A scenic landscape featuring a river with a dam, mountains, and a person on a zipline. The text is overlaid on the image.

USGS National Streamflow Information Program

J. Michael Norris (mnorris@usgs.gov)

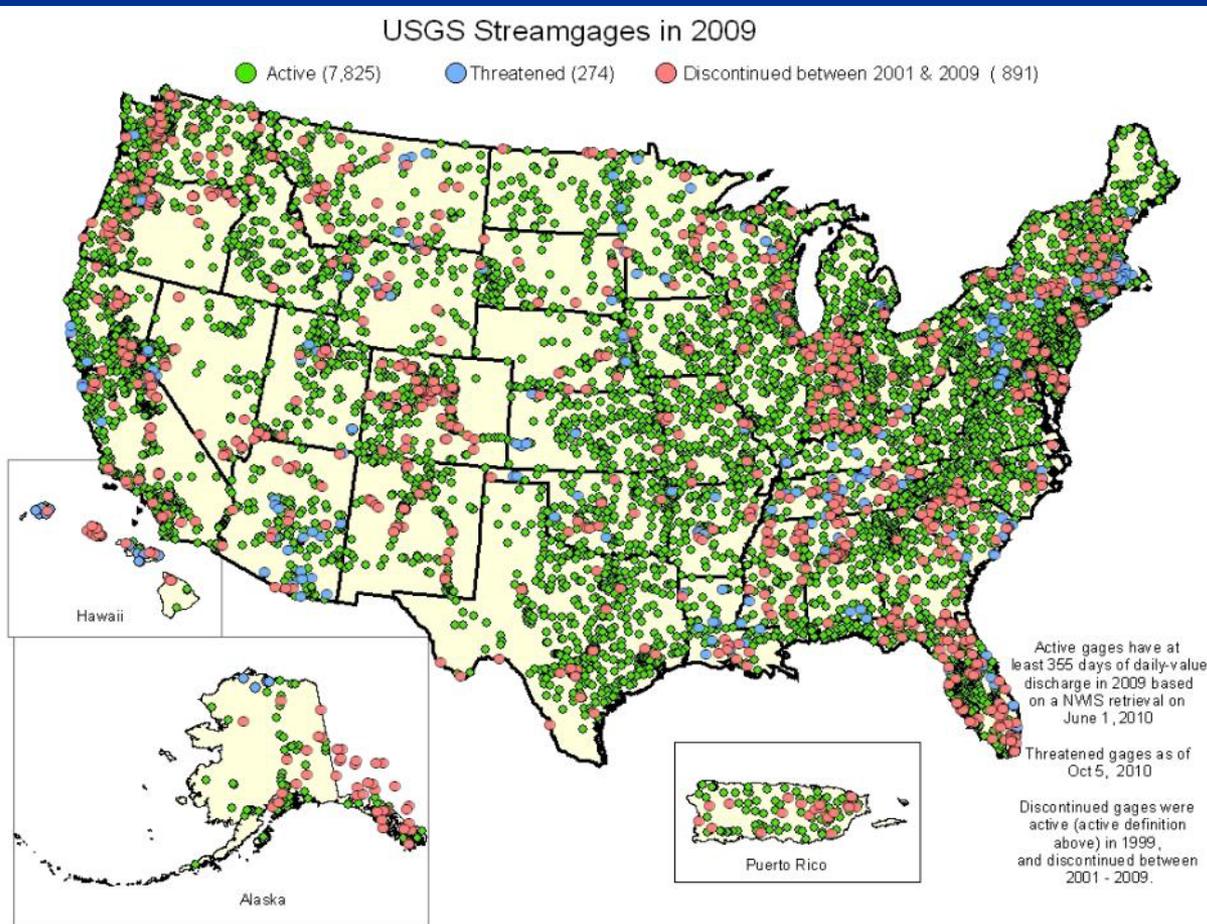
Coordinator, National Streamflow
Information Program

- 
- A photograph of a streamgaging station on a river. In the background, a large concrete dam is visible, with a rocky cliff face to its left. A wooden walkway with a metal railing crosses the river. On the left side of the walkway, there is a cylindrical metal structure with a solar panel mounted on top. On the right side, there is a large, cylindrical metal tank supported by a wooden frame. The river water is turbulent and white with foam as it flows over rocks. The sky is overcast.
- USGS Streamgaging Network
 - National Streamflow Information Program (NSIP)
 - Status of NSIP Implementation
 - Q & A

Expanding Uses of Streamflow Information

- Resource appraisal and allocation
- Design of Nation's water infrastructure
- Flood hazard planning and forecasting
- Reservoir and power operations
- Water quality management
- Instream flows for habitat conditions
- Understanding changes of streamflow
- Recreational safety
- More?

The USGS currently collects, stores, and provides streamflow data from over 7,600 streamgages



**San Francisquito Cr.
nr. Stanford, CA**



Pacific Cr. nr Moran,⁴ WY

NSIP, Other Federal, Regional, Tribal and State & Local Agency Streamgaging Partnerships

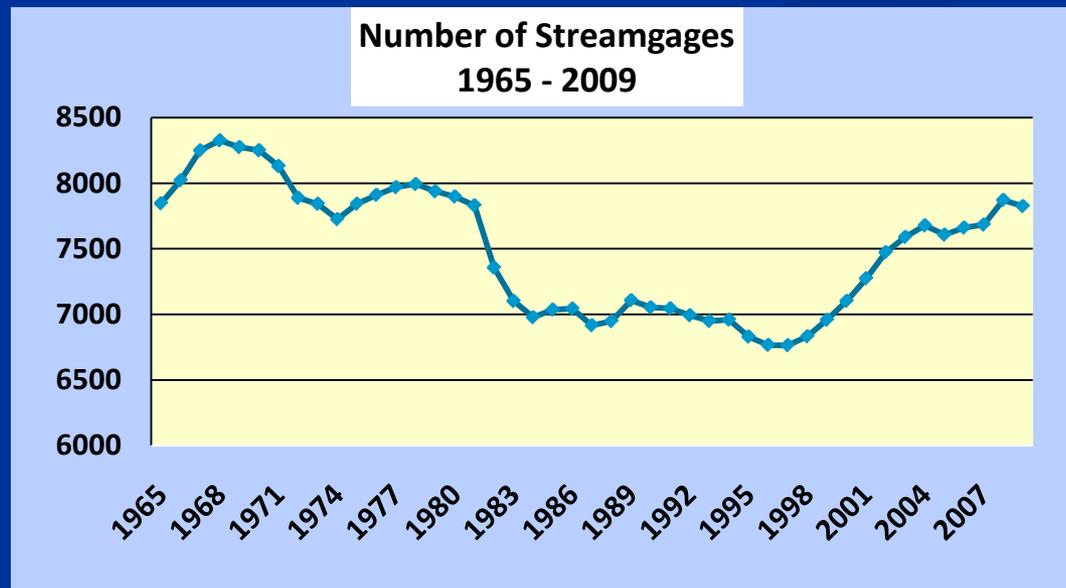
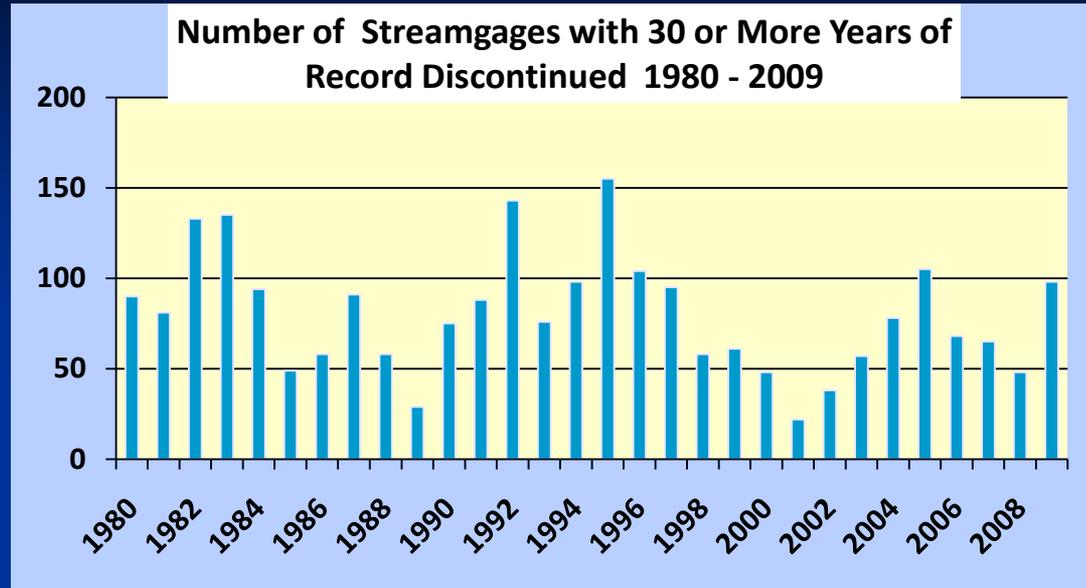
All USGS Streamgages fall under the NSIP's umbrella – differentiated by funding source.

Partner funded

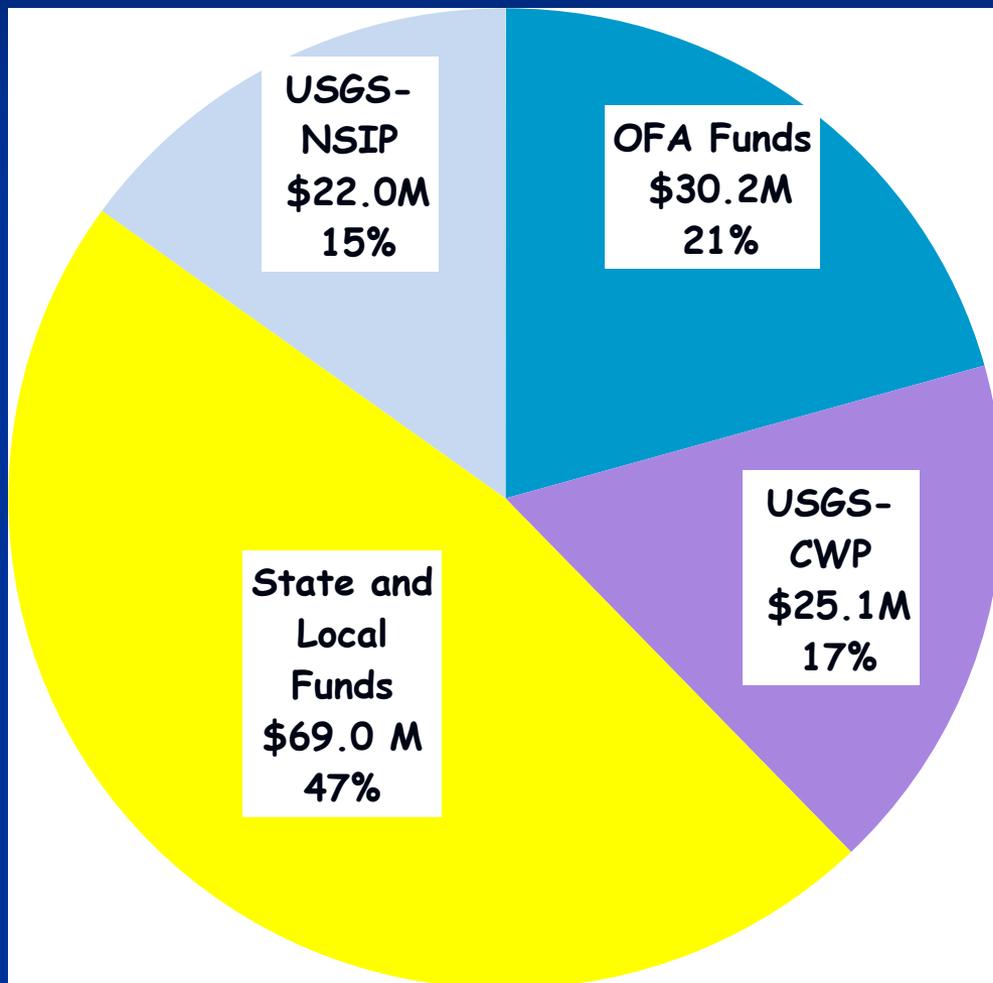
Includes CWP, and over 850 OFAs, State, and local agencies

NSIP full Federal funding for 4756 planned streamgages

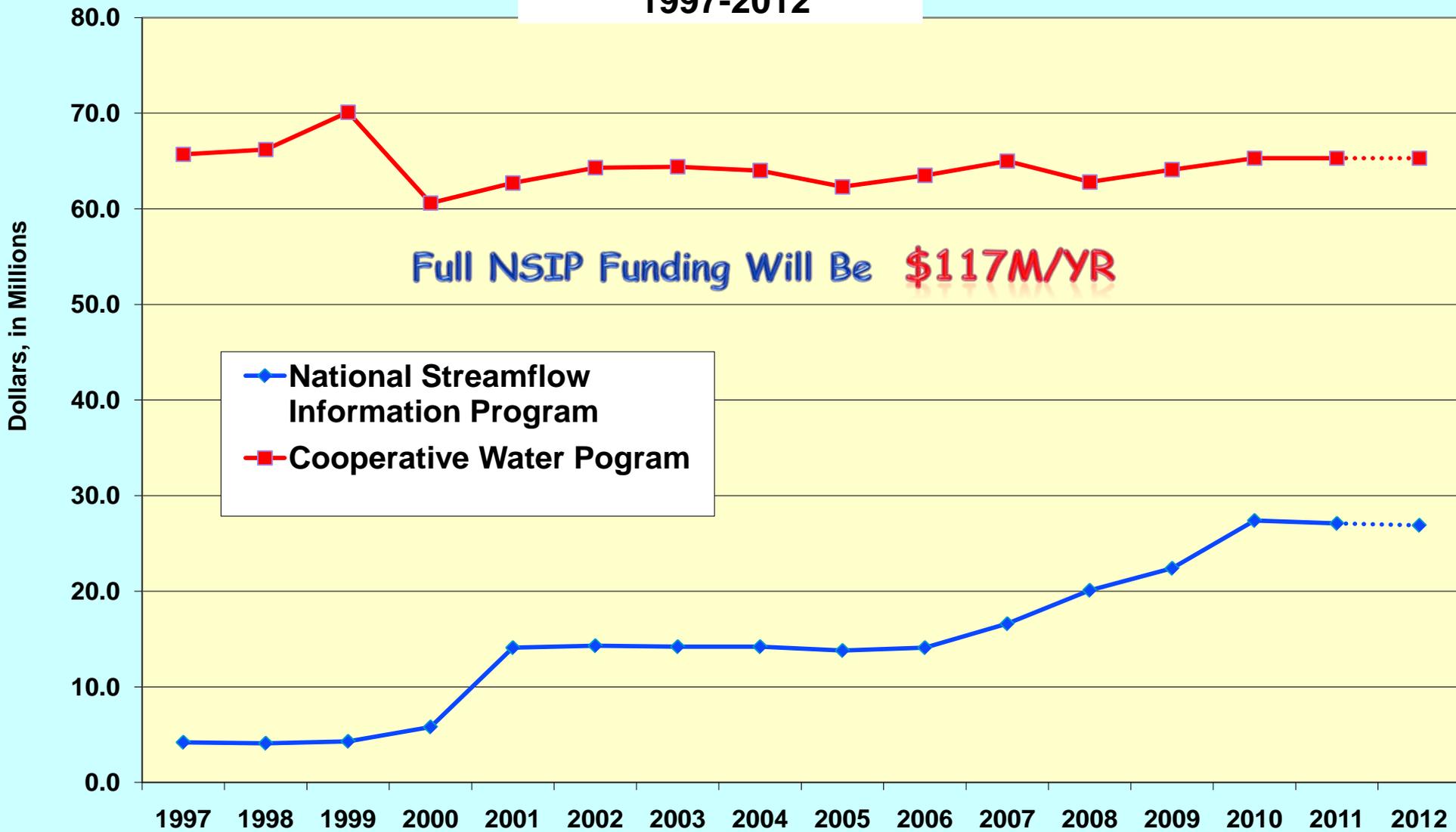
Streamgauge Network Instability



Funding for USGS Streamgaging Program, FY 2009 = \$146.3M



USGS Federal Funding 1997-2012



Full NSIP Funding Will Be **\$117M/YR**

◆ National Streamflow Information Program
■ Cooperative Water Pogram

National Streamflow Information Program

- Program Mission:

..... to provide the streamflow information and understanding required *for national, State, and local economic well-being, the protection of life and property, and efficient and effective water resource management.*

Five National Streamflow Information Program Goals

- 1. Stabilize the streamgauge network
 - National backbone network of streamgages to meet *Federal needs*
 - Modernize and harden the network streamgages
 - 4,756 NSIP Federal needs streamgages
(914 streamgages meet more than one need)

New; Reactivated; Take over funding of existing NSIP streamgages; Flood harden; basic qw

NSIP's Federal Needs for Streamflow Information

Interstate and International Waters - Interstate compacts, court decrees, and international treaties, and at State-line crossings.

Streamflow Forecasts - Support of flood and other streamflow forecasting by the National Weather Service and other Federal agencies across the country.

River Basin Outflows – Accounting of streamflow from each of the Nation's 350 major river basins to the next downstream basin, estuary, ocean or the Great Lakes.

Sentinel Watersheds - in 800 watersheds across the country that are relatively unaffected by flow regulation or diversion and typify major ecoregions and river basins to understand response to changes in climate, land use, and water use.

Water Quality - Provide streamflow information in support of the three national USGS water-quality networks.



Goal 2: Improved Delivery of Streamflow Data to Users

State-of-the-art methods to transmit, store, analyze, and distribute streamflow information.

1. Uninterrupted delivery.
2. Quality assurance - real-time records analyses and computer programs and techniques to more rapidly and cost effectively compute streamflow.
3. Maximize the usefulness and accessibility - confidence intervals, increased availability of instantaneous-value data, and developing new products to present the information.

Goal 3: Regional Assessments of Streamflow Characteristics

Perform regional streamflow assessments to estimate at ungaged locations, identify trends, and attempt to determine the cause of trends.

At a minimum, streamflow statistics (mean and median streamflows, streamflow per unit area, low flows, peak flows, and trends), and cause and effects, if possible.

Includes an assessment of the network to provide the data to conduct these assessments and equations for estimating streamflow at ungaged sites.

Goal 4: Expanded Data Collection During Floods and Droughts

Maximizing data collection prior to, during, and following floods and droughts is critical to improving our understanding of and predictive capability with regard to hydrologic extremes.

Increase the intensity of data collection, improve data analysis, and produce interpretive reports to improve the understanding of, and response to, floods and droughts.

Will include not just streamflow, but QW, sediment, and geomorphology.

Goal 5: Research and Development

Perform basic and applied research to develop new tools and technologies that (1) improve the way surface-water information is obtained and analyzed and (2) improve the understanding of surface-water flow.

Stakeholder Support

September 10, 2007

The Honorable Dirk Kempthorne
Secretary of the Interior
U.S. Department of Interior
1849 C Street, N.W.
Washington, D.C. 20240

The Honorable James A. Nussle
Director
Office of Management & Budget
Eisenhower Executive Building
Washington, DC 20503

Regarding: **STREAMGAGE SUPPORT IN FY-2009**

Dear Secretary Kempthorne and Director Nussle:

The undersigned organizations support the US Geological Survey's Cooperative Water Program (CWP) and National Streamflow Information Program (NSIP) and urge your support for full implementation of the NSIP beginning in FY-2009 and for stronger funding of the CWP at approximately \$70 million. Full impl of the NSIP would require \$110 million in FY-2009, substantially more than the \$16.2 million appx FY-2007.

Our members rely extensively on the trustworthy data and science that these two programs produce are active, financial partners ("Cooperators") in the Cooperative Water Program. Nationwide, our well-informed understanding of streamflow, groundwater, tidal surge, precipitation and other water attributes continues to increase as a function of our growing population, economy, land uses and awareness.

The NSIP and CWP have proven to be a source for reliable, scientific information concerning Ameri resources, information that is required by decision makers in both the public and private sectors: variety of planning, design and management functions. Unfortunately, their capacity has not ke America's growing needs despite the strong, national cost-share partnership with over 1,400 Cooperat NSIP and CWP data are needed on a regular basis by many federal, state, tribal, and local governmen and by many businesses, landowners, public interest organizations and individuals for many essential including the:

■ SECURE Water Act



David Reed
David E. Reed, Sr. Water Resources Specialist
National Wildlife Federation

Lynne Trappell
Lynne M. Trappell, Executive Director
Ohio River Basin Commission

Matthew E. Mervin
Matthew E. Mervin, Executive Director
Publishers Industry Association

Eric Egan
Eric Egan, President/CEO
Egan Institute

Chris Wood
Chris Wood, Co-Leader, Global Freshwater Trust
The Nature Conservancy

Chris Wood
Chris Wood, Vice President for Conservation
Trust for the Americas

Holly Swanson
Holly Swanson, Executive Director
Upper Mississippi River Basin Association

Michael F. Taha
Michael F. Taha, Director
Water Environment Federation

Diane Smith
Diane Smith, Chairman
Western States Water Council

Charles John
Charles John, President
Association of American State Geologists

Lee Sprague
Lee Sprague, Executive Director
Association of State Dam Safety Officials

Al Goodson
Al Goodson, President
Association of State Floodplain Managers

Linda Eichenlaub
Linda Eichenlaub, Executive Director
Association of State & Interstate Water Pollution
Control Administrators

Katherine Andrews
Katherine Andrews, Executive Director
Coastal States Organization

James H. Steele
James H. Steele, Tribal Council Chairman
Confederated Tribes & Coastines of the
Wahkiakum Tribe

Carl R. Collier
Carl R. Collier, Executive Director
Delaware River Basin Commission

May E. Kelly
May E. Kelly, Sr. Attorney
Co-Director, Land, Water and Wildlife Program
Environmental Defense

E. P. Vondranich
E. P. Vondranich, CEO
Federation of Fishermen

Tim A. Egan
Tim A. Egan, Executive Director
Great Lakes Commission

Roger L. Gustafson
Roger L. Gustafson, National Executive Director
Great Lakes Observing System

John Enshelm
John Enshelm, Chair
Hydro-power Reform Coalition

Hal A. Brecher
Hal Brecher, President
Interstate Fluvial Council

Sue Lowery
Sue Lowery, Chair
Interstate Council on Water Policy

Deborah Martin
Deborah Martin, Executive Director
Invasive Species Association

David Galt
David Galt, President
National Association of Flood and Stormwater
Management Agencies

John M. Johnson
John M. Johnson, Executive Director
National Association of State Boating Law
Administrators

Joe Garcia
Joe Garcia, President
National Congress of American Indians

John Duchesneaux
John Duchesneaux, President
National Flood Commission Association

Thomas F. Donnelly
Thomas F. Donnelly, Executive Vice President
National Water Resources Association

The Director
Secretary of the Interior for Water & Science
and Energy
Executive Director for National Streamflow
Information Program
Assistant Director for National Streamflow
Information Program

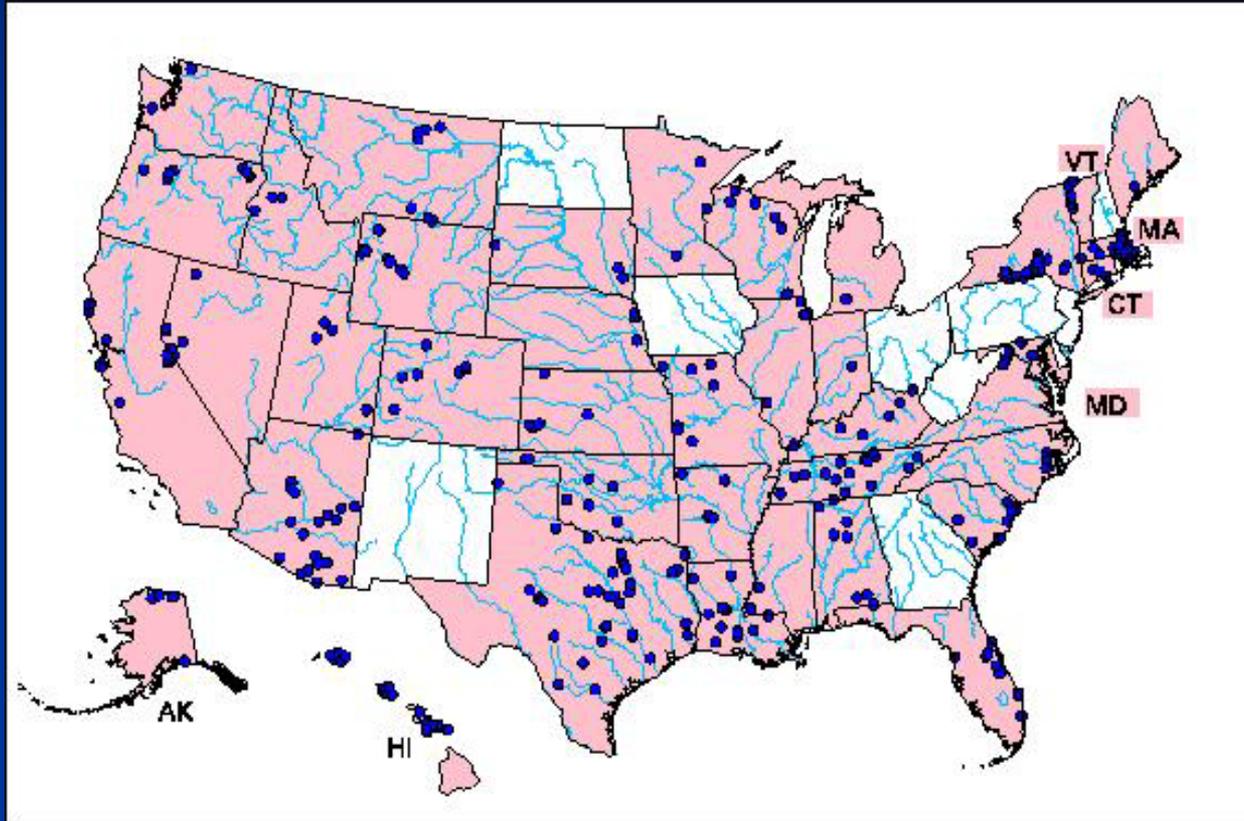
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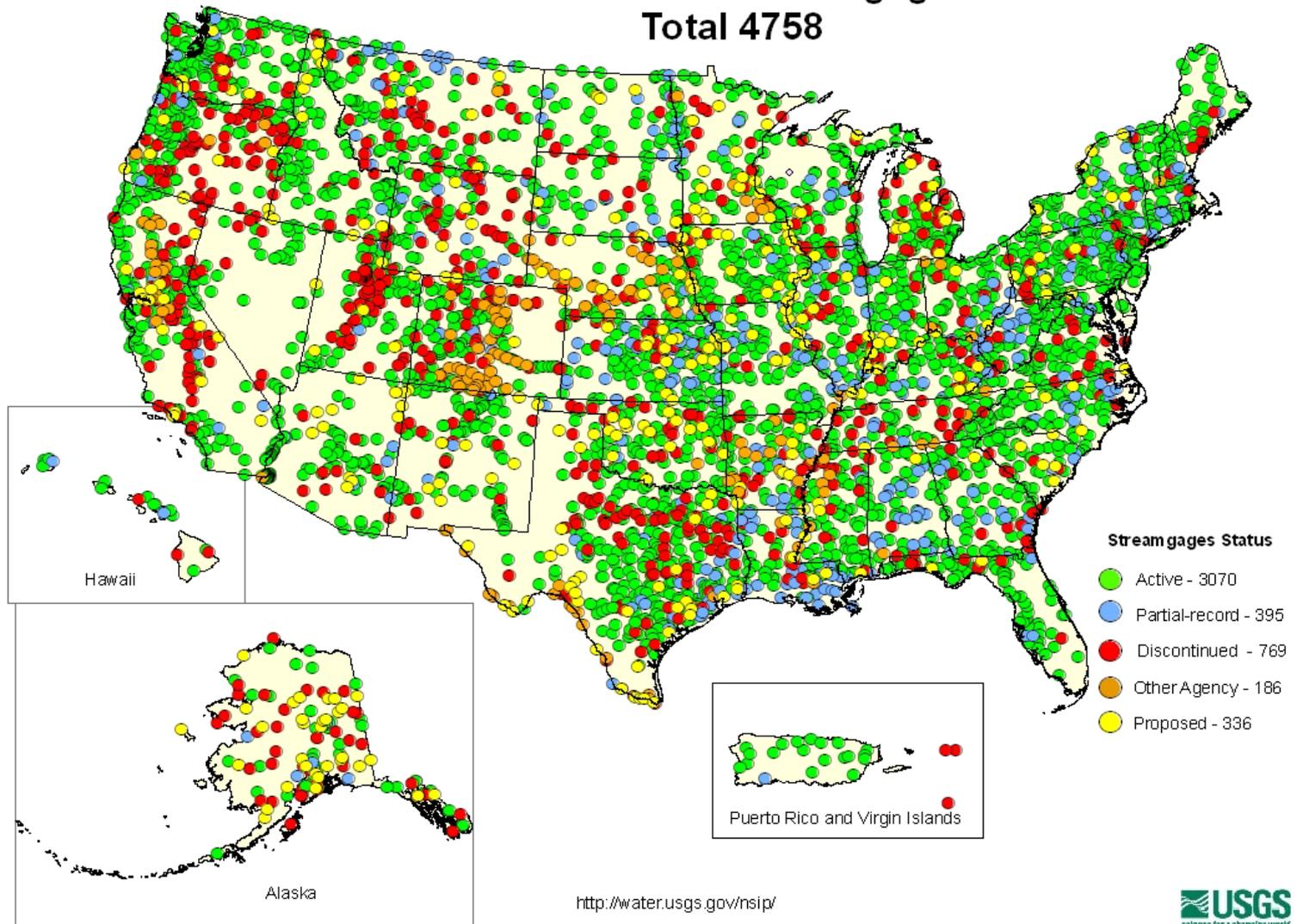
National Streamflow Information Program

Threatened/recently discontinued streamgages as of Today

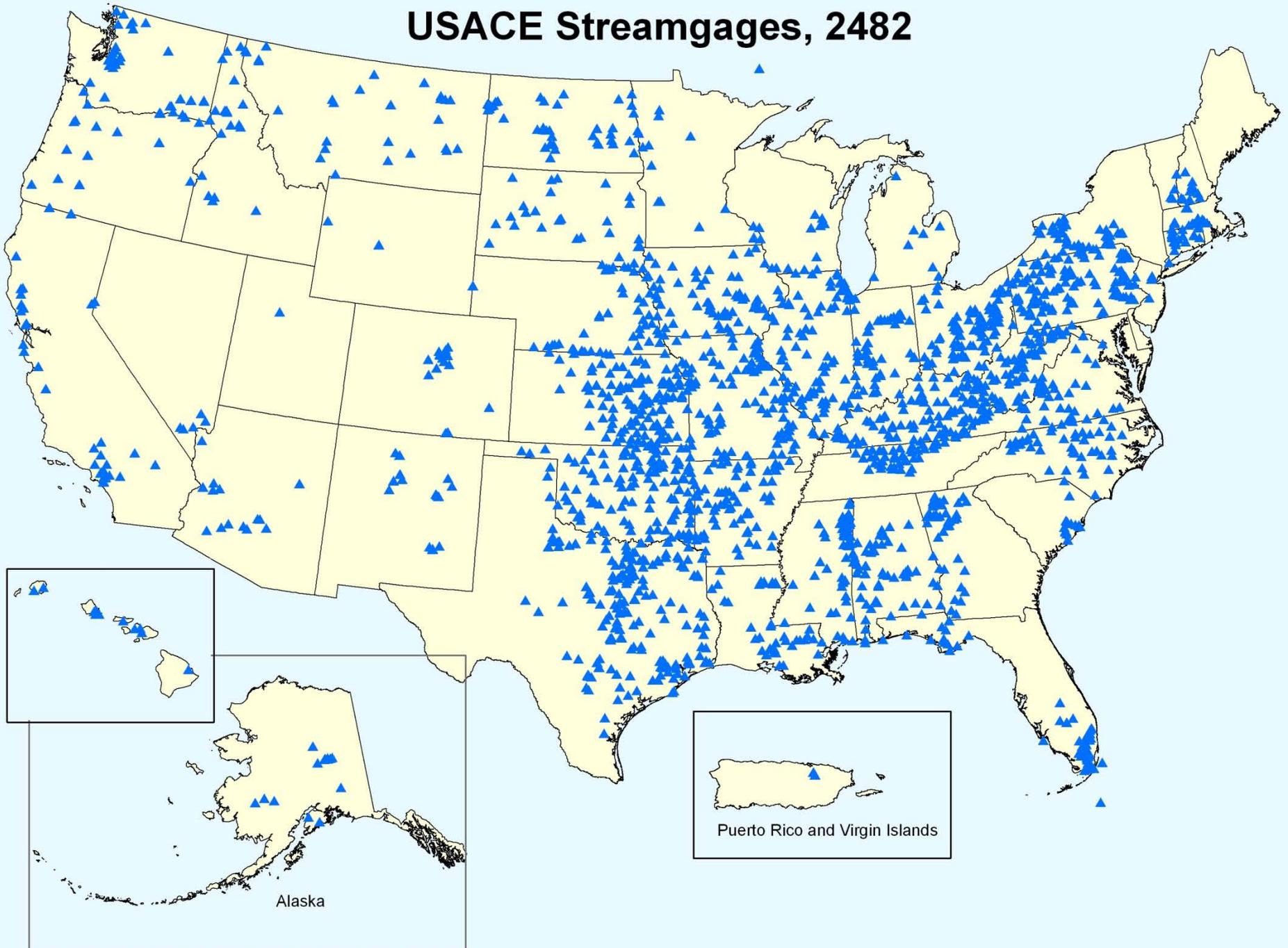


Threatened streamgages operated by the USGS - Total of 334

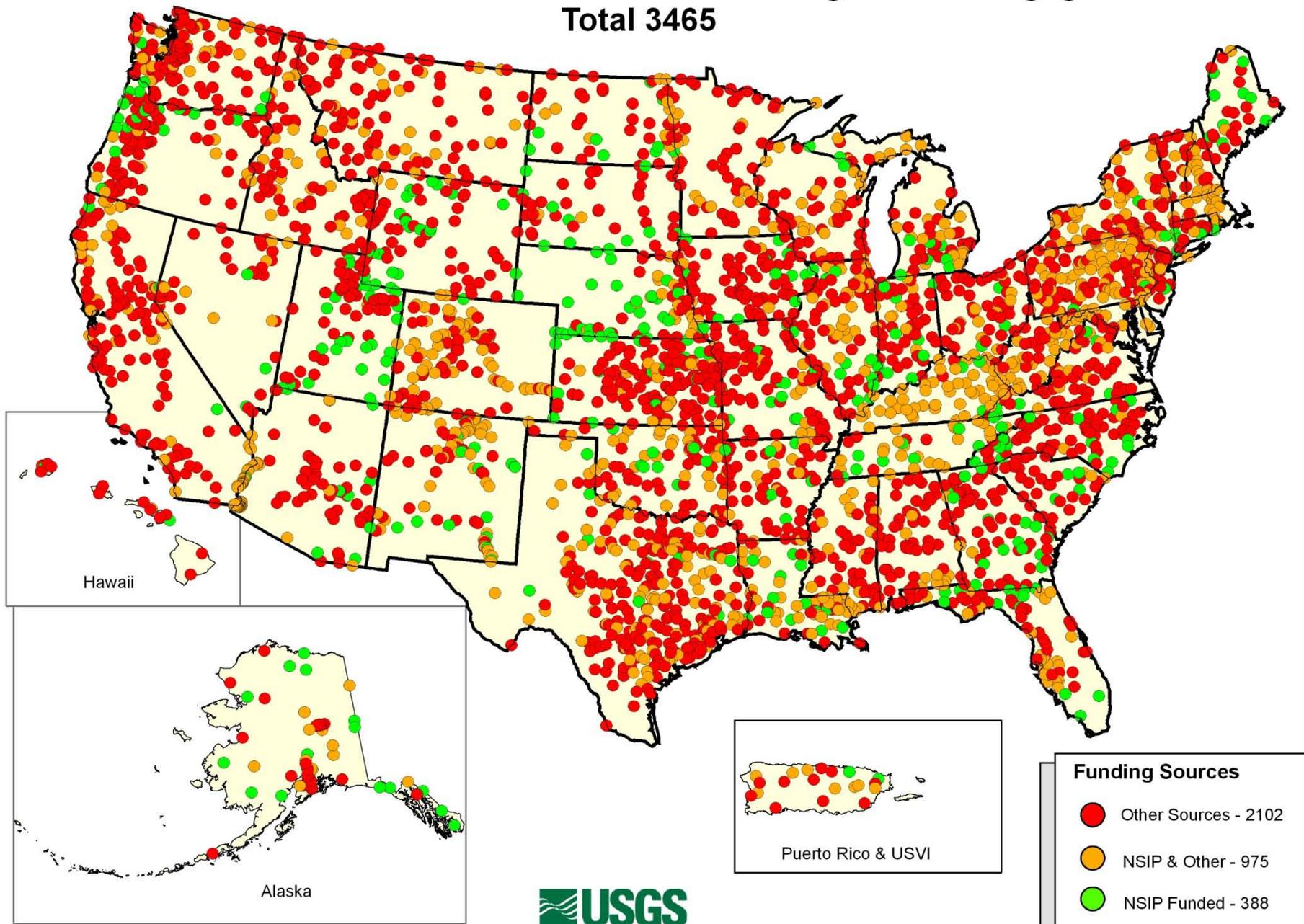
2010 National Streamgauge Information Program Federal Goal Streamgages Total 4758



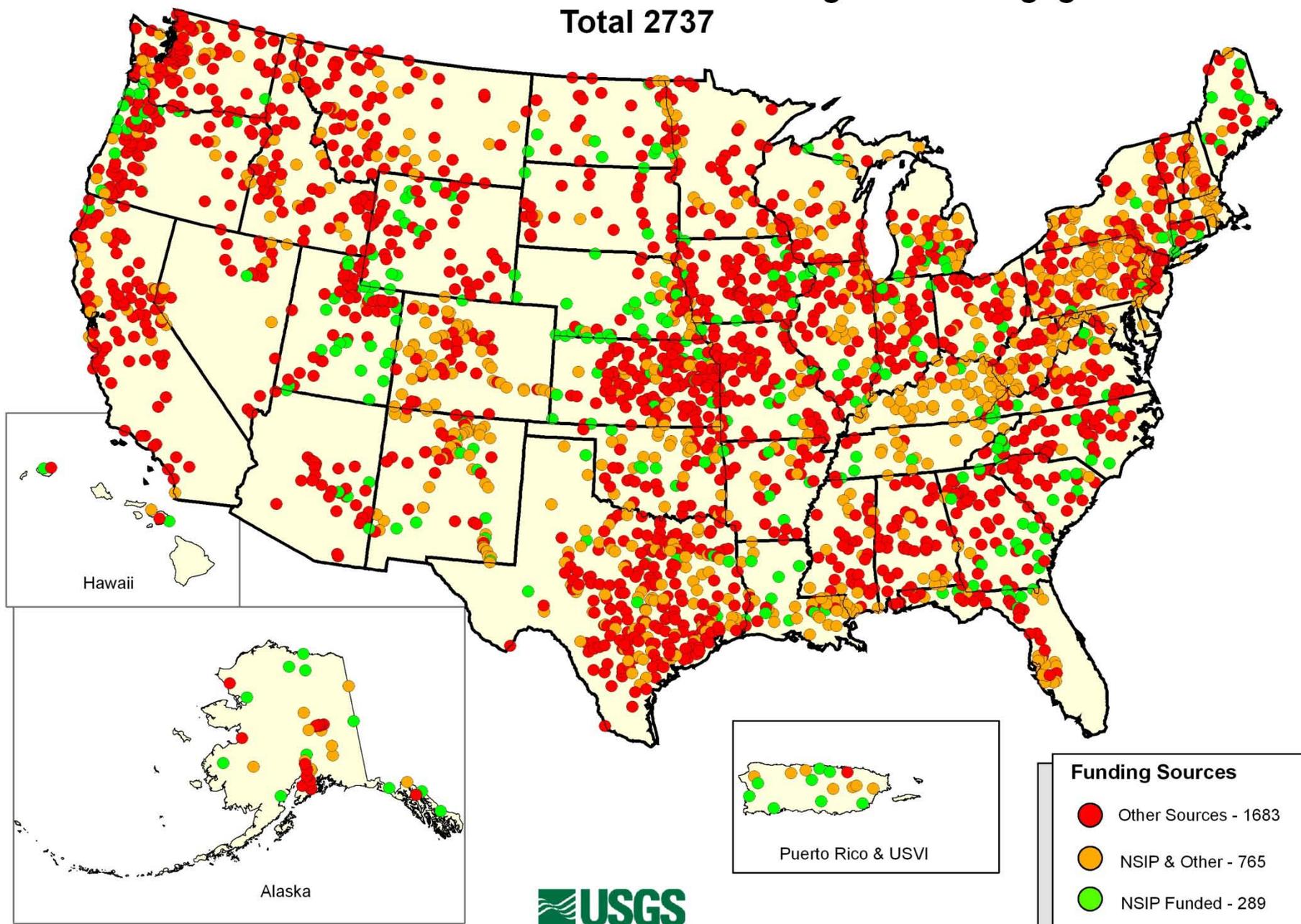
USACE Streamgages, 2482



2010 Funding Sources of the Active USGS National Streamflow Information Program Streamgages Total 3465



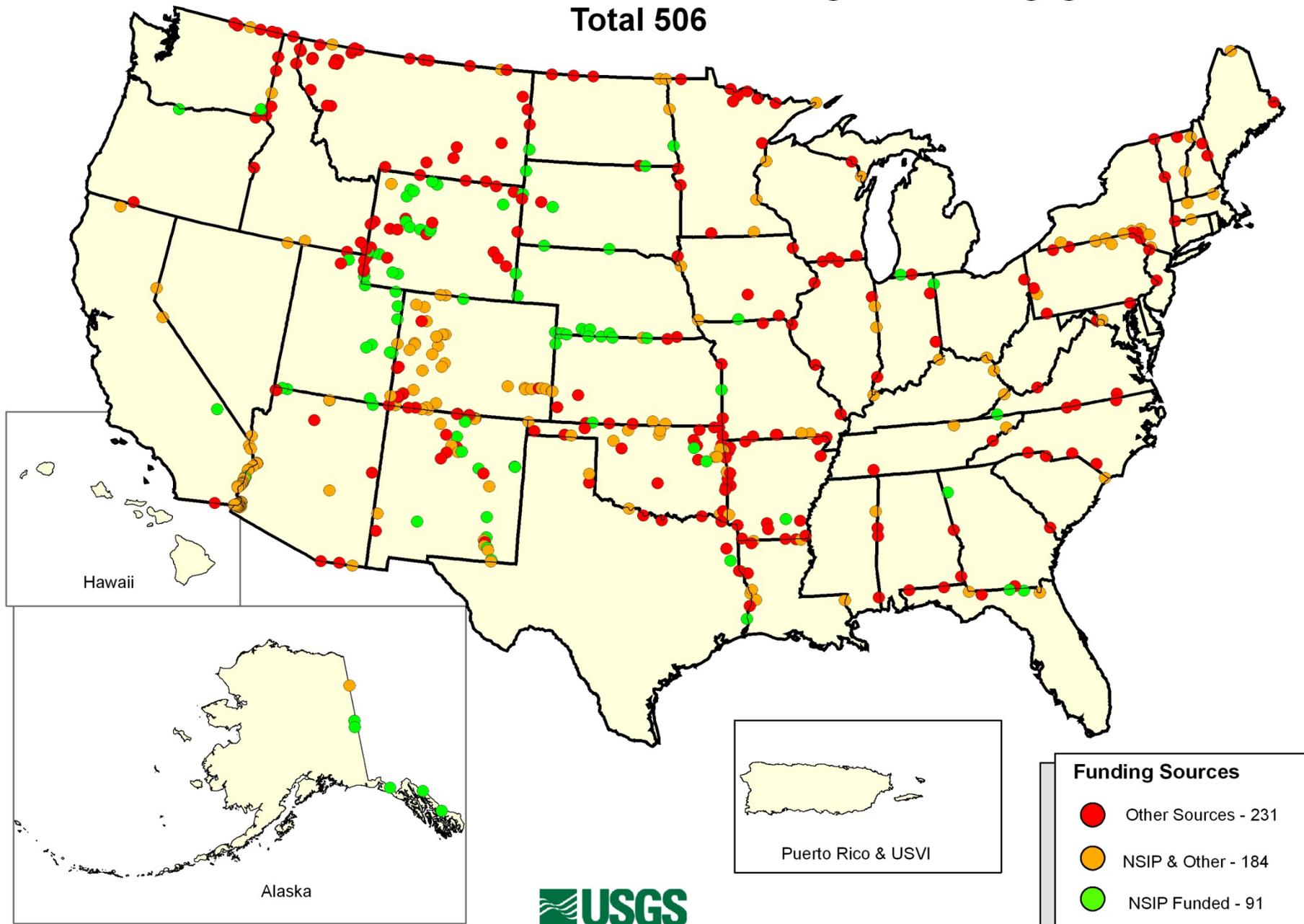
2010 Funding Sources of the Active Forecast Goal USGS National Streamflow Information Program Streamgages Total 2737



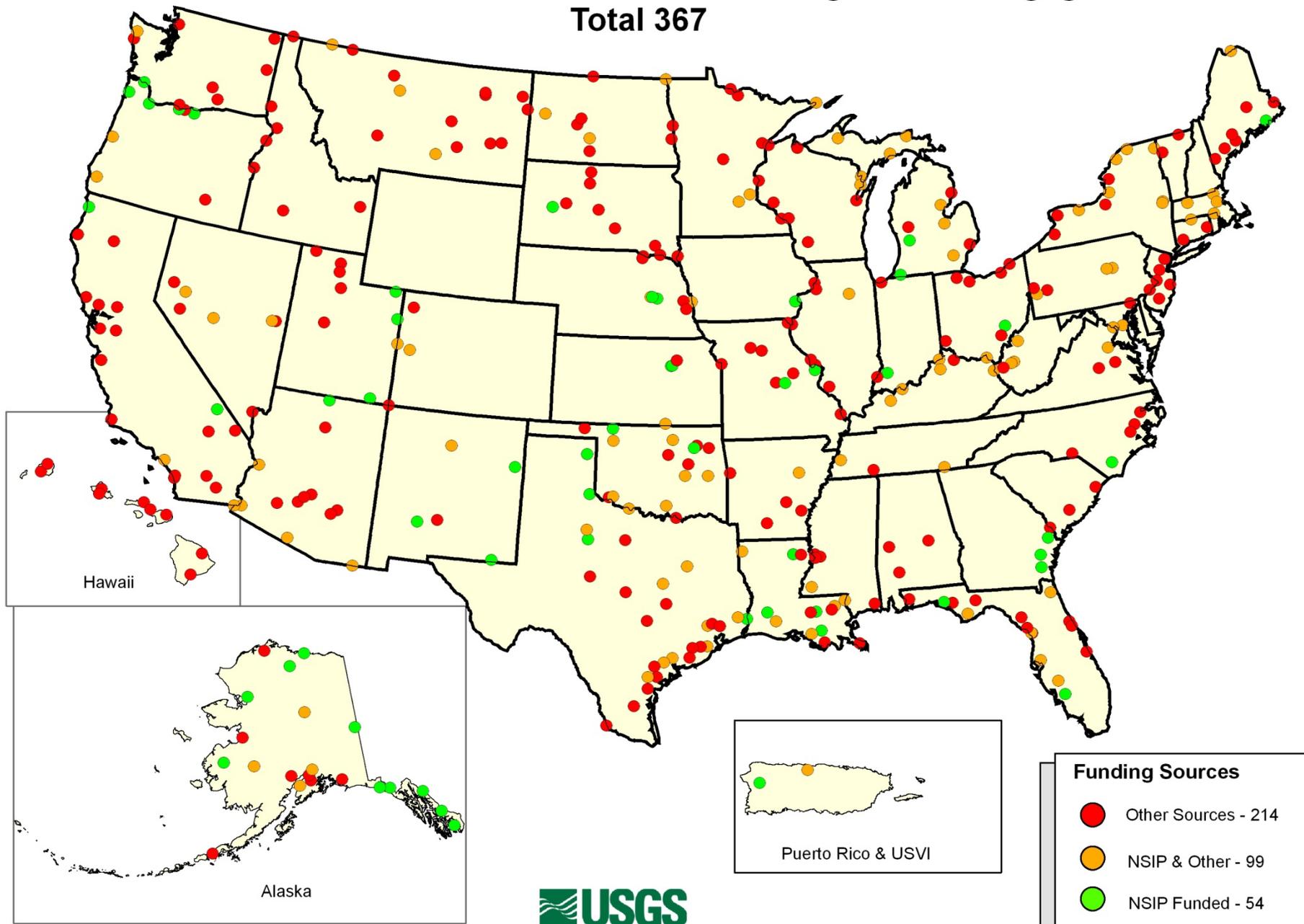
Funding Sources

- Other Sources - 1683
- NSIP & Other - 765
- NSIP Funded - 289

2010 Funding Sources of the Active Compact/Border Goal USGS National Streamflow Information Program Streamgages Total 506



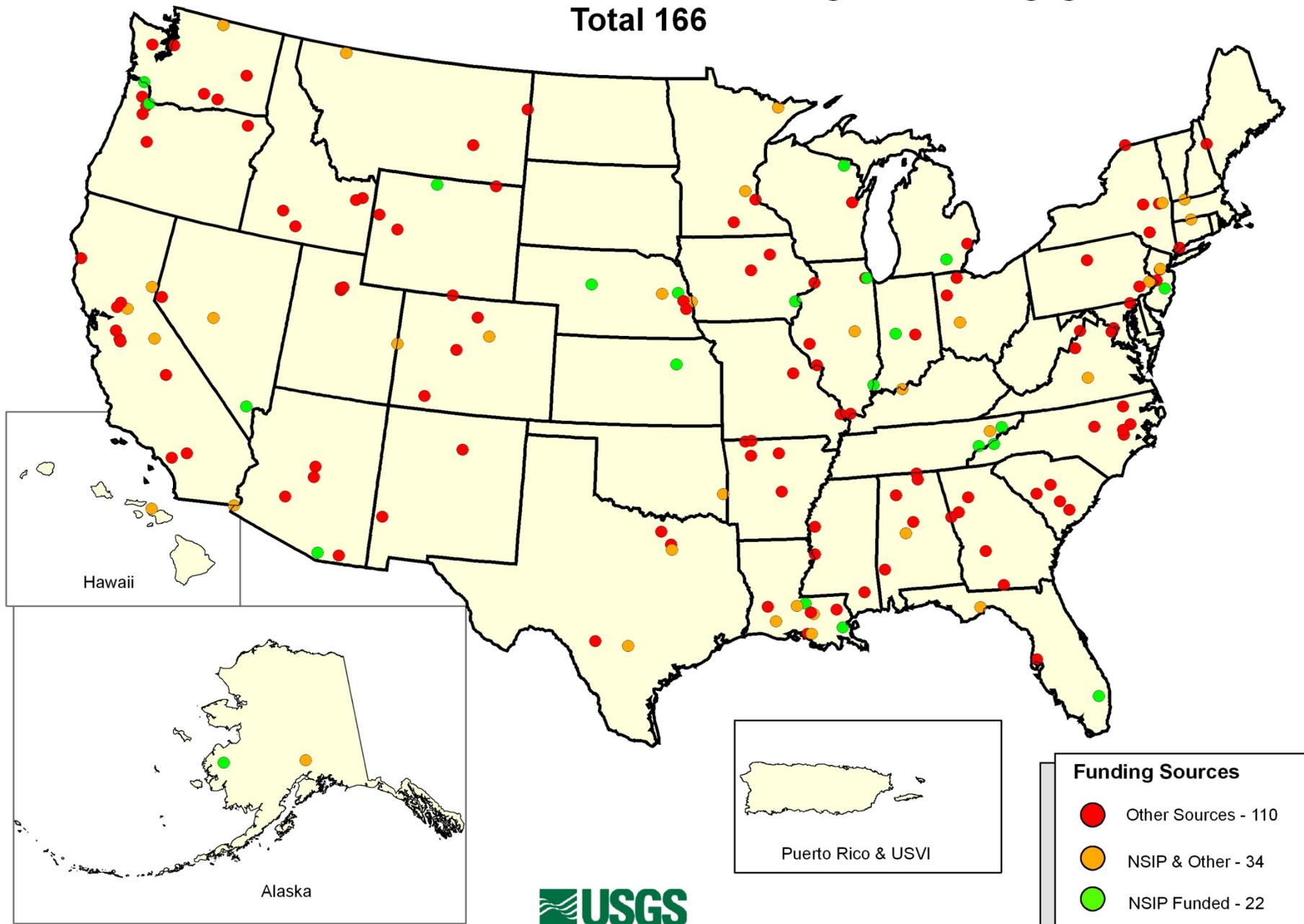
2010 Funding Sources of the Active Key River Basin Goal USGS National Streamflow Information Program Streamgages Total 367



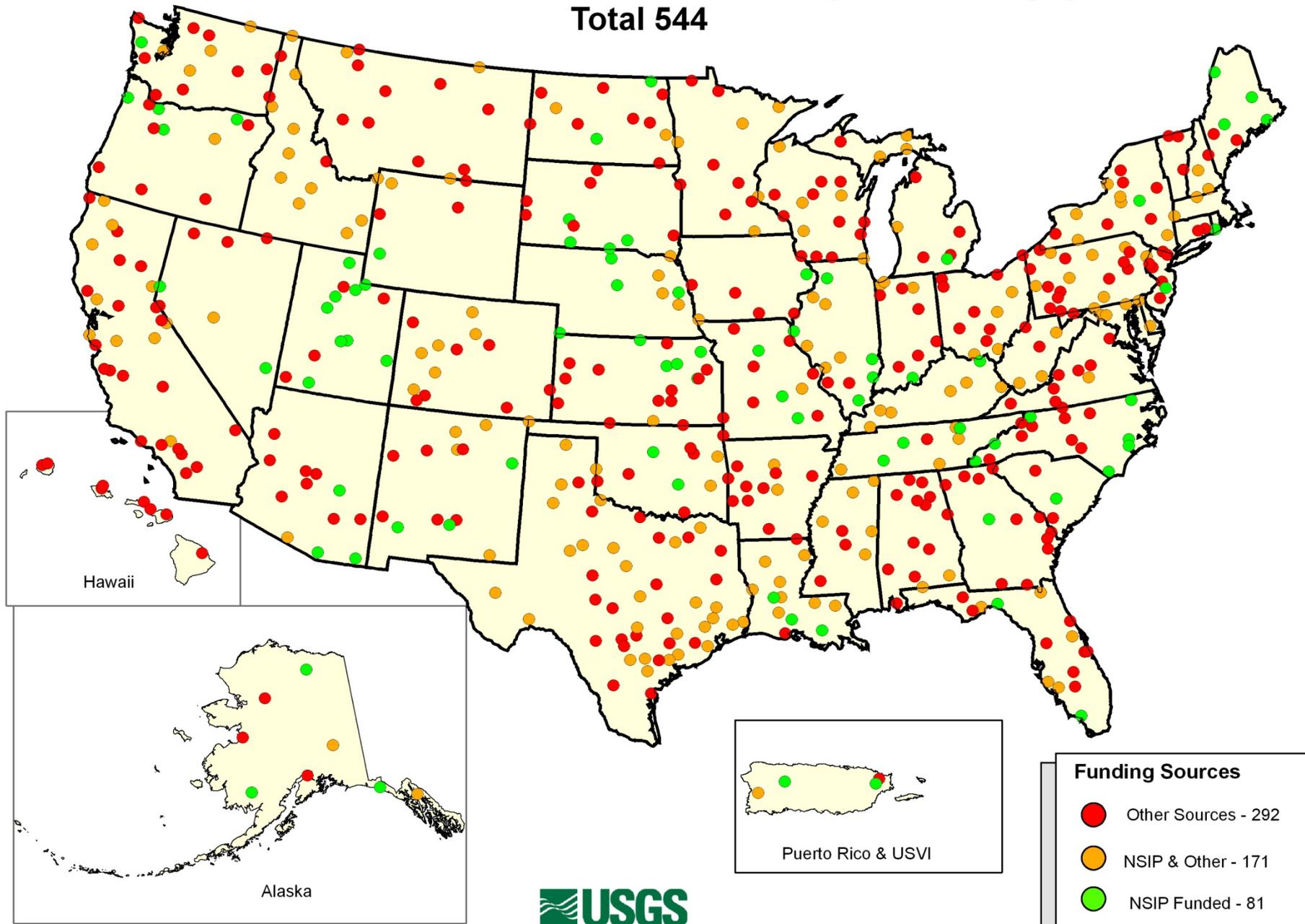
Funding Sources

- Other Sources - 214
- NSIP & Other - 99
- NSIP Funded - 54

2010 Funding Sources of the Active Water Quality Goal USGS National Streamflow Information Program Streamgages Total 166



2010 Funding Sources of the Active Sentinel Watershed Goal USGS National Streamflow Information Program Streamgages Total 544



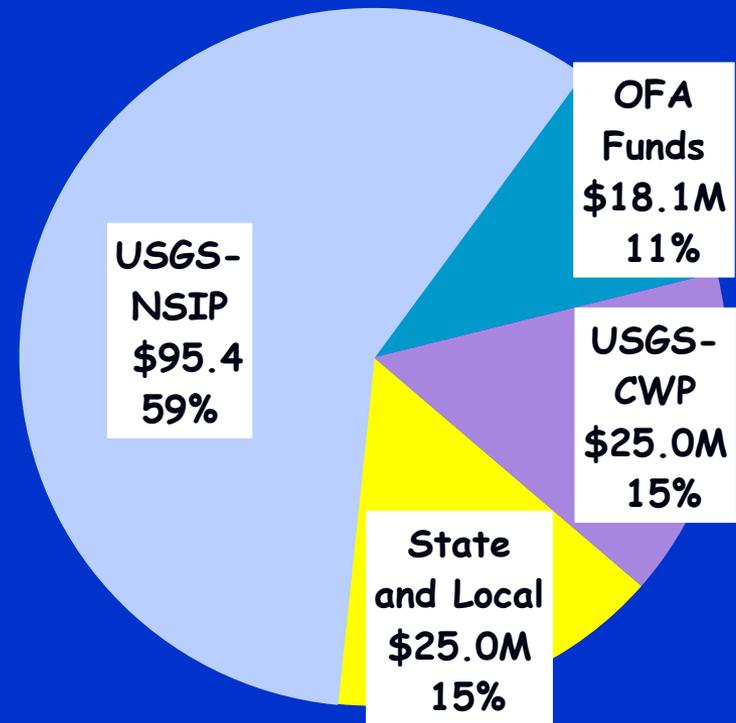
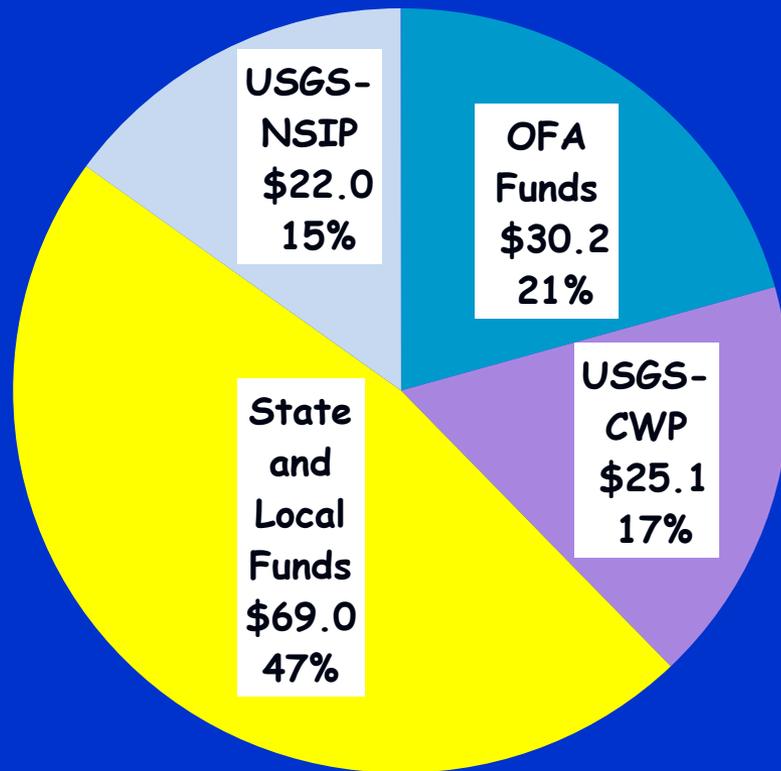
Funding Sources

- Other Sources - 292
- NSIP & Other - 171
- NSIP Funded - 81

USGS Streamgange Funding

2009 USGS Streamgange Network Funding (\$146M, 7663 streamganges)

USGS Streamgange Network with a fully funded NSIP (\$163M, 9387 streamganges)



SECURE Water Act of 2009

-- NSIP Authorization

- **Network enhancement.**-- In general **not later than 10 years after the date of enactment** of this Act, the Secretary shall increase **the number of streamgages funded by** the national streamflow information program to a quantity of not less than **4,700 sites**; and ensure all streamgages are flood-hardened and equipped with water-quality sensors and modernized telemetry. Each site described in subparagraph shall conform with the National Streamflow Information Program plan as reviewed by the National Research Council.
-
- **The Federal share** of the national streamgaging network established pursuant to this subsection **shall be 100 percent of the cost of carrying out the national streamgaging network**. In general, except as provided in subparagraph (B), there are authorized to be appropriated such sums as are necessary to operate the national streamflow information program for the period of fiscal years 2009 through 2023, to remain available until expended.
-
- **Network enhancement funding.**--There is authorized to be appropriated to carry out the **network enhancements described in paragraph (4) \$10,000,000 for each of fiscal years 2009 through 2019**, to remain available until expended.

National Streamflow Information Program 10 Year Ramp

	Up Following Secure Water Act										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
1-time costs	\$10	\$10	\$10	\$10	\$10	\$10	\$10	\$10	\$10	\$10	\$0
Annual	\$22.70	37.7	47.7	57.7	67.7	77.7	87.7	97.7	107.7	117.0	117.0
Total	\$32.7	\$47.7	\$57.7	\$67.7	\$77.7	\$87.7	\$97.7	\$107.7	\$117.7	\$127.0	\$117.0

National Streamflow Information Program 8 Year Ramp Up

	Following the Secure Water Act, Starting in Year 3 with 2012 Budget										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
1-time	0	0	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	0
Annual Costs	27.7	27.2	26.9	39.8	52.3	65.2	78.1	91	103.9	117	117
Total	27.7	27.2	39.4	52.3	64.8	77.7	90.6	103.5	116.4	129.5	117

Difference in Total	\$5.0	\$20.5	\$18.3	\$15.4	\$12.9	\$10.0	\$7.1	\$4.2	\$1.3	(\$2.5)	\$0.0
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Difference in Number of Streamgages	-321	-1314	-1173	-987	-827	-641	-455	-269	-83	160	0
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Questions/Comments

