



STREAM RESTORATION
Conference

Proactive Management of Flooding With Innovative Technology for Every Budget

Speaker Biography

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- Presenter profile

7+ years experience in water monitoring systems sales. Range of clients have included municipalities, federal governments, state governments, researchers/academia and engineering consulting firms.



TODAY'S AGENDA

01

Benefits of A Flood Warning System



02

Components of a Flood Warning System



03

Budget Costs for Different Budgets



04

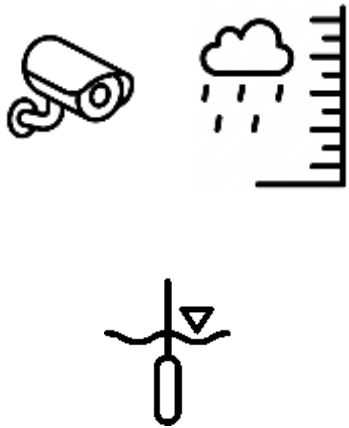
Q&A, Closing Remarks



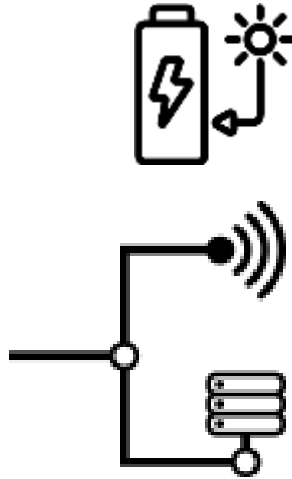
BENEFITS of Flood Warning system

- **Deploy the City/Town/County's limited resources** to initiate proactive measures
- **Reliability:** Have accurate data available at all times
- Assists Department Heads in **assessing situations quickly**
- **Equipment/instruments can be installed directly at local/susceptible flooding locations** with minimal impact to public/private property. Obtain the information you need to **be able to justify with decision makers to invest in flood warning solutions**

System Components for Monitoring Heavy rain and Rising Water Levels



Sensor &
Camera



System
Integration



Software &
Alarming

Water Level Gauge



OTT RLS Radar Level Sensor

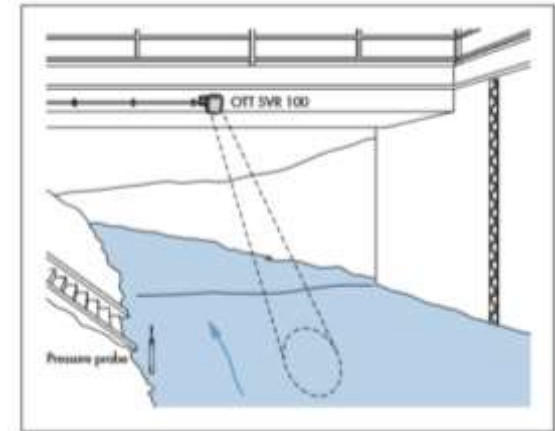
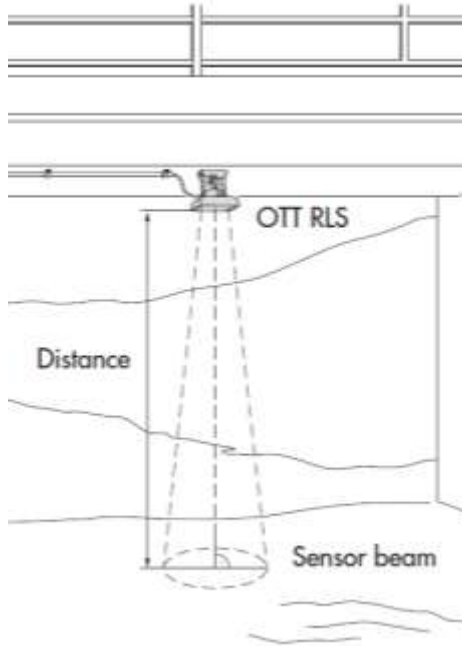
OTT SVR Surface Velocity Sensor

Advantages

- Contactless measurement
- No damage during flood conditions
- Simple installation and maintenance out of the water

Important to know

- Has to be installed above flood level
- Radar beam can be reflected by other obstacles which leads to wrong measurements



Water Level Gauge



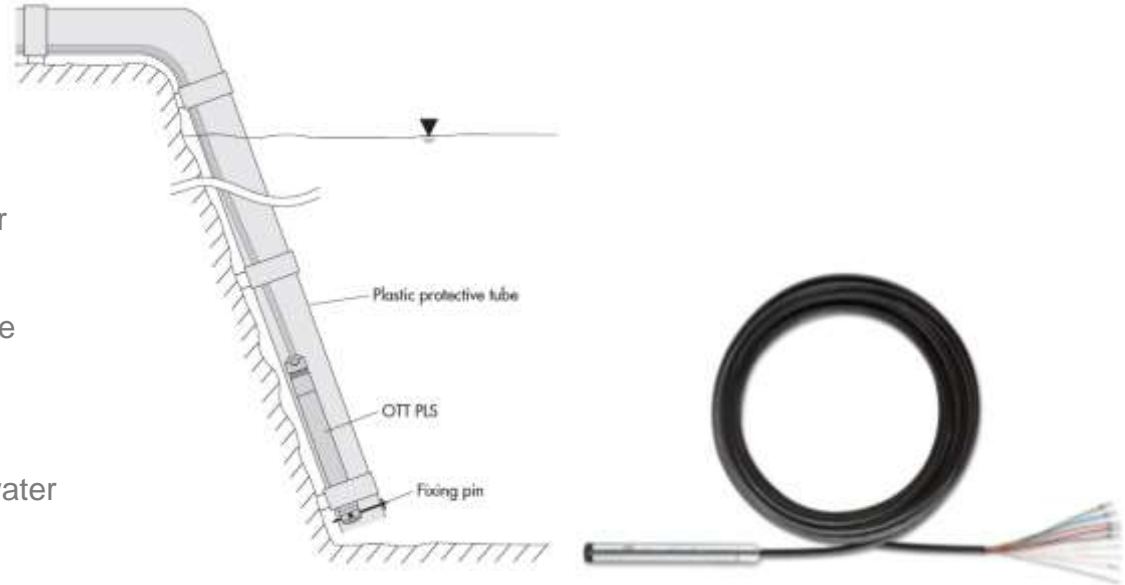
OTT PLS Pressure Level Sensor

Advantages

- Very accurate
- Measurement directly in the water
- Cost effective
- OTT Hydromet's ceramic pressure measuring cell

Important to know

- Always needs to be covered by water
- Debris can damage the sensor
- Depending on the site conditions the sensor can be installed from the bank or divers are needed



Water Level Gauge



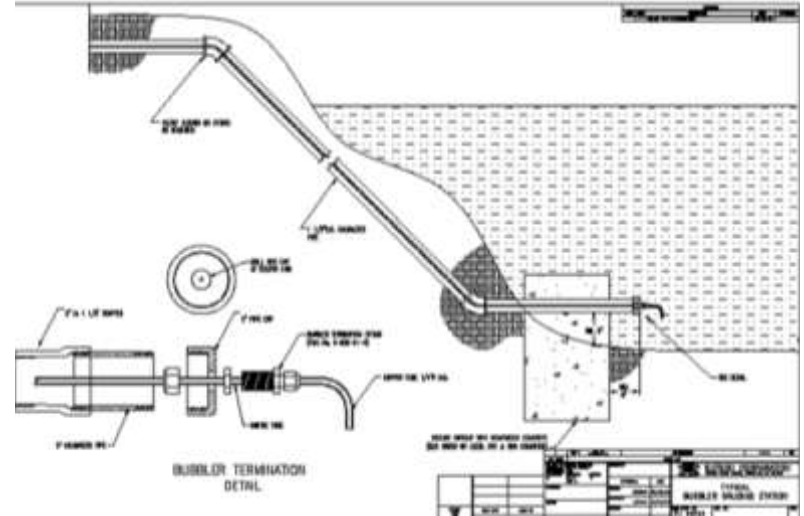
Compact Sutron Bubbler

Advantages

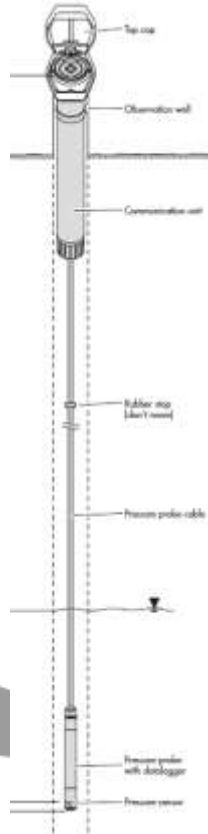
- No expensive equipment in the water
- No damage during flood conditions
- Self cleaning

Important to know

- Best practices to install bubbler line



Water Level Gauge



All-in-one solution – EcoLog 1000

- Package contains
 - Pressure Level Sensor
 - Battery
 - Datalogger & Modem
- Advantages
 - Small solution
 - Cost effective
- Important to know
 - Cellular signal required



Rain Gauge



Sutron Tipping Bucket Rain Gauge

Advantages

- Small footprint
- Cost effective

Important to know

- Requires regular maintenance, as leaves and insects can block the tipper
- Not precise during heavy rain events



Camera

- Camera to be used for visual confirmation of water level and conditions
- Still shot can be viewed and downloaded through Cloud based solutions



A screenshot of the Hydromet Cloud web interface. The interface includes a navigation bar with 'MAP', 'DASHBOARD', 'ALARMS', and 'DATA REPORTS'. Below the navigation bar is a map showing a location in Montgomery County, MD. A green pin is placed on the map. Below the map, there are tabs for 'Current Data', 'Graphs', 'Station Info', and 'Live Images'. The 'Live Images' tab is selected, showing a small thumbnail image of the bridge over the stream. The interface also displays the date and time: '2020-05-14 10:50'.

SUTRON XLink



- Digital and analog sensors
- Iridium and cellular telemetry options
- Low-cost

SUTRON SatLink 3



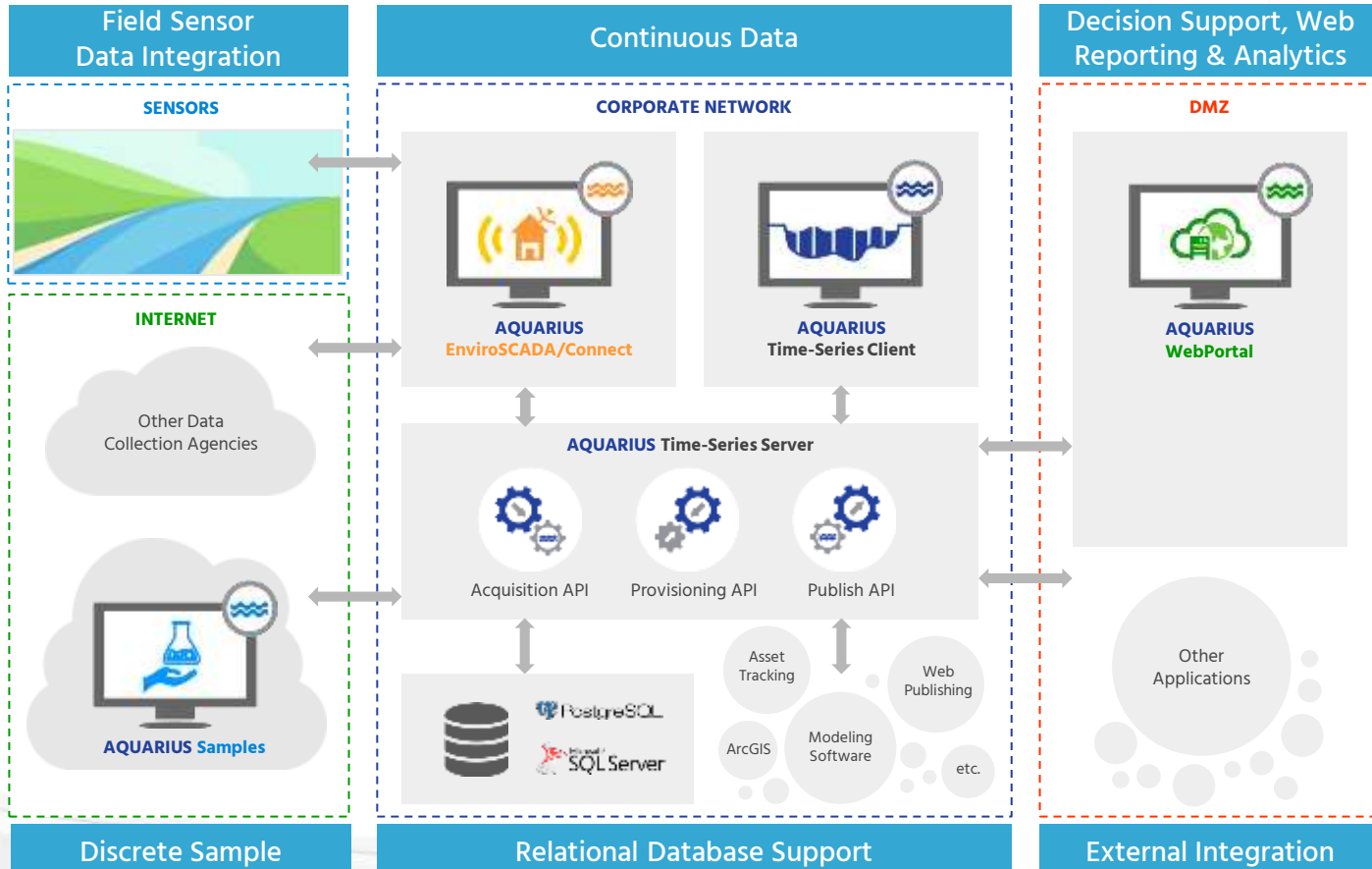
- 32 different sensor parameters
- Satellite GOES plus iridium and cellular options
- Remote locations

SOFTWARE OPTIONS – *OTT HydroMet Cloud*

- Dashboard view – allowing quick access to all data
- Smooth user-friendly interface
- Secure, cloud-based



AQUARIUS PLATFORM





How Much Does Data for a Flood Warning System Cost?

Costs of a Flood Warning System

Basic



\$2,000 - \$7,000

More User Friendly/Advanced



\$7,000 +



Depends on scope and technology selected

Costs of No Flood Warning System

- \$3.4 million in loss dollars paid*
- Maybe on the range of billions of dollars**



<https://www.goodmorningamerica.com/news/video/revelations-fired-fbi-director-exclusive-interview-61755987>

*<https://www.fema.gov/loss-dollars-paid-calendar-year>

**<https://www.accuweather.com/en/weather-news/flood-damage-and-economic-loss-in-the-heartland-to-reach-125-billion-this-spring/70007899>

**<https://www.cbsnews.com/news/river-flooding-in-midwest-damage-will-likely-total-more-than-1-billion/>

Q&A SESSION

Submit your questions!