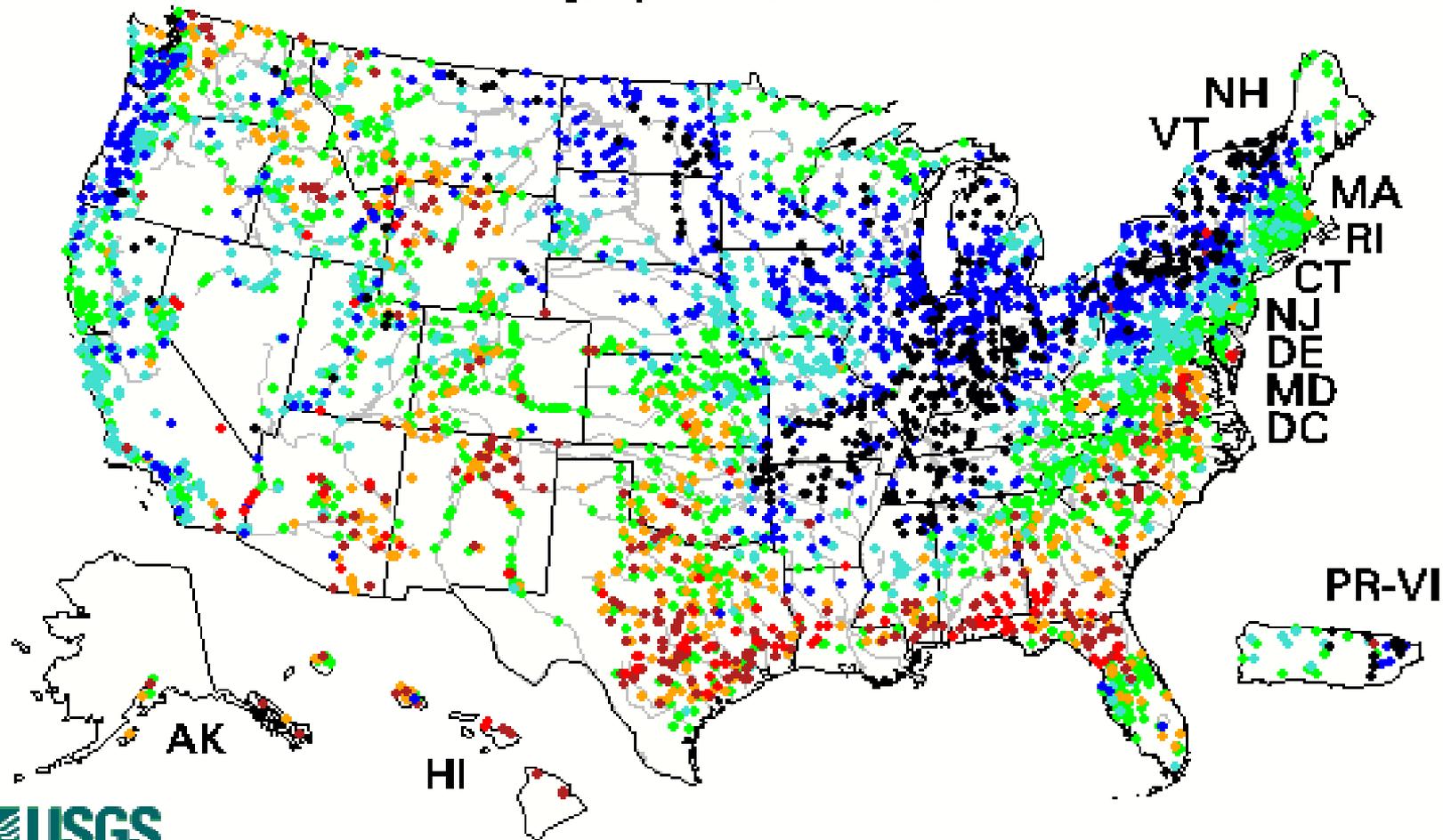
THANK YOU!!

It is because of your support that Kentucky has a diverse and modern network



USGS Streamgaging Activities

Wednesday, April 27, 2011 19:30ET



History of KY WSC gages

- ▶ First gage was Tennessee River nr Paducah – Started in 1875 (stage only). It then was operated from 1889–1989. Water quality site today.
- ▶ KY River Lock 4 at Frankfort – Stage data started in 1905. Flow started in 1925
- ▶ Dix River at Danville – Stage data started in 1905. Flow started in 1942
- ▶ Cumberland River at Cumberland Falls – First continuous streamflow gage started in August 1907. Went to 1911, started again in 1914–2005 and then brought back in 2010
- ▶ KY River at Lock 10 at Winchester is the longest continuous running station in KY. Started in October 1907 to Present

Status of the KYWSC Real-Time Networks

Surface Water

198 total sites

Stage only – 53 sites

Discharge – 145 sites

Water Quality

48 sites

Temperature only – 11 sites

4/5 chemical parameters(temp, DO, pH, SC, & turbidity)–37 sites

Ground Water

1 site

05/11/2011

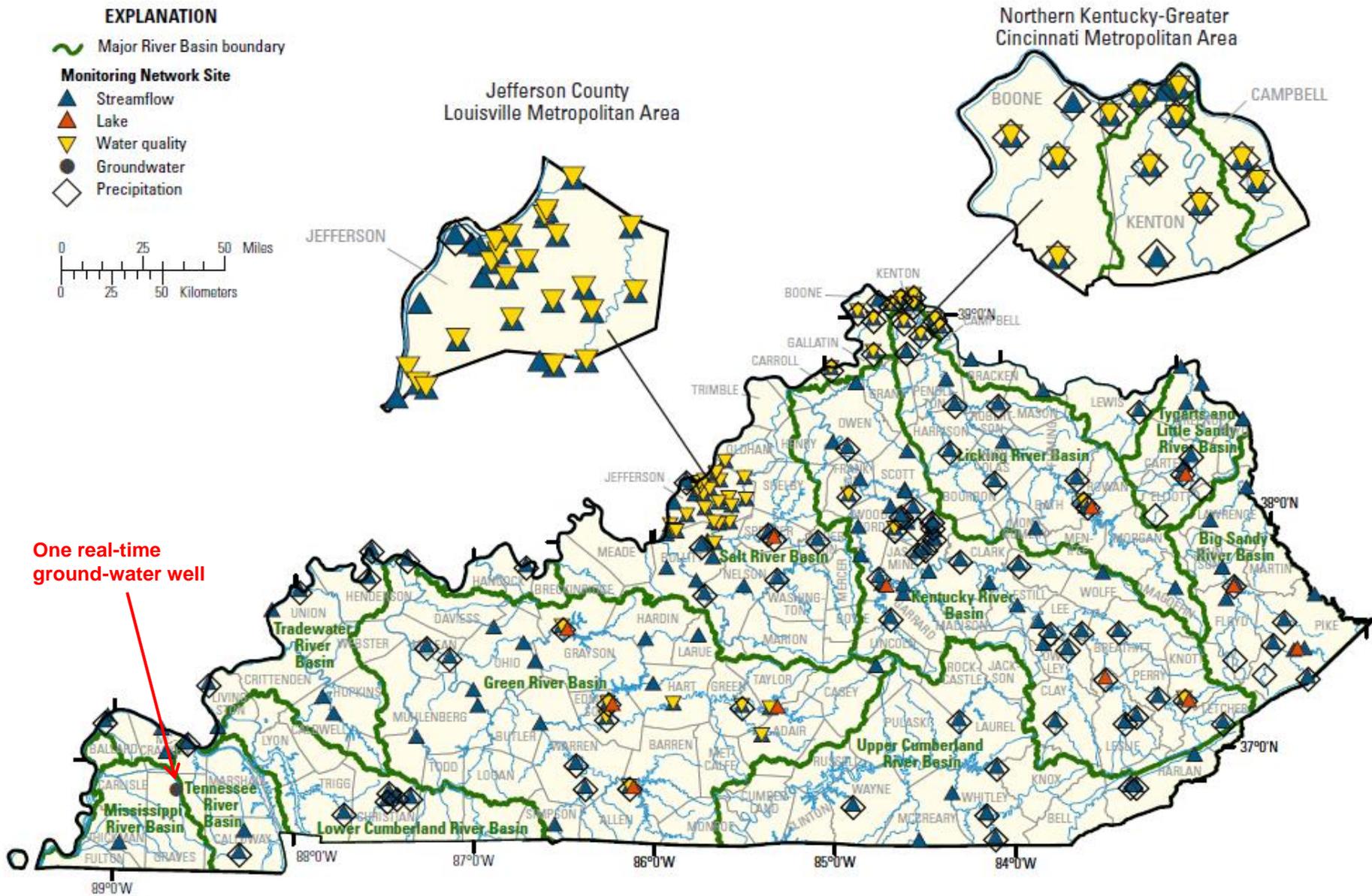


Figure 3. Active monitoring network sites, Kentucky, 2011.

What you get from a KY real-time gage

- ▶ Real-time data 24/7/365
- ▶ Data for NWS flood warnings & forecasts
- ▶ 35,040 data points per parameter annually that are:
 - Publically available
 - Quality assured
 - Stored long term
- ▶ One of the Nation's lowest O&M costs



The USGS Streamgaging Network

Streamgages

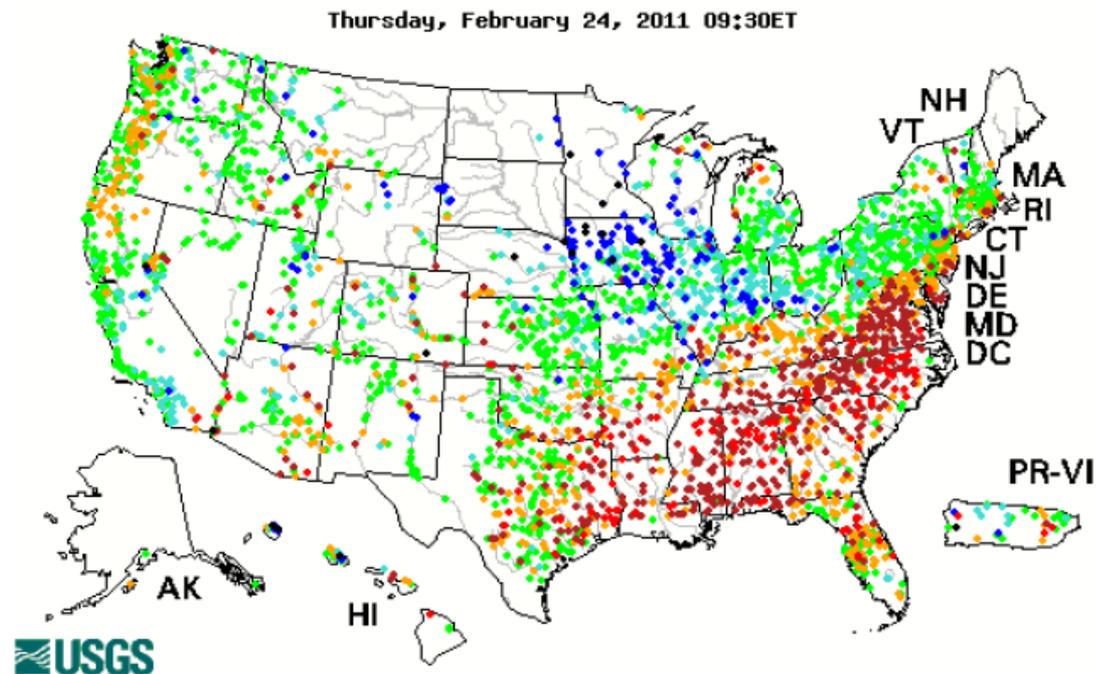
- 7,700 gages
- 99 % real-time
- All on web

Network Costs

- \$141M per year
- 850+ Agencies

Funding Sources

- | | | |
|-----------------------------------|-------|-----|
| •State / Local Agencies | \$63M | 45% |
| •Other Federal Agencies | \$29M | 20% |
| •USGS Cooperative Program | \$24M | 17% |
| •USGS Nat Streamflow Info Program | \$25M | 18% |

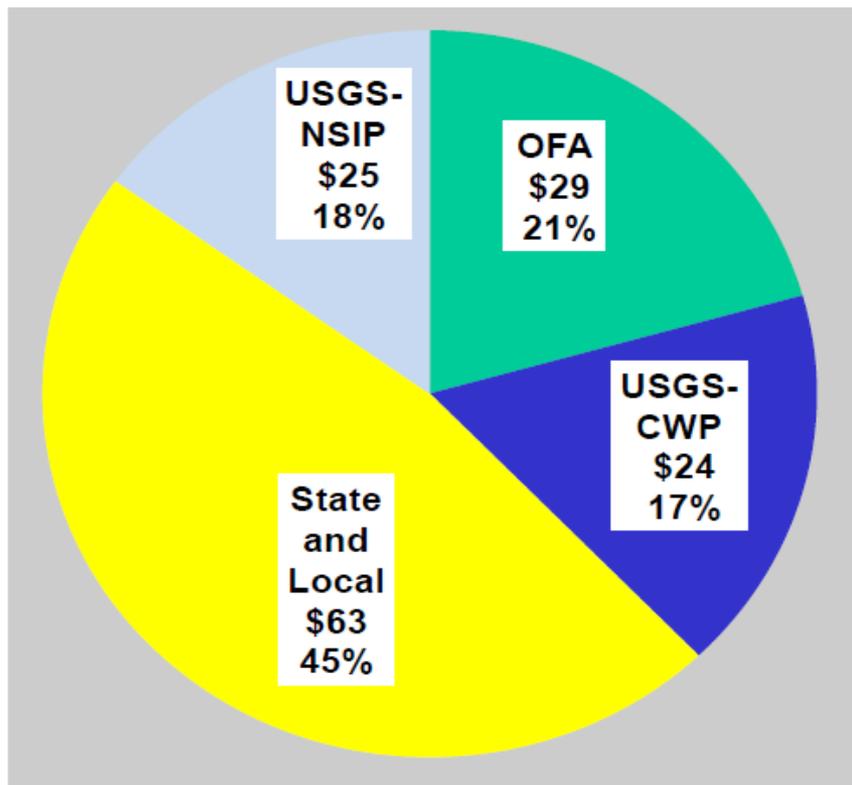


2010

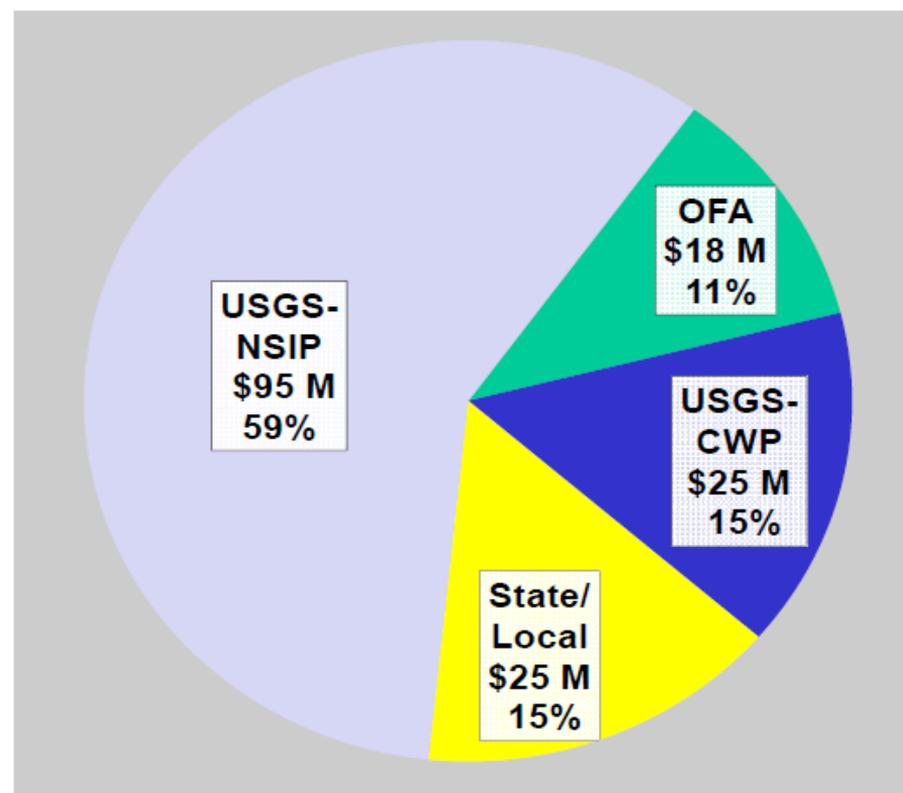
USGS Streamgauge Funding

Present and Fully-Funded NSIP Scenario

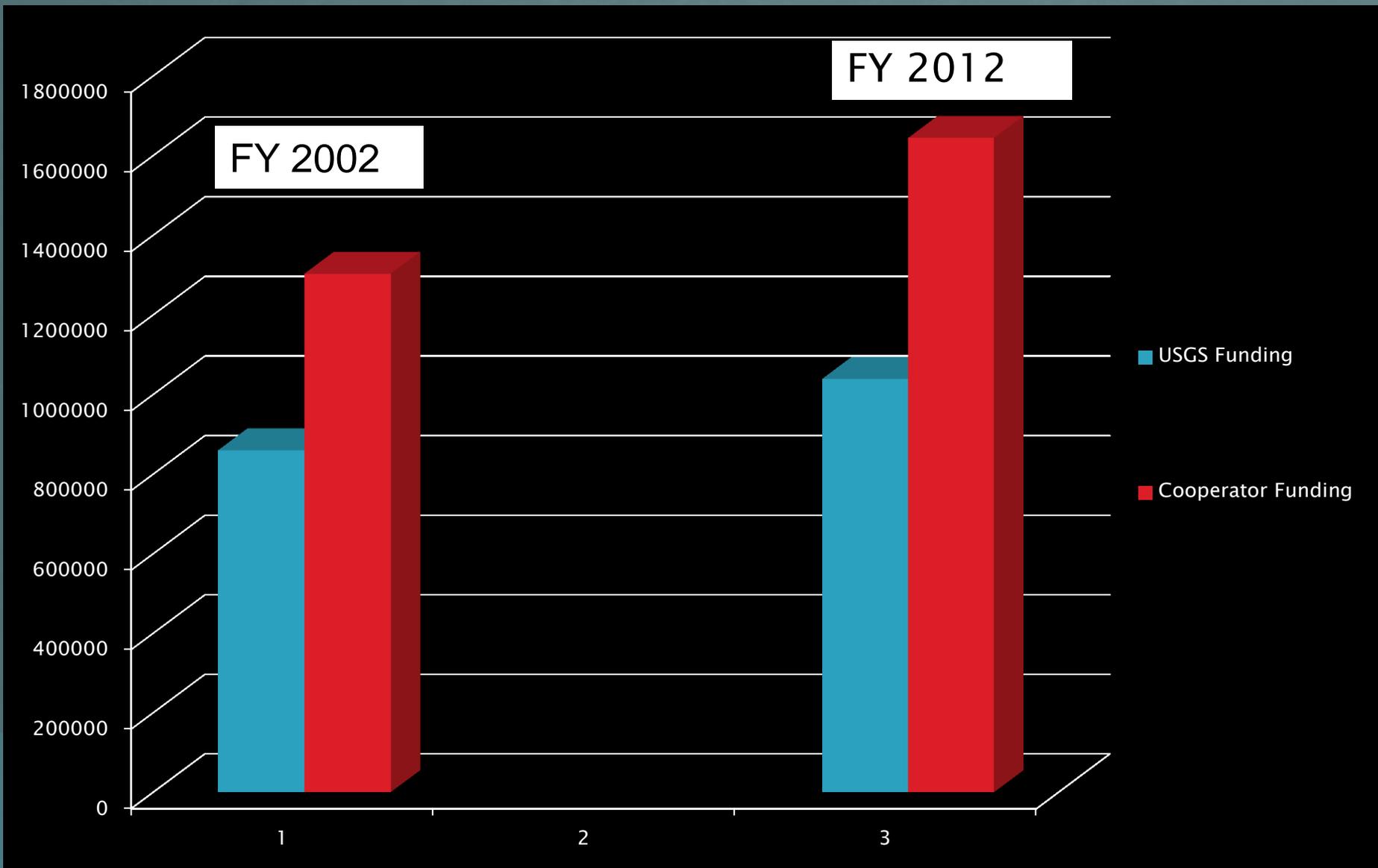
USGS Streamgauge Network Funding (\$141M, 7600+ streamgages)



USGS Streamgauge Network with a fully funded NSIP (\$163M, 9387 streamgages)

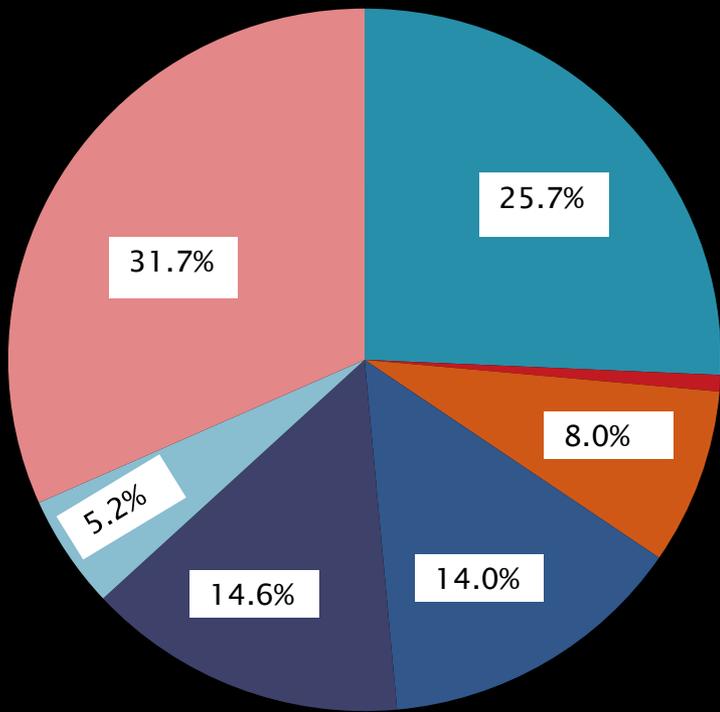


Kentucky Hydrologic Monitoring Funding



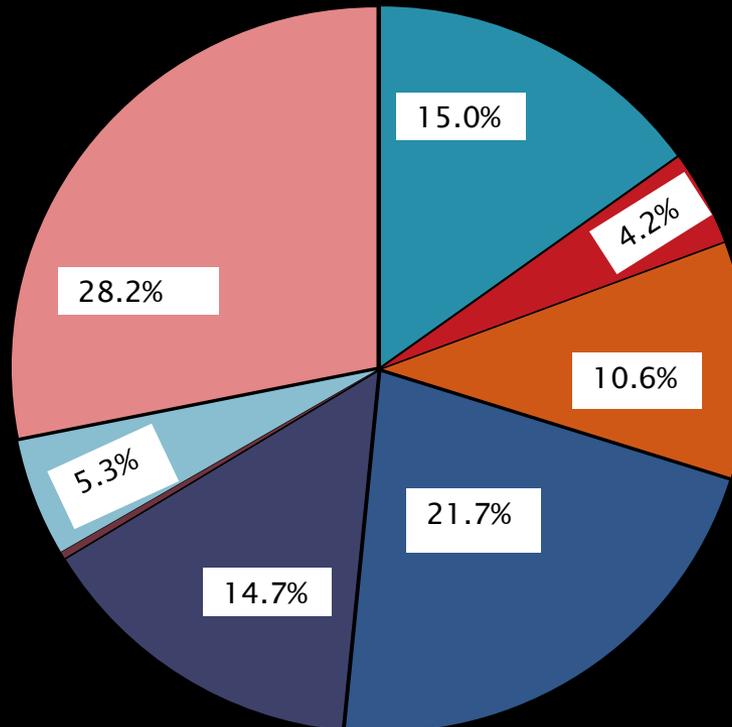
Kentucky Streamgaging Funding

FY 2002



- Other Federal Agencies
- Energy 0.8%
- NSIP
- Water or Sewer Districts
- State Agencies
- Academia
- Cities or Counties
- USGS Matching Funds

FY 2012

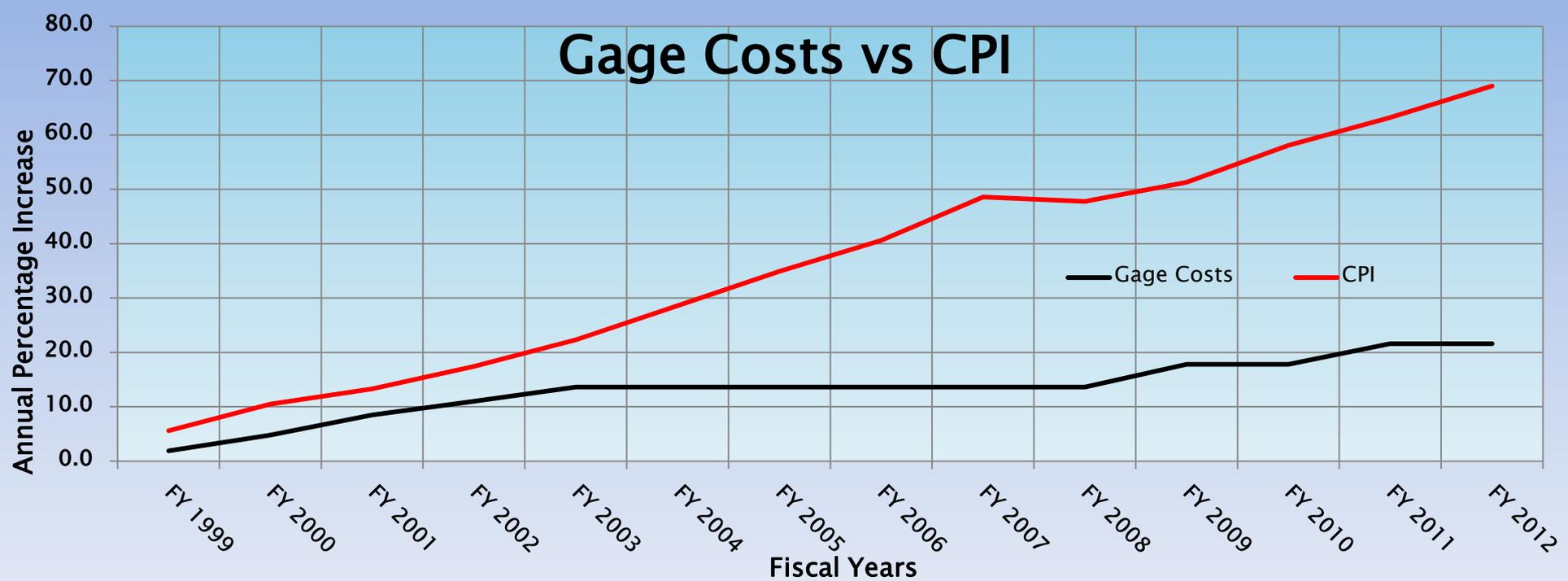


- Other Federal Agencies
- Energy 4.2%
- NSIP
- Water or Sewer Districts
- State Agencies
- Academia 0.3%
- Cities or Counties
- USGS Matching Funds

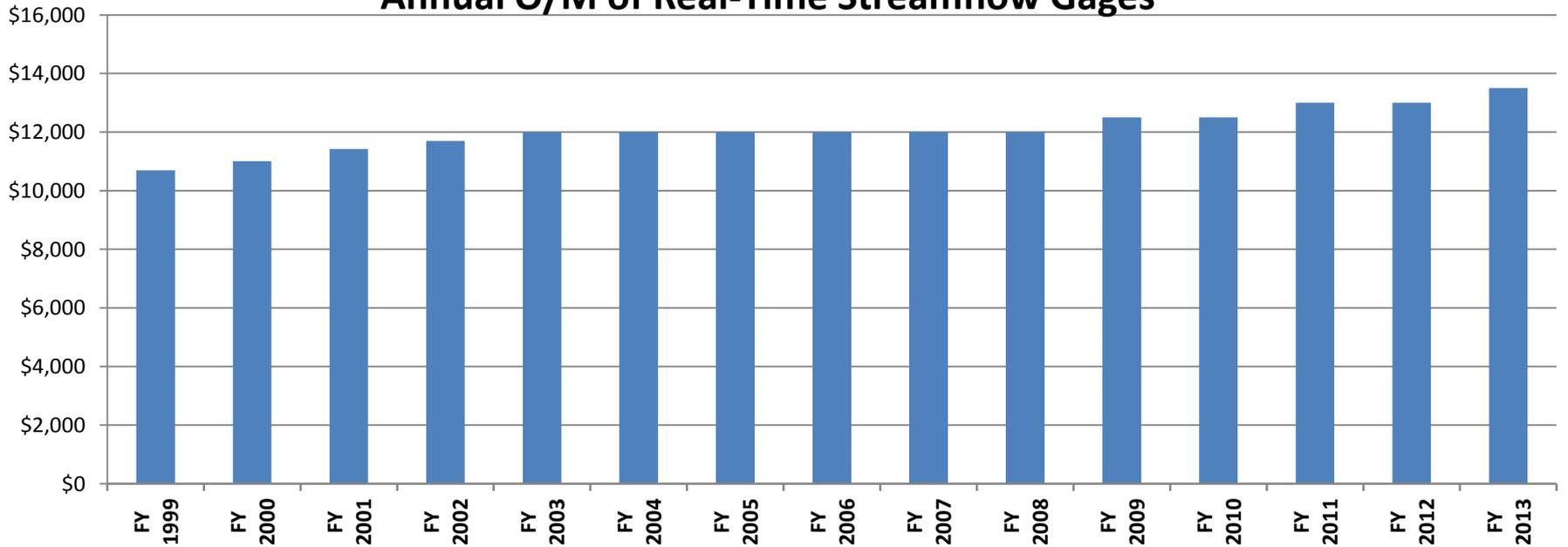
A decade of diverse cooperators!!



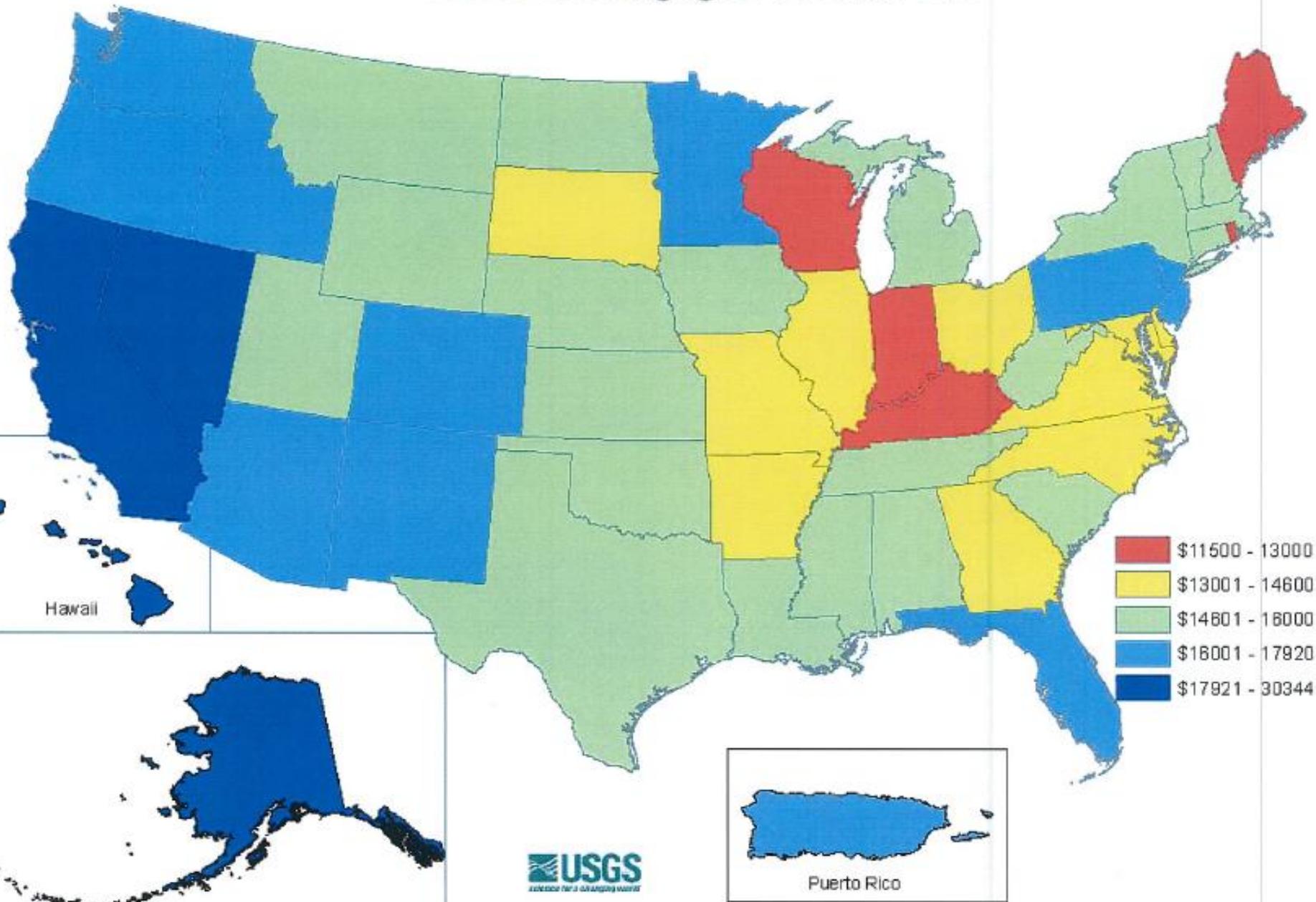
Gage Costs vs CPI



Annual O/M of Real-Time Streamflow Gages



USGS Streamgages Cost in 2012



Created April 2, 2012