



BUYING GUIDE

Resilient Monitoring for a Changing Climate:

A Guide to Hydrology Camera Solutions



Elevate water and flood risk management with hydrology cameras

In the dynamic field of water and flood risk management, where rainfall and flood events are becoming increasingly frequent and intense, the need for precision tools that increase vigilance with timely, actionable data is more critical than ever.

Hydrology cameras take natural hazard risk management to the next level, offering water resource managers, flood warning system operators, and emergency managers a clear view of high-risk flood areas, streams, stormwater systems, dams, and more.

Whether you are enhancing an existing network or installing your first camera, selecting the right camera solution can be a daunting task. But AEM is here to help. This buying guide highlights the key applications and components of a hydrology camera solution, equipping you with the knowledge and tools you need to confidently choose the right solution for your needs.

BENEFITS OF HYDROLOGY CAMERAS



Watch over high-risk flood areas: Cameras act as constant guardians, continually monitoring flood-prone areas. With real-time imagery at your fingertips, you can keep people and property safe.



Boost situational awareness: Easily track multiple points of interest at the same time to help you spot and address issues before they become problems.



Respond faster when minutes matter: During extreme flood events, seconds count. Cameras provide the real-time visual confirmation you need to make quick, informed decisions.



Remotely monitor vital systems: Cameras keep watch to ensure your remote water systems and infrastructure are functioning properly, from small streams to massive dams.



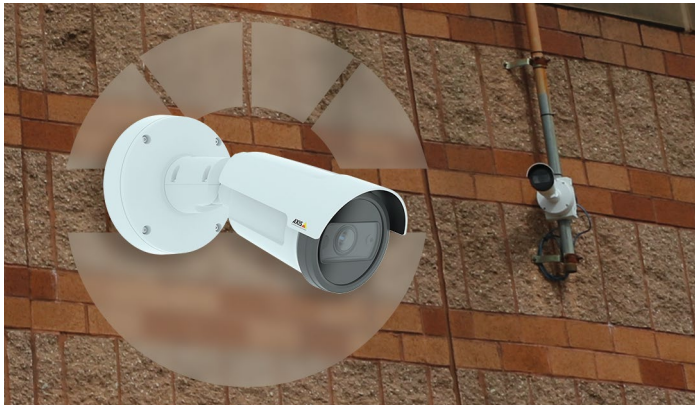
KEY APPLICATIONS:

- Flood monitoring and early warning systems
- Dam safety and infrastructure inspection
- Stormwater management
- High Water Detection Systems
- Aquatic ecosystem monitoring
- Data analytics and trend analysis



Key components of a camera monitoring solution

Whether you're monitoring a sprawling catchment area or a single critical point, hydrology cameras provide the data-driven insights you need.



FIXED CAMERAS

Monitor static locations such as water gauges or critical infrastructure with a fixed camera.

- Stationary lens with a fixed field of view
- Suitable for specific, unchanging points of interest
- Typically lower in cost

PAN-TILT-ZOOM (PTZ) CAMERAS

Cover a wide range of areas and respond to dynamic monitoring needs with a PTZ camera.

- Motorized pan, tilt, and zoom functions for 360-degree visibility
- Zoom in to capture detailed views of specific locations
- Automated tours and programmable positions for enhanced monitoring



VISUALIZATION TOOLS

Gain insights and improve situational awareness with camera software.

- Access and control images, guard tours, and timelapses from any device
- View sensor data and camera images in one place
- Integrate existing and new cameras in a single application



How to choose a camera solution

Selecting the right camera solution for hydrologic monitoring and flood early warning systems requires careful consideration. Here are key questions to examine when selecting the right solution for your application.

QUESTION	BENEFIT
<p>What do I want to do with my camera?</p>	<ul style="list-style-type: none"> • What is the coverage area that I want to monitor? • What information do I want to capture with my camera? • Am I monitoring a static location or do I want to be able to view a wide range of areas?
<p>Where do I plan to install the camera?</p>	<ul style="list-style-type: none"> • Is there existing infrastructure where I will install the camera, such as a building or tower or pole? • Do I need guidance on the optimal locations to install my camera network?
<p>How will I power my camera?</p>	<ul style="list-style-type: none"> • Is there existing AC power? • Do I need battery backup? • If no power is available, do I need help identifying the right solar power kit for my location and application?
<p>How will I retrieve the images from my camera?</p>	<ul style="list-style-type: none"> • Is there Ethernet available at my location or will I need to use cellular service?
<p>How often do I want to capture and retrieve images?</p>	<ul style="list-style-type: none"> • Do I need to retrieve images in near real time (every minute) so I can monitor quickly changing conditions, like flash floods? • Or do I need to receive images less frequently (hourly or daily) for a long-term monitoring application?
<p>Do cameras need to integrate with existing or planned early warning systems?</p>	<ul style="list-style-type: none"> • Is there seamless communication between the cameras and alerting applications? • Do I need software that can incorporate sensor data and camera images into one dashboard? • Do I need to configure alerts based on sensor and camera information?
<p>How do I need to remotely monitor and control my PTZ cameras?</p>	<ul style="list-style-type: none"> • Is there a guard tour option with the camera software? • Can I add multiple points of interest to capture images of different locations? • How user-friendly is the remote monitoring interface, and does it allow for real-time control during emergencies? • Can PTZ cameras be easily operated or viewed from a centralized dashboard or mobile devices? • Can I share camera images with the public?



Transform camera data into actionable insights with the AEM Elements™ Resiliency Platform

SMART CAMERA TECHNOLOGY

Enhance your monitoring capabilities with precision technology.

- Get real-time visual intelligence across your viewshed with our comprehensive portfolio of fixed and PTZ camera technology.
- Combine cameras and sensors in your network for a more complete view of high-risk flood areas, streams, stormwater systems, dams, and more.

AEM ELEMENTS 360

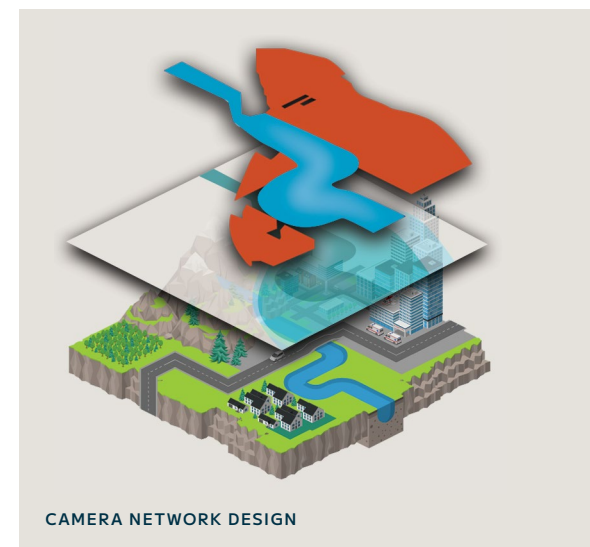
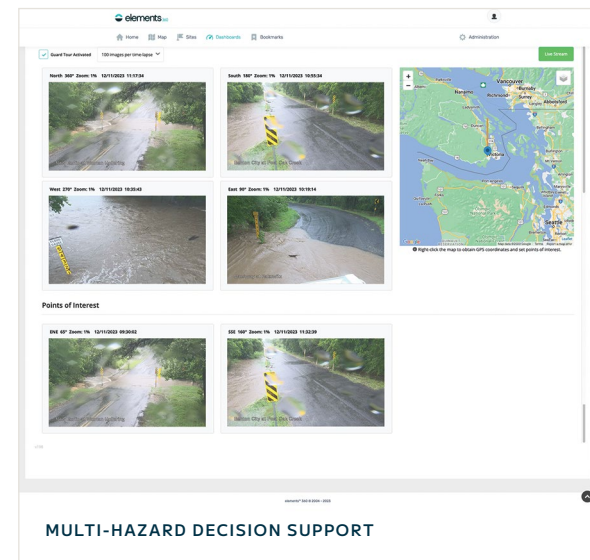
Transform camera insights into action across multiple hazards with the AEM Elements 360 decision support application.

- Seamlessly integrate data from your existing or new camera network and virtually any other data source for more complete real-time visual intelligence.
- Combine environmental and camera data to identify high-risk spots, easily integrating them into your guard tours for real-time monitoring and rapid response to evolving conditions.

CAMERA NETWORK DESIGN

Access a team of hydrology experts to optimize your camera network design.

- Assess hydrologic risks to uncover areas with highest exposure to people, property, and infrastructure during flooding events.
- Architect a dependable camera network configured to deliver the images you need when and where you need it.





Let's start a conversation

At AEM, we understand that every agency's camera needs are unique to their water and flood risk management strategies and their region's climate and geography. That's why our team of hydrology solutions experts is here to help you craft an end-to-end camera network solution that works for your team, your needs, and your budget.

To learn more about how we can help you maximize situational awareness and increase efficiency of response in the face of growing flood risks, **be sure to contact AEM today** so we can start a conversation about solution alignment for your needs.

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