

Earthquakes ★ Floods ★ Hurricanes ★ Landslides ★ Tsunamis ★ Volcanoes ★ Wildfires

The USGS Streamgaging Network: A Network in need

Robert Mason, U.S. Geological Survey,
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Merced River at Happy Isles Selected Annual Hydrographs

How high (or how low)?
How much?
When?
How does it compare?

USGS

Streamgaging/Forecasting River Flows

Rainfall Data

USGS streamflow data

Rainfall-Runoff Model

USGS

USGS Rating

The Streamgaging Process

Flow Measurements

Streamgage

Shift

Rating

Flow

Flow / Stage

Time

USGS

ADCP Deployment Methods

USGS

HydroAcoustic Velocity Sediment Measurements

Velocity

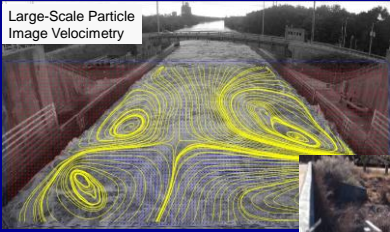
Backscatter

Distance


USGS


New Measurement Technologies

Large-Scale Particle Image Velocimetry





Surface Velocity Radar






USGS WaterAlert and WaterNow

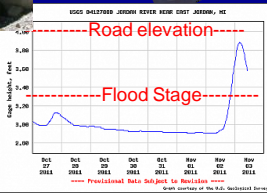




Wireless or E-mail Customized WaterAlert

<http://water.usgs.gov/WaterAlert/>





USGS Streamgauge Network Opportunities and Threats

- Streamflow sensor innovation –Increase use of LSPIV, microwave radar, hydroacoustics
- Water-quality monitoring –Increase use of surrogates, fluoresce, and “lab-on-a-chip”
- Network expansion –increase partnerships, better articulate standards
- Loss of GOES –Increase use of cell phones and Iridium technology
- Distribution –Open water-data initiative

