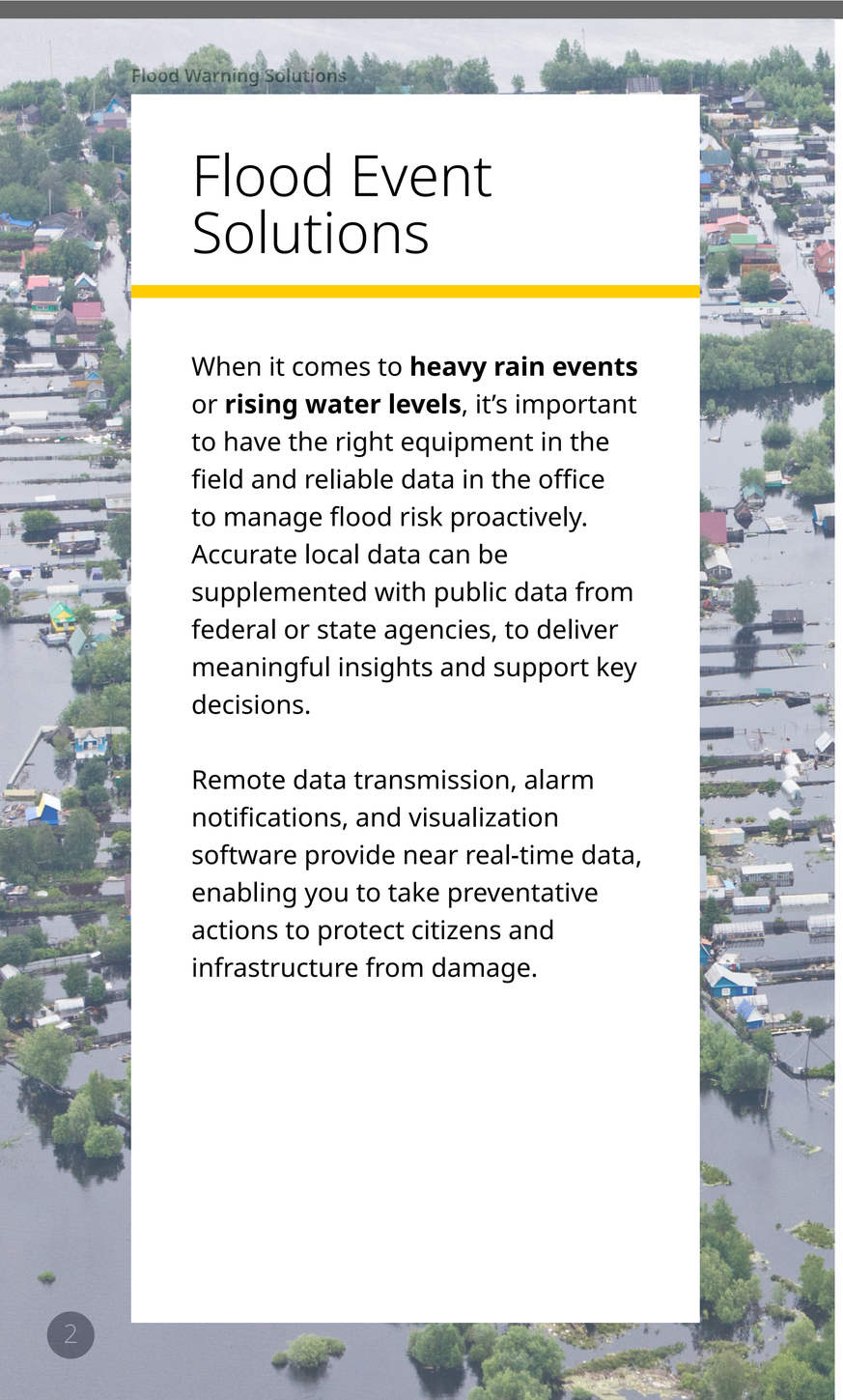
# FLOOD WARNING

**PRODUCT BROCHURE |** Customizable Solutions

OTT HydroMet



# Flood Event Solutions

When it comes to **heavy rain events** or **rising water levels**, it's important to have the right equipment in the field and reliable data in the office to manage flood risk proactively. Accurate local data can be supplemented with public data from federal or state agencies, to deliver meaningful insights and support key decisions.

Remote data transmission, alarm notifications, and visualization software provide near real-time data, enabling you to take preventative actions to protect citizens and infrastructure from damage.

## Why is Data Collection Important?

When flooding situations arise, there are several stages of action: **anticipating**, **responding**, and **preventing** possible future flooding. Numerous hydrology professionals utilize data to help monitor flooding before it occurs, make decisions during flood events, and conduct maintenance afterwards to prevent future damage.

1.

You **collect** data from the field which can be remotely transmitted to you in the office. You can also set thresholds which trigger specific actions once they are reached, like sending you an SMS text.
Data can include precipitation/rainfall, water level, stream flow, and soil moisture.

2.

You **communicate** the data to stakeholders or disseminate as needed to emergency first responders, city officials, and the general public. It informs their key decision making during flood events for gates, warnings/alarms, and more.

3.

You **empower** your local community with critical flood insights that can ultimately help protect lives and property.

# Monitoring Heavy Rain/Rising Water Levels

There are several system components that a flood data collection network can include, most notably sensors, dataloggers, and software solutions. Individual monitoring stations can also be equipped with cameras/webcams to provide near real-time images, which can give quick insights on current water levels.

## Sensor

A sensor is an instrument placed in the field that takes critical measurements of certain parameters, such as **water level**, **precipitation**, and **water flow**. Easily installed at critical sites, sensors provide the measurements you need in order to know if flood events are approaching.

## Datalogger/ Transmitting Data

A datalogger is a device which you can connect to your sensors to record the data that is taken in the field. They can transmit data from the field back to you in your office or smart device at a specified frequency, such as every 5 minutes. Dataloggers can collect data continuously and digitally.

## Software/ Viewing Data

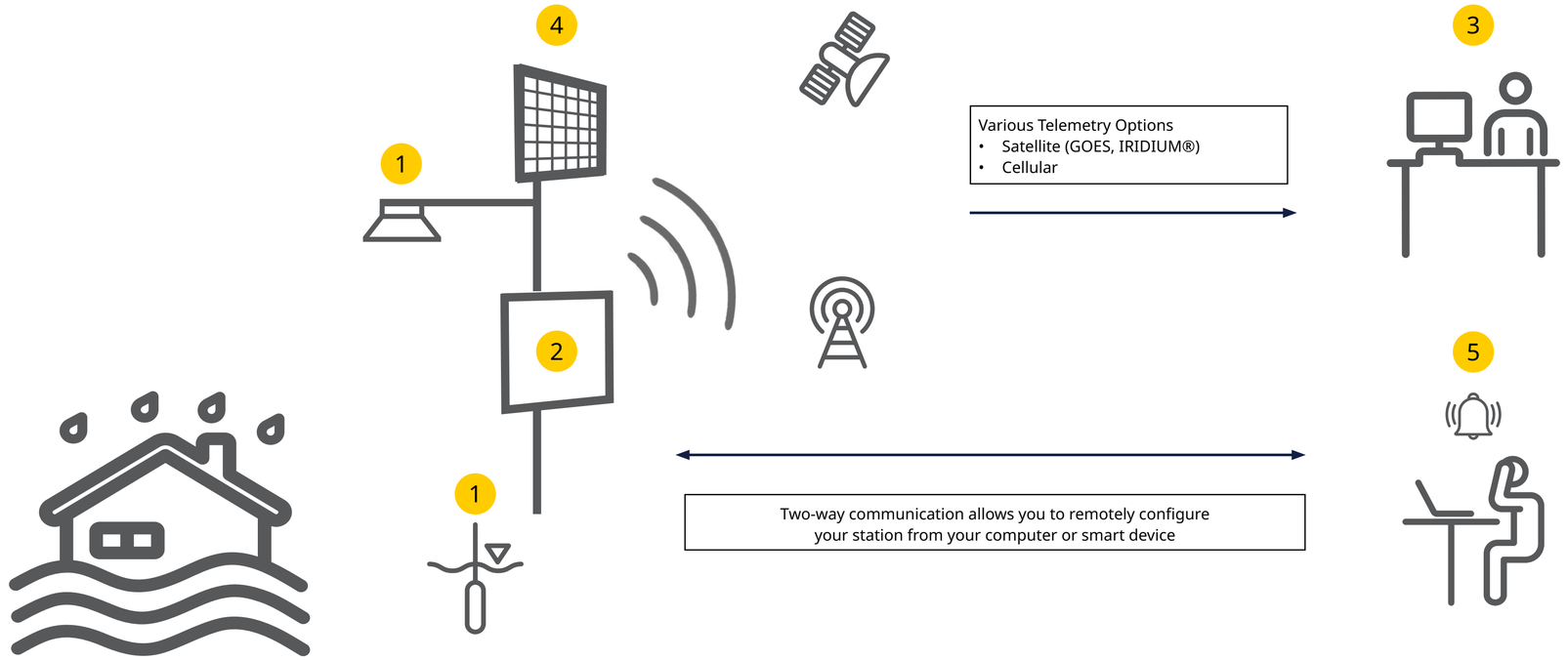
A software solution provides access to the data collected in the field by a datalogger, so data can be viewed in near real-time, when you need it the most. Software is typically a data visualization tool that receives, ingests, and processes the transmitted data.
Interfaces can feed data into external solutions, websites, and information systems. Integrated software such as Hydromet Cloud performs all of these functions within one data management program/web interface.

## Alarm Notifications

You can program certain thresholds into your field stations for each parameter you measure. You can choose to trigger certain actions if the threshold is reached, such as an alarm to go off or an SMS text to be sent to the phones of stakeholders.
For example, an alarm can be triggered if there has been a minimum of 1” rain for the past 3 hours, which for some regions signifies a dangerous water level. This insight can help predict flood events.

# Visualizing a Flood Network

1. Sensor(s)
2. Datalogger
3. Software solution
4. Solar panel
5. Alarm




## Let us help you select your solution for flood monitoring:

- Alarm Water Level Gauge System
- Precipitation Gauge System

# Alarm Water Level Gauge System

**Your needs:**
To quickly warn stakeholders of the risk of rising water levels or heavy rain to act proactively.

**Our recommended solution:**
Measuring stations with remote data transmission, integrated alarming, solar panel(s) for remote power, and visualization software. Alarming features include:
• Customizable thresholds
• Discrete, i.e. text messages

## 1. Sensors

### OTT Radar Level Sensor (RLS)

Non-contact level solution, ideal for surface water level monitoring where debris or high sediment concentrations may be present in water. Maintenance-free.
*easy to conceal under a bridge

Alternative Option

### OTT Pressure Level Sensor (PLS)

Easy-to-install robust pressure transducer to measure water level, pressure, and temperature. Ideal for most locations including snow/ice and areas without a bridge.
*easy to conceal as an in-pipe solution

## 2. Dataloggers

### SUTRON XLink 500 Logging Transmitter

A multi-sensor input logger, for digital and analog sensors, with data transmission via Iridium or Cellular. Includes custom Python Scripting and compatible with the easy-to-use LinkComm GUI interface via WiFi or directly with any smart device.

## 3. Telemetry

### IRIDIUM®

Ideal for reliable, full global coverage to transmit data remotely. Allows for two-way communication for remote station configuration which helps reduce on-field visits.

Alternative Option

### Cellular

Ideal for reliable data transmission with large bandwidths and alarms where cell service is available. Methods of transmission include SMS, FTP(S), and HTTP(S). Also allows for two-way communication.

## 4. Software

### OTT Hydromet Cloud

A secure cloud-based solution with a smooth, user-friendly interface to quickly visualize critical data.

# Precipitation Gauge System

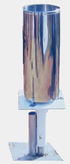
**Your needs:**
To quickly know which geographic problem areas are affected by rain and water levels, and their duration, so you can narrow focus and deploy limited resources and emergency staff effectively.

**Our recommended solution:**
Small measuring stations at hotspots with visualization through a software solution.

Stations can also include remote data transmission, integrated alarming, solar panel(s) for remote power, and visualization software. Alarming features include:
- Customizable thresholds
- Discrete, i.e. text messages

## 1. Sensors

**SUTRON Stainless Steel Tipping Bucket Rain Gage**



Standard precision instrument for the measurement of rainfall accumulation and/or rate. Contains an internal tipping bucket, designed for years of accurate and trouble-free operations.

Alternative Option

**OTT Pluvio² S**

Compact weighing precipitation gauge, for high accuracy during high intensity rain events. Ideal for liquid and non-liquid precipitation, and nearly maintenance-free.

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# Sensor Selection Guide

| | Application | Parameters | Key Advantages |
|---|---|---|---|
| **OTT Radar Level Sensor (RLS)** | Alarm level<br>• Surface water | • Water level<br>• Distance water | **Ideal for debris or sediment laden rivers/streams or flash floods.**<br>• Non-contact radar level sensor with pulse radar technology to measure safely above the water from a bridge, pier, or mounting arm to avoid large debris and high sediment loads. |
| **OTT Pressure Level Sensor (PLS)** | Alarm level<br>• Groundwater<br>• Surface water | • Water level<br>• Water pressure<br>• Water temperature | **Ideal for stilling wells, bridges, weirs, or flumes.**<br>• Robust, vented ceramic pressure transducer.<br>• Made with saltwater resistant steel for coastal environments and snow/ice.<br>• Automatic water temperature and barometric pressure compensation. |
| **SUTRON Stainless Steel Tipping Bucket Rain Gage** | Precipitation | • Precipitation amount<br>• Precipitation rate | **Ideal as a standard US compliant solution for accurate rainfall measurements.**<br>• Internal tipping bucket design to measure precipitation accumulation and rate.<br>• Fully stainless steel with built-in level indicator and pre-drilled feet. |
| **OTT Pluvio² S** | Precipitation | • Precipitation amount<br>• Precipitation intensity<br>• Bucket content (real-time and non real-time) | **Ideal for highly accurate readings for both liquid and non-liquid precipitation.**<br>• Virtually maintenance-free and lifetime calibrated.<br>• Weighing gauge handles high volumes and intensity of rain during flood conditions. |

# Services

**OTT HydroMet provides on-site maintenance by our certified experts, with optional on-site training.**

**We also provide:**

- **Regular training sessions at particular OTT HydroMet locations**
- **Technical support available by phone or email**
- **Support for large or complex projects**
- **Several options for customized, locally stored and operated software solutions**

# Insights for Experts

Let’s start designing your custom solution.
Please contact us at:

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