



# City of Northampton

Department of Public Works

## Stormwater and Flood Control Utility

### FY 2020 Annual Report

## **STORMWATER AND FLOOD CONTROL UTILITY BUDGET AND RATES**

The FY 2020 Stormwater and Flood Control Utility Budget was set at \$1,996,486. The calculation of bills for all properties resulted in a total hydraulic area, or usage number, of 77,316,971 square feet. Based on the budget and the total hydraulic area, the annual billing rate was determined to be \$0.025822 per square foot of hydraulic area.

Quarterly bills were calculated for and issued to 11,190 properties.

As of June 30, 2020, active credits were approved for 1,285 properties for a total annual value of \$96,899.04.

## **STORMWATER CAPITAL PROJECTS**

### **Drainage repairs and improvements incorporated into paving projects:**

- Denise Court/Barrett Street
- Bridge Road
- Glendale Road
- Burts Pit Road
- Spring Street
- Chesterfield Road
- Cross Street

Drainage work included but was not limited to the addition or replacement of drain pipe, sub-drain, and drain structures in some areas; catch basin replacements; and replacements or resetting of frames and grates and covers for catch basins and manholes, respectively.

### **Drain Repair Contract**

Geeleher Construction was awarded a contract for specialized Sewer & Drain Repairs. They repaired a drainage sinkhole at the City Hall rear parking lot that was becoming a safety hazard. They also repaired the large stone and brick-arch, Market Street Brook drain line off Hawley Street where a large sinkhole had developed.

## **FLOOD CONTROL CAPITAL PROJECTS**

### **Hockanum Road Pumping Station Rehabilitation**

The Hockanum Flood Control Pumping Station was constructed by the Army Corps of Engineers (USACE) in 1941 as part of the City's flood control system. The station contains the majority of the originally installed equipment, including pumps, engines, and electrical systems. Although the station is in working order and has been maintained throughout the years, some of the equipment is either at the end of its useful life or is outdated and presenting a safety hazard. The City retained the engineering consultant Tighe & Bond to evaluate the pumping station and make recommendations for necessary renovations.

The engineering design work for Phase 1 of the rehabilitation is complete, which includes replacing the station's electrical systems and the electric jockey pump motor, installing a low-pressure sewer line to service the restroom in the pumping station, and replacing the 3,000 gallon gas and diesel underground storage tanks with above-ground tanks.

### **Levee Toe Drain Repairs and Improvements**

The City conducted inspections of the levee toe drains and access manholes in September 2015. However, approximately two thirds of the system was not inspected due to pipe obstructions and limited access manholes. Tighe & Bond prepared design plans to install an additional 28 manholes system-wide along the toe drain and to clean, repair, and inspect the drains. Confirmation of properly functioning toe drains is critical to maintaining Active status with the USACE and for the upcoming Federal Emergency Management Agency (FEMA) Levee Accreditation.

### **FEMA Levee System Accreditation**

The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program (NFIP), which governs flood insurance coverage and floodplain management. The Flood Insurance Rate Maps (FIRMs) are the official maps of a community on which FEMA has delineated flood hazard areas. The FIRMs for the City of Northampton became effective in 1978 and are in the process of being updated by FEMA. The City is responsible for Levee Certification so that the levee-protected area continues to be mapped as a Zone X, moderate-risk area. The Certification process includes detailed engineering analyses related to embankment stability and settlement, freeboard, settlement, closure structures, interior drainage, operations, and other items.

GZA GeoEnvironmental, Inc. has been retained by the City to conduct the Certification of the levee system for FEMA Accreditation. Work completed in fiscal year 2020 includes the completion of a drilling program for 22 borings up to 52 feet deep on the levee system to gather geotechnical data to inform the embankment stability study.

## **STORMWATER OPERATIONS AND MAINTENANCE**

### **Catch Basin Maintenance**

- Cleaned 594 catch basins;
- Inspected these catch basins and measured for depth of sump and depth of sediment to collect baseline data for the City's Environmental Protection Agency (EPA) issued National Pollutant Discharge Elimination System (NPDES) MS4 permit.

### **Catch Basin and Drain Manhole Cover Repairs/Replacement**

- Repaired, replaced or reset 36 catch basin and drain manhole grates and covers, respectively.

### **Installation and Repair of other Stormwater System Components**

- Installed, repaired and or replaced other stormwater system components as needed, including installing granite curbing on Morningside Drive and replacing drain pipe on Arch Street.

### **Storm Event Flood Mitigation**

- Performed ongoing removal of leaves, snow and debris from catch basin grates before and during storm events to mitigate drainage backups and roadway flooding;
- Cleaned debris from culverts to mitigate drainage backups and roadway flooding.

### **Street Sweeping**

- All City streets were swept at least one time;
- The Central Business District was swept 2 times each month;
- The Central Business District was swept for special events such as First Night and the Holiday Stroll;
- Florence Center, Baystate Village, Leeds Village, King Street/Damon Road/Bridge Street Area, Glendale Road, West Farms Road and Downtown Parking Lots were swept each month.

### **Cleaning of Drain Ditches and Swales**

- Cleaned sediment and debris from 13 ditches and swales.

### **Stormwater System Inspections**

- Performed pipe video inspections of drain lines and other assets to identify and investigate structural failures, sink holes and other problems in the drainage system;
- Inspected drain outfalls to investigate erosion problems and inspect for possible illicit discharges to the drainage system in accordance with the EPA MS4 Permit.

### **King Street Brook / Barrett Street Marsh Flood Mitigation**

- Performed jet rodding and Vactor cleaning of the culvert under the bike path to maintain flow during storm events and to reduce sedimentation of the Barrett Street Marsh

### **Development Project Engineering Review**

- DPW Engineering staff reviewed all development plans submitted for permitting through the Office of Planning and Sustainability for impacts to the City's drainage system and reviewed proposed drainage connections and/or alterations to the City's drainage system.

### **Public Drainage Information Requests**

- DPW Engineering staff responded to inquiries from designers, contractors, developers and land owners with questions about the drainage system and provided documents and information.

### **Stormwater Management Permits**

- DPW Engineering staff provided ongoing review and inspection of development projects that disturb over one acre in the City under the Stormwater Management Permit program and in accordance with the EPA MS4 Permit.

### **Illicit Discharge Investigations and Enforcement**

- No illicit discharge connections were detected;
- DPW staff attended a training workshop on Illicit Discharge Detection and Elimination (IDDE).

### **DPW Engineering Project Coordination and Development**

- DPW Engineering staff provided coordination, development support and construction oversight on projects for stormwater management system capital projects.

### **EPA NPDES Stormwater MS4 Permit**

- The EPA NPDES Stormwater MS4 Permit went into effect on July 1, 2018;
- The DPW implemented various tasks required by the EPA Stormwater MS4 Permit under the six minimum control measures: Public Education, Public Involvement, Illicit Discharge Detection and Elimination, Construction Site Runoff Control, Post Construction Stormwater Management and Good Housekeeping and Pollution Prevention.

## **FLOOD CONTROL SYSTEM OPERATIONS AND MAINTENANCE**

### **Levee Inspection and Maintenance**

- Performed vegetation maintenance and routine inspection of the Connecticut River and Mill River levee systems.

### **Connecticut River Flood Control – Hockanum Road Pumping Station**

- Activated the Connecticut River flood control pumps 27 days during high river levels and major precipitation events;
- Maintained the flood control station including: preventative routine maintenance of pumping systems, gates, trash racks, electrical components, the National Weather Service river gauge, and other associated equipment. The pumps are run monthly to ensure that they will operate as required.

### **Mill River Flood Control – West Street Pumping Station**

- Maintained the station including: preventative routine maintenance of the engine, pump, fuel system and other equipment. The pumps are run monthly to ensure that they will operate as required.

### **DPW Engineering Coordination and Development**

- DPW Engineering staff provided coordination and development support for all flood control capital projects.

## **STORMWATER AND FLOOD CONTROL UTILITY ADMINISTRATION**

### **DPW Utility Billing**

- Maintained records and processed quarterly Stormwater and Flood Control Utility bills;
- Processed abatements and credits to Stormwater and Flood Control Utility Fees;
- Communicated with property owners regarding billing questions.

## **DPW Engineering Division**

- Reviewed Stormwater and Flood Control Utility credit applications and administration of the credit program;
- Reviewed Stormwater and Flood Control Utility abatement requests;
- Communicated with property owners regarding technical billing questions;
- Maintained and corrected property data and fee calculations for the Stormwater and Flood Control Utility.

## **FUTURE PROJECTS**

### **Stormwater Infrastructure Improvements**

For FY21-FY22, the City is planning reconstruction of significant portions of roadways to include Atwood Drive, Pine Street, Winter Street, Loudville Road, Meadow Street, Warfield Place and Hayes Avenue. Stormwater infrastructure improvements will be designed and implemented as part of these projects.

Additionally, targeted site stormwater infrastructure improvements include:

- Maynard Road catch basin installation;
- West Street subdrain installation;
- Mill River bank stabilization;
- Dryads Green outfall repair and stabilization;
- Adare Place drain upgrade.

### **Hockanum Road Pumping Station Rehabilitation**

The construction of Phase 1 of the rehabilitation project is anticipated to be completed in 2022. Future phases of rehabilitation include: design and construction for resizing and replacing the HVAC system, replacing the existing gas and diesel engines and axial lift pumps with new diesel engines and axial lift pumps, and refurbishing components of the existing building structure.

### **Levee Toe Drain Repairs and Improvements**

Design work is complete and Army Corps approval of the project has been received. The project has been bid and was awarded to Ludlow Construction with completion anticipated by the end of 2021.

### **FEMA Levee System Accreditation**

The schedule for the system Certification is driven by FEMA's timeline for developing the revised FIRMs and base flood elevations for Northampton. FEMA's current schedule is to have a preliminary mapping complete in the summer of 2021, followed by final mapping in 2022. GZA GeoEnvironmental is well underway in development of the necessary geotechnical and interior flooding analyses and system survey in anticipation of FEMA data availability so that certification documentation can be finalized and submitted to FEMA for review and approval.