



Ralph Snow, P.E.
DPW Commissioner
Christine Clancy, P.E.
City Engineer

TO: Eileen Donoghue, City Manager *EMD*
FROM: Christine Clancy, P.E., City Engineer
DATE: September 18, 2019
RE: C. Cirillo – Request City Manager provide the City Council with an update as to the installation of an up-river gauge to use for improved dam control

The City recently met with U.S. Geological Survey (USGS) to review the existing USGS gage station on the Merrimack River, which is located near the Hunts Fall Bridge. The purpose of this meeting was to understand how the gage operates and the logistics of adding another one along the Merrimack River as requested in this motion.

Below is a picture of the existing gage system. It was installed in the 1930s and equipment has been updated with technology upgrades since the original installation. The station currently operates off of solar power and transmits flow and water elevation readings via satellite to the USGS website (https://waterdata.usgs.gov/nwis/uv?site_no=01100000). Pipes connect between the river and the metering station to efficiently measure the water elevation.



Figure 1: Hunts Fall Existing Gage System



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Newer stations are much smaller than the existing station at the Hunts Falls location. Below is a picture of a newer USGS metering station. USGS indicated that the cost to install a station is approximately \$30,000 - \$45,000. This initial cost would cover design and installation costs and a five year monitoring and maintenance program with USGS.



Figure 2: Example of recently installed USGS Gage System

Enel owns and operates the dam control at Pawtucket Falls. The contractual agreement between Enel and the City requires certain dam control measures be implemented when specific elevations at the Hunts Fall USGS gage system are reached. The installation of an upstream gage would provide data that cannot directly relate to the dam control. Given the estimated costs required to install and maintain the station and the inability to relate this information directly the dam control measures, an additional gage on the Merrimack River is not recommended.

Thank you

CC: Ralph Snow, DPW Commissioner
Chief Jeffrey Winward, Fire Chief
Christine O'Connor, City Solicitor