1st DRAFT – Proposal to Expand Water Level Sensor Network

Project Description:
Purchase and install 22 water level sensors to expand the existing network in Hampton Roads.

Locations of water level sensors would be based on the analysis of Dr. Loftis at VIMS who evaluated the locations that would improve the overall accuracy of flooding forecasts using the methodology used by StormSense.

Map of locations (separate attachment):
Red: 22 sites identified by the model as having the highest value
Black: Rest of the 86 sites evaluated
Blue: current NOAA and USGS sensors

Host localities would be responsible for maintenance of sensors. (topic for discussion – could be regional contract)

Sensor data could be hosted by localities or VIMS or other entities (for discussion).

Value of Sensors:

- Sensors report water levels in near real-time that can be used by emergency managers and the public
- VIMS and others researchers can use the readings to help refine computer models and improve predictions of the extent and duration of flooding events.

Cost of Sensors:

- Several types of sensors have been used in Hampton Roads for this purpose. Key factors that impact costs are power and connectivity.
    - Power: sensors typically have solar panel and battery. Cost increases according to the size of the solar panel and the life of the battery.
    - Connectivity: Wifi and cellular network are options. (Norfolk is working on creating a wireless zone with sensors tied in; cellular connections work nearly everywhere)
- Cheapest option $500/sensor but it needs wireless zone.
- Most expensive option $4200/sensor which has large solar panel and cellular connectivity.