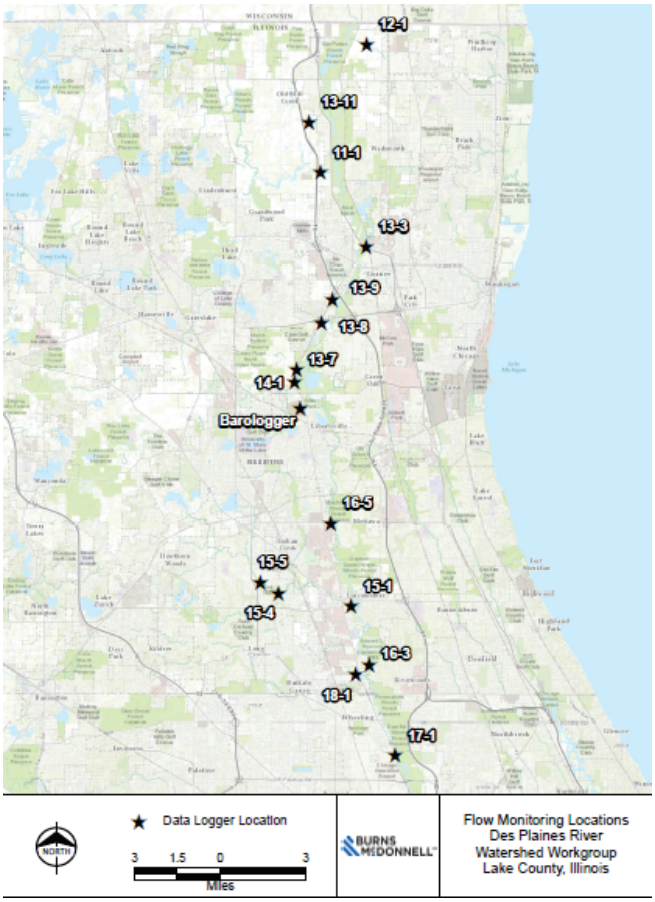
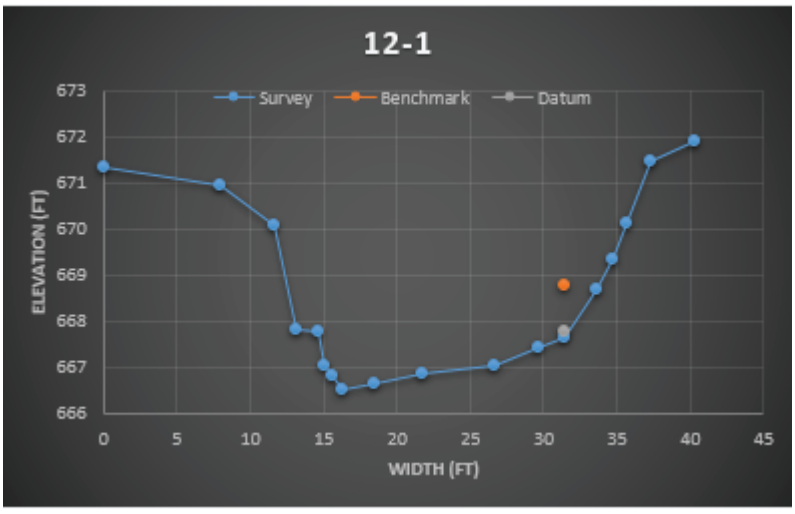
2017 Summary of: Des Plaines River Watershed Flow Monitoring Project

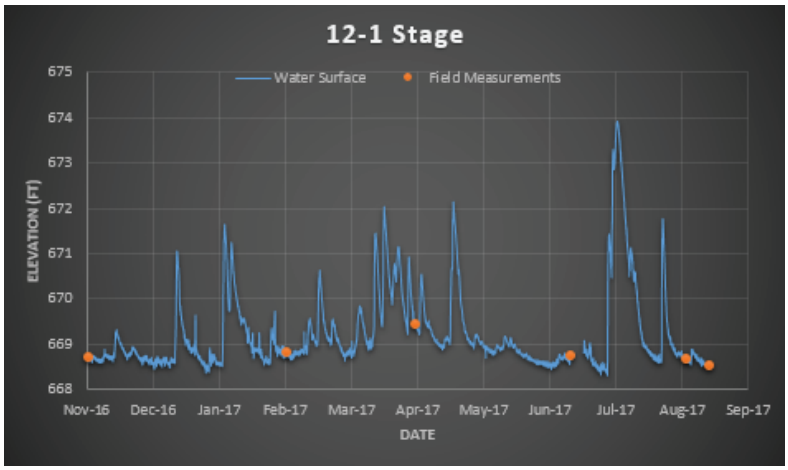
One of DRWW's contractors, Burns & McDonnell Engineering Company, Inc. (B&M), installed a flow monitoring network of 15 in-stream stage data loggers in late 2016 and collected data from the data loggers in 2017 to estimate flow in the Main Branch of the Des Plaines River and its tributaries. Data from six existing U.S. Geological Survey (USGS) data loggers were also used, equaling 21 locations overall. Flow data helps estimate pollutant loads and track water quality and biological community trends.



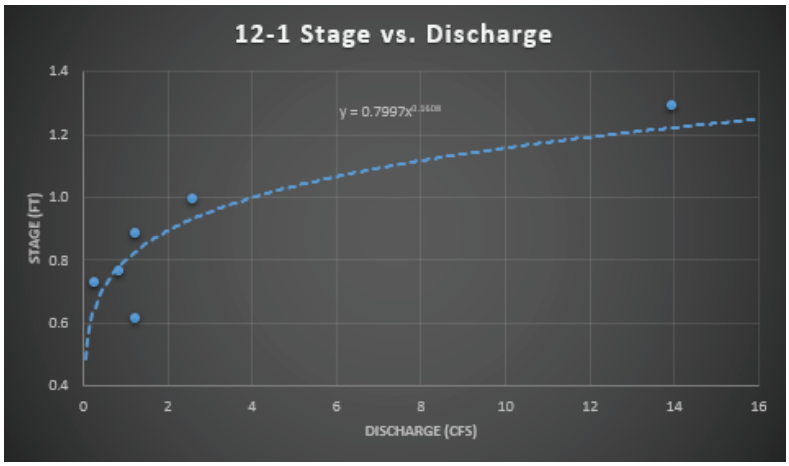
Field measurements were taken six times at the 15 locations to confirm that the data collected by the loggers reflected actual field conditions.



All of this data was used to create three graphs for each of the 15 locations. The first graph illustrates the x-section of the stream where the data logger was installed.



The second graph shows the elevation of water in the stream over time. The red dots are where the actual measurements were taken by field crews.



The third graph is the Stage vs. Discharge graph, which allows us to estimate the amount of flow in that section of the stream during various water levels (or during rain events). The blue dots are the actual field measurements taken by field crews.

The proposed monitoring locations were chosen based on a qualitative review of the current DRWW stream monitoring network within the watershed. Sites were chosen based on position in the watershed, proximity to existing gauge stations, proximity to existing water quality sampling locations, and relative contribution of flow from subwatersheds. The study was intended to establish a baseline of monitoring locations and begin to develop reliable stage-discharge relationships that can be used to estimate pollutant loads within the watershed. Pollutant loads are calculated as the product of stream discharge and the concentration of a pollutant in water. Loads can be calculated as an instantaneous value or summed to provide an annual load. Understanding the relative magnitude and timing of pollutant loads across subwatersheds is a powerful tool for prioritizing water quality improvement projects and determining where to allocate scarce resources.

All of the Stage vs. Discharge graphs can be located on DRWW's website, at www.DRWW.org. Once there, click on the "Maps & Photos" tab, select "Maps," and then click "Lake County Impaired Waters Web Map (WebApp)." The flow monitoring locations are identified by rain clouds, just click a cloud to view the map - you may have to scroll down on the dialog box to see the map. If you have any questions, feel free to contact Beth Adler, the DRWW Technical Coordinator, at 847-377-7702 or Badler@lakecountyil.gov.