

# LIFT STATION PERFORMANCE AND ADEQUACY PROCEDURE

## Lift Station Performance and Adequacy

- This assessment work will consist of the following;
  - Review and analyze pump run time meters;
  - Assess pump start counters;
  - Compute Nominal Average Pump Operating Time ("NAPOT");
    - Use one or months data to calculate for fixed-speed pumps
    - Sum the total hours of pump operation over assessment period,
    - Divide sum by the number of days included in the assessment period.
    - Divide result from previous calculation by one less than the total number of pumps installed at the lift station. This is the NAPOT.
    - Note: Lift stations determined to have a NAPOT greater than 10 hours per day may be targeted for additional investigations.
    - Use pump operating times to evaluate variable speed pumps.
  - Conduct root cause failure analysis (when applicable);
    - Review operating histories of the lift station
    - Conduct assessment to try to determine the progression of events and consequences that led to the lift station failure.
    - Document types and trends of failures identified by the assessment.
    - Develop solutions that minimize future failures from similar issues which could be considered in subsequent evaluations of lift stations.
  - Review Supervisory Control and Data Acquisition ("SCADA") alarm history
- Evaluate station capacity in accordance with the Pumping Systems chapter of the most current version of WEF's Manual of Practice FD-4, Design of Wastewater and Stormwater Pumping Stations;
- Review station unit records and interview operators to evaluate critical response time (CRT), defined as the time interval between activation of the high wet well level alarm and the first SSO, under peak flow conditions ;
  - The CRT will be used to evaluate responsiveness capabilities including the potential use of mobile generators, quick connect electrical hookups, and mobile pumps as well as make recommendations to minimize SSOs. The CRT assessment will also include the evaluation of the ability of COM Lift Station and contract staff to take corrective action within the critical response time estimated for each Lift Station.
- Conduct physical inspection and review recent operating and mechanical failure history during at least the past five years to assess station condition.

- Evaluate station design and equipment in accordance with Chapter 40, Wastewater Pumping Stations of the most recent edition of Recommended Standards for Wastewater Facilities by the Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers (commonly known as the “Ten State Standards”)