Water Resources Dashboard for the Water Resources and Planning Communities

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Climate Prediction Applications Science Workshop

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Current External Partners for the Dashboard

- American Planning Association (APA)
- American Water Works Association (AWWA)
- Association of Metropolitan Water Agencies (AMWA)
- Water Environment Federation (WEF)
- Water Environment Research Foundation (WERF)
- Water Research Foundation (WRF)

Examples of our NOAA Internal Contributors

CPO: Nancy Beller-Simms (co-lead), Wayne Higgins, David Herring, Richard Rivera, LuAnn Dahlman, (contactor), Jim Fox (contractor)

NCEI: Tamara Houston (co-lead), Steve Ansari, Mike Brewer, Neal Lott (retired) , Danielle Swallow (moved)

NWS: Kathy Gilbert (NCEP), Jon Gottschalk (NCEP), Mike Halpert, (CPC), David Novak (WPS)

Developing the Extreme Events Dashboard

General Approach:

- Meet regularly
- Agree upon goals
- Re-evaluate goals

Specific Approach:

- Better understand population
- Develop survey
- Identify most relevant constituents (avoided member fatigue) for inclusion in survey

The Survey

Climate Data and Information Survey

Thank you for participating in our survey on Climate Data and Information Needs. Your feedback is important to the water, climate, and planning communities.

The survey asks about specific climatological/meteorological data sets used for climate and resilience preparedness. It is intended for those within your institution's climate change, resiliency planning, or emergency management/preparedness departments, among others.

The information you provide will primarily be used to help us identify areas for improvement in the collection, dissemination, and training on data relevant to planning for climate change and extreme weather events and creating a "one-stop-shop" for data needs.

Collective survey results may also be used in outreach efforts to members at participating organizations, to inform a sector working model for larger collaborative goals among water/planning groups, and/or as a source of information for efforts taken under the development of the White House's national Climate Resiliency Toolkit.

The survey should take ~20 minutes to complete. Participation is anonymous and voluntary. You do not need to provide contact information, and you may withdraw at any time. If do you not know the answer to a specific question (or part of a question), or do not want to answer it, please leave it blank.

If you have any questions, please contact the institution that sent you this survey:

American Planning Association (APA): James Schwab; JSchwab@planning.org
American Water Works Association (AWWA): Adam Carpenter; acarpenter@awwa.org
Association of Metropolitan Water Agencies (AMWA): Erica Brown; brown@amwa.net
Water Environment Federation (WEF): Claudio Ternieden; cternieden@wef.org
Water Environment Research Foundation (WERF): Katy Lackey; klackey@werf.org
Water Research Foundation (WRF): Kenan Ozekin; kozekin@waterrf.org

***1) Do you currently use climate information for planning purposes at your institution?**

- ◯ Yes
- ◯ No

1a) Why not?

***Do you plan to use climate information for planning purposes in the future?**

- ◯ Yes
- ◯ No
- ◯ Maybe

Survey Statistics and Participants

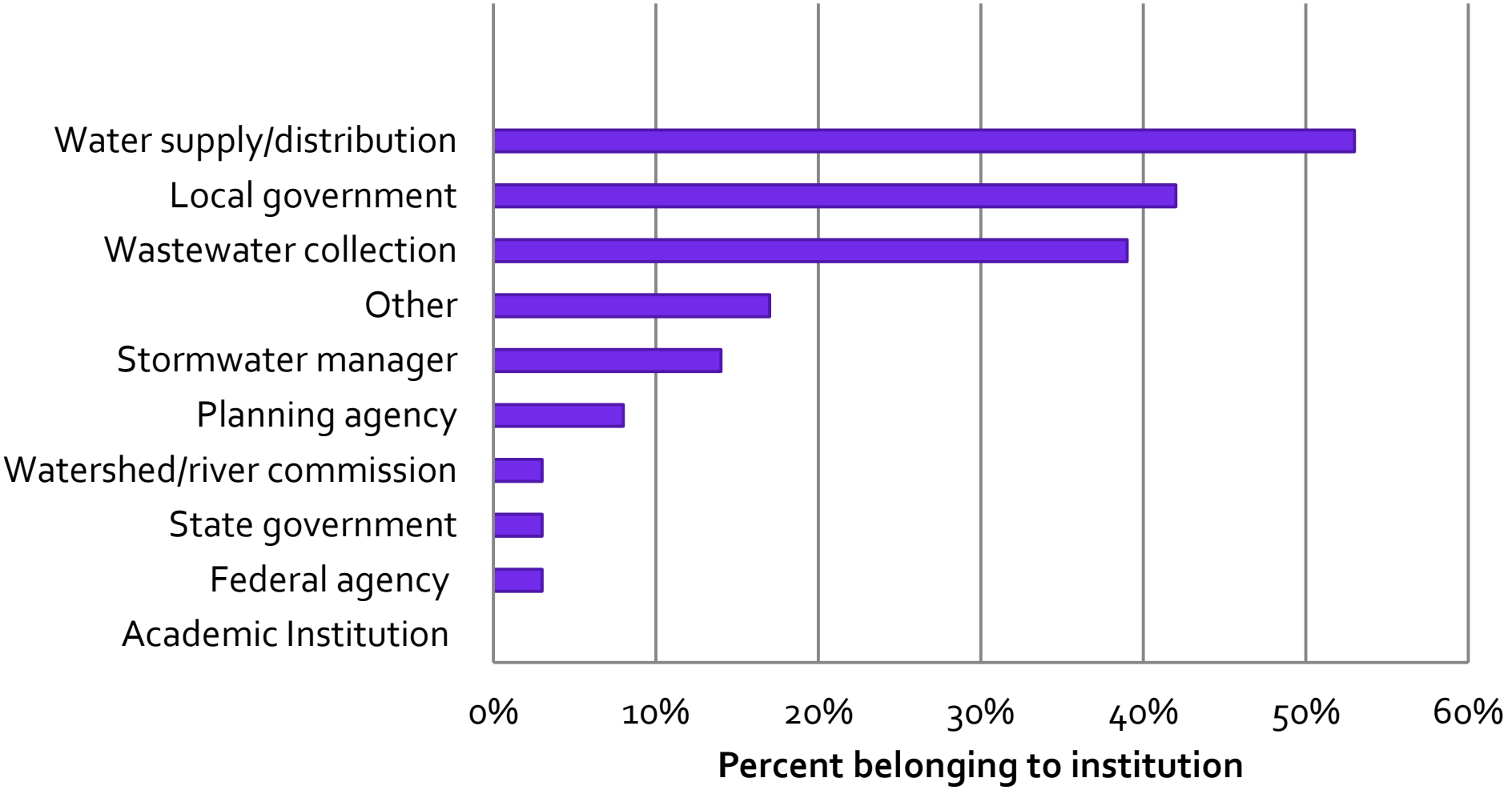
- Online for 2 weeks, 11 multi-layered questions
- Sent to 745 people

Institution	Date Sent	Target Group	# of Participants
AMWA	16-Oct	Sustainability Committee	56
APA	16-Oct	Hazard Mitigation & Disaster Recovery Interest Group	250
AWWA	20-Oct	Climate Change Committee	150
WERF	15-Oct	Climate Change Listserv	264
WRF (WaterRF)	15-Oct	Selected group w/CC interest	25
TOTAL			745

- 66 responses → 10 thrown out = 56 TOTAL
- 34 completed ALL questions

Slides liberally "borrowed" from: Katy Lackey, Water Environmental Research Foundations

What institutions were participants from?



Use of Climate Information

Frequent (50%+)

1. Understanding risk for water supply
2. Infrastructure/capital investments
3. Operational purposes

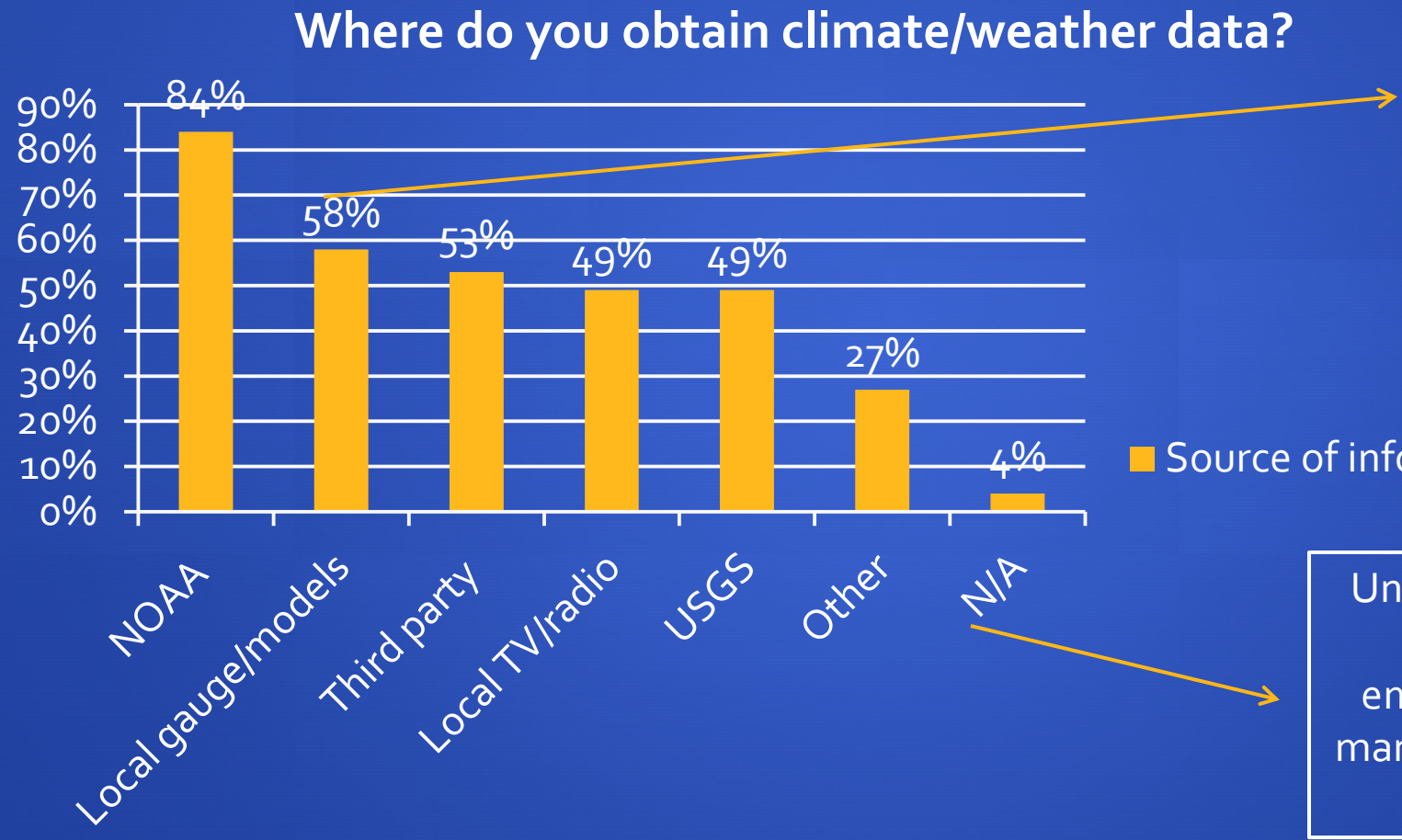
Frequent/Occasional (50%+)

4. Prepare hazard mitigation/climate adaptation
5. Develop impact reports & risk assessments
6. Plan extreme events
7. Plan explicit forecast
8. Plan emergency/long-term response
9. Other purposes

Don't Use/May in Future (50%+)

10. Rebuilding following an extreme event

Sources, Scales, Types and Forms



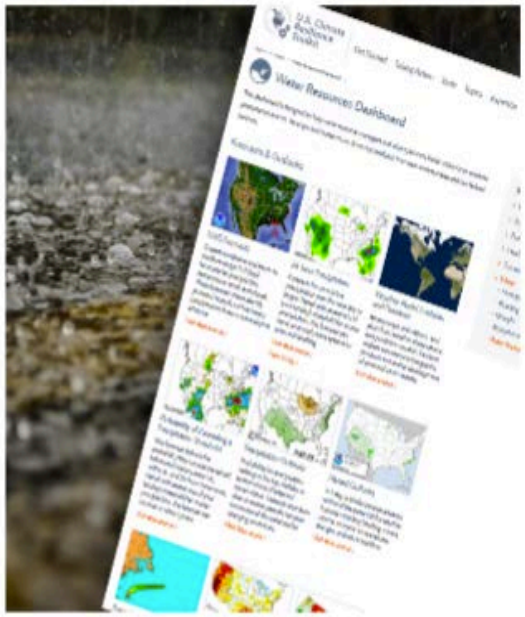
NWS, NCDC, NOAA Northwest RISA

Universities, local emergency management, blogs

WIVL BE PUBLISHED 9pm 3/21/2016

Water Resources Dashboard provides "one-stop shop" for water data needs

All regions and economic sectors in the United States depend on adequate and reliable water supplies. Too much or too little water can endanger the health and welfare of citizens and businesses. Driven by feedback from user communities and federal agencies, NOAA and partners have developed the Water Resources Dashboard: a one-stop location for water-relevant data sets.



With the help of several non-governmental organizations--including the American Planning Association, American Water Works Association, Association of Metropolitan Water Agencies, Water Environment Federation, Water Environment Research Foundation and the Water Research Foundation--NOAA worked to combine resources on flooding, drought, and other extreme precipitation events into one location to better serve the needs of stakeholders.

"There is an increasing demand for information, particularly on extremes, as communities consider investments in infrastructure, transportation, land use and so on. The water and planning community made it very clear to us that what they wanted was a 'one-stop-shop' for this information. That's what the Water Resources Dashboard is," said Dr. Wayne Higgins, director of NOAA's Climate Program Office. "Working with this community, getting their feedback, and having them as partners in this endeavor is critical to our

RELEASED!!!

YESTERDAY

At White House Water Summit

In conjunction with:

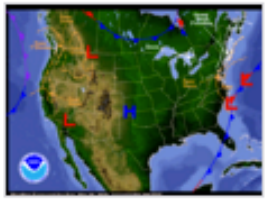
UN World Water Day!!!!

Tech.co

Water Resources Dashboard

This dashboard provides access to maps and data that can help water resource managers and urban planners monitor the potential for extreme precipitation and drought in their regions. The scope and content of dashboard entries are driven by input from users. Individuals who contributed to this resource are listed under About the Climate Resilience Toolkit.

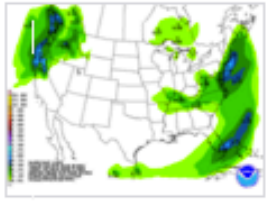
Forecasts & Outlooks



NWS Forecasts

View current conditions and short- to medium-range (1-7 days) forecasts for precipitation, temperature, wind, and clouds. These forecasts often identify potential hazards such as heavy precipitation three or more days in advance.

Visit data source ›



Quantitative Precipitation Forecasts

View forecasts of cumulative precipitation for periods from 6 hours to 7 days into the future. Monitoring this site can alert decision makers of the potential for wet weather and/or flooding.

Visit data source ›

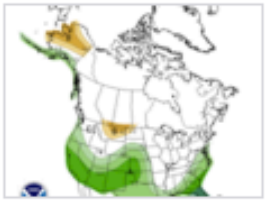
Storm Prediction Center

This site shows the chances for Severe Weather and Fire Weather over the next 8 days. Browse a range of information on severe weather events including tornadoes, thunderstorms, winds, and hail.

Visit data source ›

Drought Outlook

Hazards Outlook



Precipitation Outlooks

Browse Topics

- Arctic
- Coastal Flood Risk
- Ecosystem Vulnerability
- Energy Supply and Use
- Food Resilience
- Human Health
- Transportation and Supply Chain
- Tribal Nations
- Water Resources
  - Municipal Water Supply
  - Flooding
  - Drought
  - Ecosystems
  - Water Resources Dashboard

Current Observations

Daily Streamflow Conditions

Dots on this map indicate current streamflow: a quick look can show if water levels in your region are high, normal, or low. Click any region on the site, and then select stations to access graphs or raw data on streamflow and precipitation. Monitoring this site can help water managers judge short-term future supply.

Visit data source ›

Case Study ›

River Observations

View current and predicted flood status at more than 7,500 gauges in the United States. Click to zoom in on a region, and then roll your cursor over gauge locations to view hydrographs of recent and forecast discharge levels.

Visit data source ›

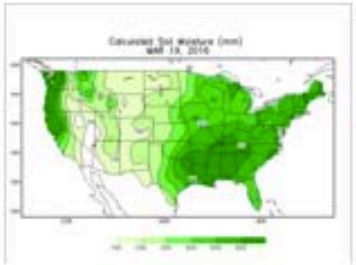
River Forecast Centers

View observed flow conditions across 13 regions of the contiguous United States. For each gauge location, access hydrographs showing observed and predicted water levels that account for upcoming weather and snowmelt.

Visit data source ›

Current Drought

This weekly map–updated every Thursday–shows experts' assessments of regional conditions related to dryness and



Soil Moisture

Access maps that show estimates of surface soil moisture. View Total, Anomaly, Percentile, or Change in soil moisture over the

Water Quality Information

WATERS (Watershed Assessment, Tracking, & Environmental Results System) provides comprehensive information about the quality of

Historical Observations

Daily Summary Observations

Access summary observations from more than 90,000 land-based stations around the world. Data may include precipitation, maximum and minimum temperature, temperature at the time of observation, and/or snow depth. A How-to Guide provides assistance with selecting stations of interest in the map interface.

Visit data source ›

1981-2010 Daily Normals by Weather Station

Use this GIS interface to select stations for which you want to view daily normals. Climate Normals are the latest three-decade averages of climatological variables, including temperature and precipitation. Hourly, monthly, and annual normals are also available.

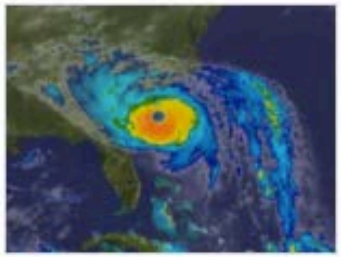
Visit data source ›

Case Study ›

Hourly Precipitation

Use this GIS interface to select from more than 5000 stations that indicate maximum observed rates of rainfall. You can consult these records to see historical extremes for locations of interest.

Visit data source ›



Extreme Events

Access various records of extreme events such as heat waves, droughts, tornadoes, and hurricanes. This site provides a

Map Layers from Data.gov

Rivers, Streams, etc.

This tile cache base map combines the National Hydrography Dataset (NHD) and the Watershed Boundary Dataset (WBD). Use the data as an overlay in your own analysis software, or access it through the Climate Explorer.

Visit data source ›

Case Study ›

View this layer in the Climate Explorer ›

Flood Hazard Zones

Local areas that carry an official designation of risk with respect to flooding show up on this map. The map highlights land that FEMA has judged to have a chance of flooding or lie within a regulatory floodway. Checking which areas of a community carry these designations is an important part of assessing vulnerability. View the layer in your own analysis software or the Climate Explorer.

Visit data source ›

Case Study ›

View this layer in the Climate Explorer ›

Impervious Surfaces (2011)

Parking lots, rooftops, and roads block water from soaking into the ground. These impervious surfaces can increase stormwater runoff, promote flooding, and contaminate surface waters. Explore this tile cache base map of impervious surfaces in your own analysis software, or view it in the Climate Explorer.

Visit data source ›

Case Study ›

View this layer in the Climate Explorer ›

Land cover (2011)

Population Density (2000)

Social Vulnerability Index

Next Steps:

1. Learning Sessions
2. Learning Progressions

Thank You

For More Information:

http://toolkit.climate.gov/topics/water-resources/water-resources-dashboard

and

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