

Real-time Monitoring Sensors and Station

Things to Consider

Communication:

How will sensors and stations transmit data?

- Cellular Network
- Radio Antennae
- Satellite

Data Management Services:

How will Data be stored and served? What are data management capabilities?

- Software Platform – Data Dashboard
- Mobile Application
- Third-Party Services (NWS, Datawise, Weather Underground etc.)
- Alert Notification Capability

Sensor / Station Setup:

Which sensors should be used and where should they be established? Compatibility needs to be considered?

- Weather Station (Wind, Rain, Temp, Humidity)
- Rain Gauge Sensor
- Water Level Sensors (Radar, Ultrasonic, Pressure Transducers)
- Camera
- “Packaged” stations allow for multiple sensors to interchangeably connect to station

Intellisense - AWARE Flood Sensor

Communication Options:

How will sensors and stations transmit data?

- Cellular Network (Verizon LTE Compatible)
- Iridium Satellite
- 10 or 30 minute data transmission

Data Management Services:

How will Data be stored and served?

What are data management capabilities?

- Data Dashboard
- Third-Party Services Capability
- Alert Notification Capability

Sensor / Station Setup:

Which sensors should be used and where should they be established?

Compatibility needs to be considered?

- Solar Powered Station
- Rain Gauge Sensor
- Water Level Sensors - Pressure Transducers
- Camera 640x480 Resolution (Optional)
- Soil Moisture Sensors (Optional)



Intellisense - AWARE Flood Sensor



AWARE Flood Featured on the Local News in Charlotte for Alerting Residents to Flash Flooding

February 7, 2020

Over 100 AWARE Flood Sensors are installed in northern Charlotte to warn residents of flash floods during heavy rain events.

High Sierra Electronics - Flood Warning System

Communication Options:

How will sensors and stations transmit data?

- Cellular Network (Verizon Compatible)
- 5, 15 or 60 minute data transmission
- Radio Antennae or GOES Satellite Compatibility



Data Management Services:

How will Data be stored and served?

What are data management capabilities?

- Software
- Third-Party Services Capability
- Alert Notification Capability

Sensor / Station Setup:

Which sensors should be used and where should they be established?

Compatibility needs to be considered?

- Solar Powered Station
- Rain Gauge Sensor
- Water Level Sensors - Pressure Transducers or Radar Level Sensors
- Camera Sensor (Optional)
- Road-side Warning Systems (Optional)
- Compatible Third-party Sensors



Price Quotes

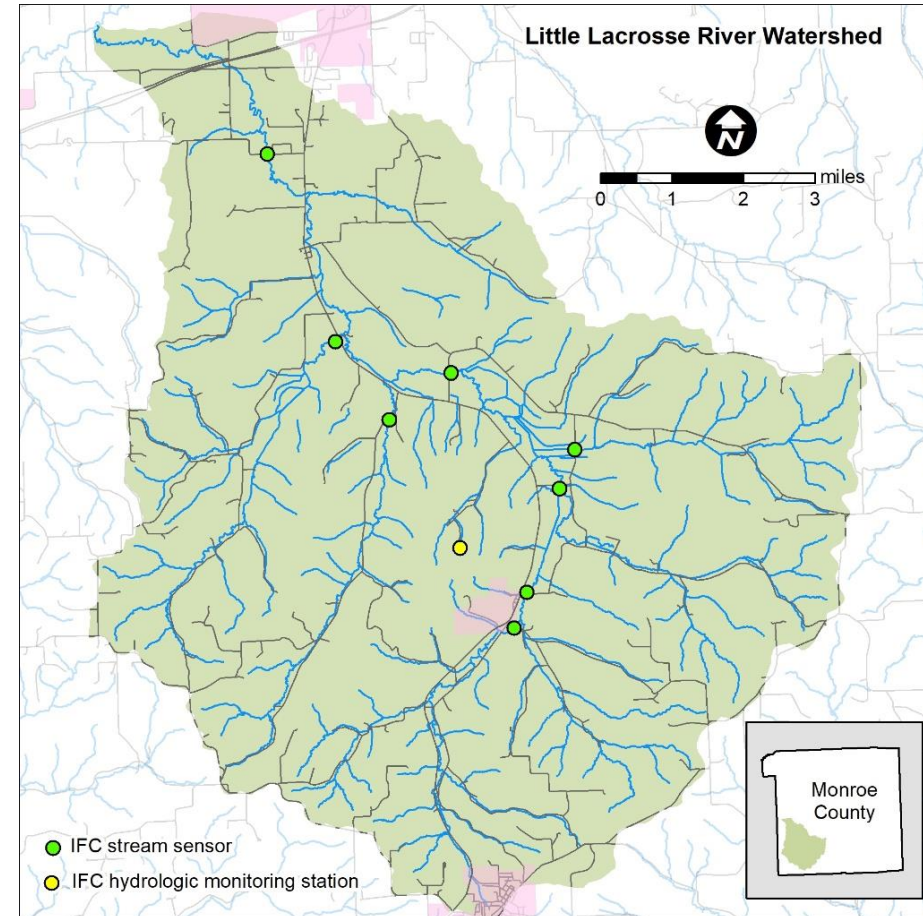
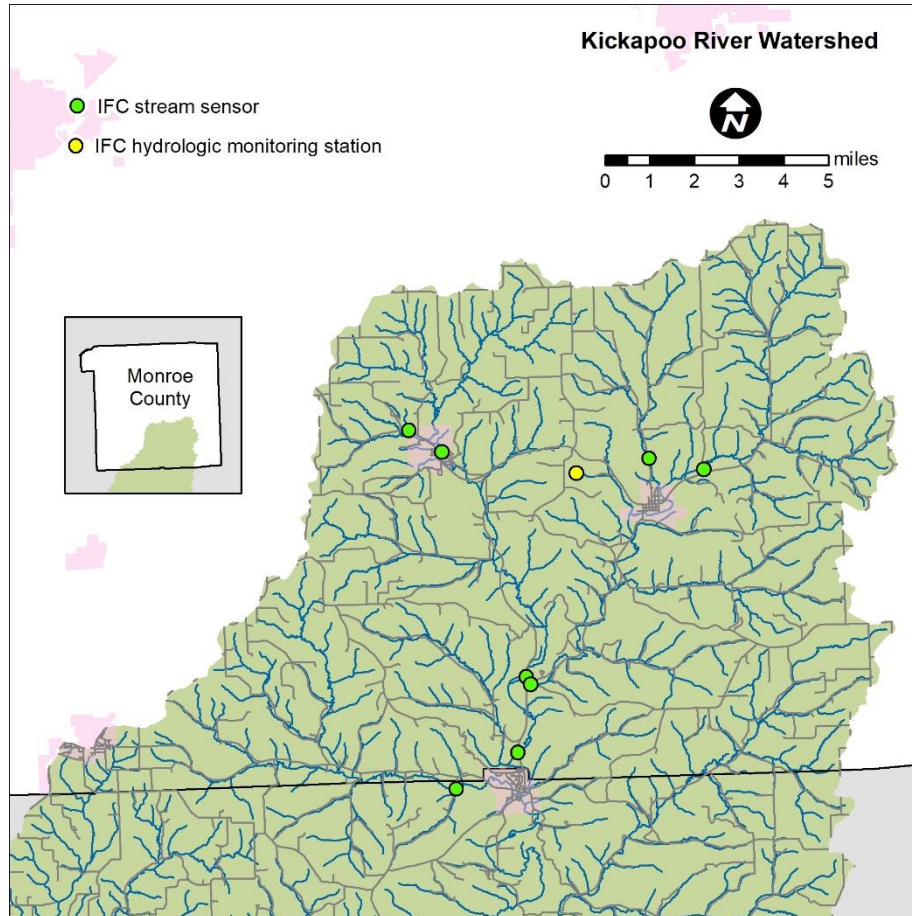
Description	Davis Instruments	Intellisense	High Sierra Electronics
Station – Receiver/Transmitter with Cellular Modem	\$1,290	\$2,495	\$1,511
Rain Gauge Sensor	\$400	\$800	\$995
Water Level Sensor	\$600	\$500	\$1,267
Software / Dashboard Service / Alert Notifications	Free	Currently Free	\$590
Cellular Plan Service (dependent on data plans)	\$320	\$300	\$100
Misc – Mounting Equipment, Encasements, Cables, etc.	\$135	Included	\$1,193
Cost Estimate	\$2,745	\$4,095	\$5,656

NOTE: These are initial price quotes. Shipping, taxes and additional accessories that may be needed are not included.

Desired Station and Sensor Setup for Watershed Deployment

Iowa Flood Center Recommendation for Each Watershed:

- 1 Hydrologic Station (Weather Station, Groundwater Well, and Soil Moisture Sensors)
- 8 Stream Monitoring Stations



Desired Station and Sensor Setup for Watershed Deployment

Goals for Watersheds:

- Weather Monitoring Station (preferably in Cashton for Little La Crosse River and Coon Creek Watersheds)
- Several Stream Monitoring Stations per Watershed
- Camera Stations at Norwalk Dam in Kickapoo Watershed and Town of Leon in Little La Crosse Watershed
- USGS Gage Station on Little La Crosse River
- Optional sensors to be added to stations depending on funding: soil moisture sensors, groundwater sensors

Fishers and Farmers Partnership Grant Project Goals:

- Approximately \$7,800 grant funding available for monitoring stations
- Project Area is within Little La Crosse Watershed
- Establish up to 3 monitoring stations
- Project period starts Summer 2020!

