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related to  
flooding.*

*DPC*

*01/14/2022*



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# Town of Hatfield, Massachusetts

## Wastewater Management Plan

### Final Report

December 7, 2020



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| Design Parameter                                       | Design Year (1984) | Current Year (2017) |
|--|--------------------|---------------------|
| Hydraulic Retention Time at Current Peak Flow, minutes | 7.4                |                     |
| Aeration Type  | Coarse Bubble      |                     |

The wastewater flows down the aerated grit chamber effluent channel to a 12-inch ductile iron pipe where it flows to the influent screens.

Each influent screen is stainless steel drum with 1/16 inch (0.06-inch) perforations throughout the drum. The wastewater flows through the center of the screen drum which is 24-inches in diameter and 48-inches long. Each screen has a peak capacity of 1,200 gpm or 1.728 MGD. Spray water is utilized within the screen drum to dislodge screenings from the perforations and convey the screenings to a belt conveyor. The belt conveyor then transfers the screenings to the screenings and grit dumpster for off-site disposal. The wastewater is then divided between two 12-inch ductile iron pipes. Each pipe is equipped with an isolation plug valve followed by a rotating drum fine screen. No bypass is provided for the screens, as such one screen must remain in service at all times. After passing through the screens the wastewater recombines in a 12-inch ductile iron pipe and flows via gravity to the RBC influent distribution channel.

**Unit Process Condition Assessment**

Based on discussions with the operations staff and our observations, the grit removal system is not functional and has been out of service for approximately 3 years. The operations staff noted that when the system was functional it was prone to flooding during events when the wastewater pumping stations are pumping at their maximum capacity. The flooding was contained within the aerated grit chamber but resulted in hydraulic short circuiting which caused grit to be washed into the downstream processes. As such some of the accumulated grit washes into the screening system where it has to be manually removed. The flooding also created an operational mess, which had to be manually cleaned up by the operations staff once flows subsided. According to the operations staff the aerated grit chamber was never very effective for the capture and removal of accumulated grit, difficult to operate, required frequent maintenance to keep the system operational and parts were cumbersome to obtain. Since no grinding or screening equipment is provided before the aerated grit chamber, the grit system equipment is not protected against clogging due to large stringy debris (rags), which occurred on a regular basis and exacerbated the wear to the grit system equipment. This deficiency needs to be corrected. The operations staff also noted that the roofing contractors accidentally dumped rocks from the roofing system into the grit tank influent and effluent pipes when the roof was replaced in 2012. While some of the rocks were removed, it is believed that some remain within the bends to and from the tank. Based on the observations and discussions with the WWTP staff the entire grit removal system is in need of an upgrade and the grit removal equipment is beyond its intended design and useful life.

Based on discussions with the operations staff and our observations, the screening system is functional and captures screenings as designed. However, the screening drums are showing signs of wear due to their age. The wear on the screening drums is exacerbated by the grit accumulation. Flooding of the screens is also a major concern as biological growth closes up the screen pores which results in flooding of the screening room. In an effort alleviate the flooding the screens are hosed down daily by the operations staff to remove the accumulated biomass. Even with the daily hosing, flooding of the screenings room still occurs.



3. The HVAC components for the building are inadequate throughout the building.

#### 4.1.4 Residuals Disposal

The methods of residuals disposal for the sludge, scum, grit and screenings generated at the WWTP as well as at the municipally owned wastewater pumping stations was reviewed. All sludge, scum, grit and screenings generated at the WWTP are hauled offsite via a contracted hauler as needed in accordance with all local, state, and federal regulations. Currently the Wall Trucking is contracted to haul the liquid waste sludge as part of a regional contract through the Franklin County Solids Waste District. Wall Trucking, as part of the same contract, is contracted to haul the screenings and grit debris generated at the WWTP. The sludge and grit/screening debris hauling contracts are renewed by the Franklin County Solids Waste District on a yearly basis.

All of the screenings as well as the sludge, scum, grit and debris captured within the wetwells of the municipally owned wastewater pumping stations and the sanitary sewers is removed and transported via a vacuum pumper truck on an as needed basis. The screenings and wetwell debris are also hauled by Greg's Septic out of South Deerfield, Massachusetts. Greg's Septic disposes of the collection system and pumping station debris at the WWTP where it is transferred to the appropriate containers and ultimately disposed of by Wall Trucking. The removal and disposal of this debris is in accordance with all local, state, and federal regulations.

#### → 4.1.5 FEMA Resiliency/Flood Mitigation

In January 2015 a Federal Flood Risk Management Standard was established by Executive Order 13690. Executive Order 13690 required a flood risk assessment for critical public facilities and structures located within flood prone areas. The WWTP the flood elevation and hazard area was assessed for compliance with Executive Order 13690. The assessment evaluated the ability of the WWTP to meet the climate change resiliency standards with regards to flood protection. Per the executive order one of the climate change resiliency standards requirements must be met for the system to be compliant with Executive Order 13690.

#### → 4.1.5.1 100 Year Flood Elevation Assessment

The 100-year flood risk assessment requires that the top of concrete/first floor elevation be a minimum of three feet above the 100-year flood elevation as established by FEMA. The 100-year flood elevation at the WWTP site is elevation 127.8 (NGVD 29 Datum). Based on the information provided within the WWTP record drawings, the finished grade elevation around the facility is relatively flat at elevation 129. The finished floor/top of concrete elevation for the operations building is 129.5 and the blower building and RBC structures is 132.5. The WWTP RBC and blower building structures as configured are compliant with the 100-year flood elevation risk assessment as defined by Executive Order 13690. The WWTP operations building structures as currently configured is not compliance with the 100-year flood elevation risk assessment as defined by Executive Order 13690. A finish floor elevation of 130.8 is required for the WWTP operations building to be compliant with the 100-year flood elevation risk assessment as defined by Executive Order 13690.

#### → 4.1.5.2 500 Year Flood Elevation Assessment

The 500-year flood risk assessment requires that the top of concrete/first floor elevation be at or above the 500-year flood elevation as established by FEMA. The 500-year flood elevation at the WWTP site is approximately elevation 132.8 (NGVD 29 Datum). Based on the information provided within the WWTP record drawings, the finished grade elevation around the facility is relatively flat at elevation 129. The finished floor/top of concrete elevation for the operations





building is 129.5 and the blower building and RBC structures is 132.5. The WWTP site and structures as configured are not compliant with the 500-year flood elevation risk assessment as defined by Executive Order 13690.



#### 4.1.5.3 Compliance with Executive Order 13690

The finished floor/top of concrete elevation for the buildings and structures as currently configured is not compliant with the 100-year or the 500-year flood risk assessment standard. Executive Order 13690 requires that only one of the two standards need to be met for the facility to be in compliance. Since the WWTP operations building is not 3 feet above the 100-year flood elevation the WWTP as currently configured is not in compliance with Executive Order 13690.

## 4.2 FUTURE CONDITIONS

### 4.2.1 20-Year Flows and Loads

This section provides details of the development of future influent flows and loads and effluent limits used as the design basis for sizing of improvements. Additional wastewater flows to the WWTP will include those from:

- Increased density or growth within the existing sanitary sewer collection system.
- Several planned additions/expansions beyond the boundary of the existing sanitary sewer collection system.
- Commercial and Industrial developments within existing empty lots.
- Commercial and Industrial re-developments within existing occupied/blighted lots.

These flows and loads are anticipated to be connected to the collection system within the next twenty years some before and some after the completion of upgrades to the WWTP, a summary of the projected flows is provided in **Table 4-12**.

#### 4.2.1.1 Septage

The Town currently does not accept septage from area haulers. Based on discussions with the operations staff the Town does not want to accept septage at the WWTP. No flow and load allocation for septage has been included as part of this study.

#### 4.2.1.2 Industrial Wastewater

The Town currently does not have any significant industrial users. Based on discussions with the Town it is unlikely that any significant industrial users will relocate and discharge industrial process water to the WWTP within the planning period. No flow and load allocation for any significant industrial users has been included as part of this study.

#### 4.2.1.3 Development of Projected Flows and Loads

Specific data relative to the waste characteristics for the identified flows are not available since they do not yet exist. Therefore, average daily waste load rates for the additional flow sources identified were developed using per capita waste generation rates recommended in the literature (ref: Wastewater Engineering – Treatment and Reuse, *Metcalf & Eddy (2004)*) for each constituent. A summary of the anticipated additional influent waste loads for the additional wastewater flows is provided in **Table 4-12**.



homeowner may be used for all costs necessary to repair or replace a failed septic system including:

1. Renovating the existing system
2. Connecting to an existing sanitary sewer
3. Replacing traditional septic systems with an approved Title 5 alternative system

To apply for a betterment loan, the homeowner must submit an application and petition the Board of Health. The systems that need work and that will be funded by a loan will be selected according to the priority list of that community. MassDEP has several guidance documents available to assist with understanding and implementation of the program.

## 5.4 FINANCING ALTERNATIVES

### 5.4.1 Current Rate System

The Town utilizes an Enterprise Fund for its wastewater utility. The revenues for the Enterprise Fund are generated through a sewer user fee system based on the water consumption of each customer. The revenues are utilized for funding the annual operation and maintenance (O&M) costs of the wastewater utility as well as capital expenditures and debt service. The wastewater Enterprise Fund operates in conjunction with the Water Enterprise fund. Excess revenue from water and wastewater is maintained in a single retained earnings account. We strongly recommend that the Town operate the two Enterprise Funds separately. This will allow the Town to set the sewer rates annually to meet budget requirements, while maintaining a surplus is retained earnings dedicated solely for the operations of the wastewater utility.

### 5.4.2 Project Funding

The Town is currently exploring funding opportunities for the recommended plan, including United State Department of Agriculture – Rural Development (USDA-RD), the State Revolving Fund, and conventional financing. The Town plans to submit an application to USDA in December 2020 for the Phase 1 WWTP Upgrades.

## 5.5 PUBLIC PARTICIPATION

Throughout the project, regular meetings were held with Town representatives to provide updates on project progress and receive feedback on tasks and deliverables. Refer to **Section 1.7** for additional information.

## 5.6 PERMITTING

Following is a summary of the potential permitting activities that may be associated with the implementation of the CIP. Assumptions and permitting thresholds must be revisited and verified as the project proceeds and more specific information is developed.

### 5.6.1 Massachusetts Department of Environmental Protection

The Massachusetts Department of Environmental Protection (MassDEP) will require permitting of upgrades at the wastewater treatment plants. Anticipated permits from MassDEP include:

1. BRP WP 68 Treatment Works Plan Approval, without Permit Modification

### 5.6.2 Massachusetts Environmental Policy Act

Comprehensive permitting and environmental review under the Massachusetts Environmental Policy Act (MEPA) may be required. The project will require state permitting and may be the recipient of state funding. The MEPA review thresholds will need to be revisited once the project



is further developed and environmental impacts are defined. Potential triggers for review under Environmental Notification Form (ENF) include: impact to  $\frac{1}{2}$  or more acres of any other wetland (including Riverfront Area and Bordering Land Subject to Flooding). An Environmental Impact Report (EIR) is not anticipated.

#### **5.6.3 Massachusetts Endangered Species Act**

A filing under the Massachusetts Endangered Species Act (MESA) may be required for projects that are located within areas mapped by the Natural Heritage and Endangered Species Program as Priority and Estimated Habitat. It is anticipated that much of the work will be exempt, in accordance with 321 CMR 10.14(5) and 10.14(6), which state that construction, repair, replacement or maintenance of sewer lines and wastewater treatment systems within existing paved areas, lawfully developed and maintained lawns or landscaped areas or within ten feet from the edge of existing paved roads is exempt from MESA review.

#### **5.6.4 Massachusetts Historical Commission**

Coordination with the Massachusetts Historical Commission is required to ensure that the project will not impact sensitive historical or archaeological resources. As much of the work is proposed within previously disturbed areas, impact to these resources is not anticipated.

#### **5.6.5 Massachusetts Department of Transportation (MassDOT)**

Approval of Work within Right-of-Way is required for work within the State Highway Layouts. An application for approval of work within MassDOT's rights-of-way, including a Traffic Control Plan, is required to be submitted for MassDOT review and approval prior to construction commencement.

#### **5.6.6 Massachusetts Wetlands Protection Act/Local Wetlands Regulations**

Wetlands protection is the responsibility of the Conservation Commission which abides by the Massachusetts Wetlands Protection Act and the Local Town Wetlands Protection Regulations. Work within wetlands resource areas or their jurisdictional buffer zones will require permitting from the Conservation Commission. Most work associated with existing wastewater infrastructure is exempt but still requires the going through the steps of the local Conservation Commission permitting process.

#### **5.6.7 Local Planning, Fire and Building Boards and Departments**

Coordination with the local Town Planning Board, Fire Department and Building Department is anticipated for renovation, construction and expansion of existing wastewater facilities.

#### **5.6.8 401 Water Quality Certification**

A Water Quality Certificate must be obtained from MassDEP for any discharge into navigable waters, under the Clean Water Act, section 401. While MassDEP maintains the right to exercise discretionary authority under this program, typical triggers include exceeding 5,000 square feet of disturbance in bordering and/or isolated vegetated wetlands and/or land under water, any discharge of dredged or fill material to an Outstanding Resource Water (e.g. vernal pools) and dredging more than 100 cubic yards. A Water Quality Certificate is not anticipated to be required for the proposed project.

#### **5.6.9 Massachusetts Programmatic General Permit Authorization**

The Massachusetts Programmatic General Permit (MA PGP) is administered by the United States Army Corp of Engineers and includes jurisdiction under Section 10 of the Rivers and Harbors Act and section 404 of the Federal Clean Water Act. Jurisdiction is triggered by the discharge of



**WASTEWATER PUMP STATION SITE VISIT FORM**

| Pump Station Identification  |   |                  |                                |
|--|---|------------------|--------------------------------|
| Name:  | Depot Road - Bradstreet                   |                  |                                |
| Construction:  | 1985 – No upgrades since                  |                  |                                |
| General  |   | Utility/O&M      |                                |
| Date:  | 8-09-2018                                 | Owner:           | Hatfield, MA                   |
| Time:  | 10:30 am                                  | O&M Division:    | Wastewater                     |
| Observer:  | Anthony DeSimone                          | Number of Staff: | 2                              |
| Site and Emergency Readiness   |   |                  |                                |
| Access:  | Off Road via paved driveway               | Emergency Power: | None                           |
| Flooding:  | Low spots in site paving                  | Bypass Header:   | Connection in valve vault      |
| Security:  | None – Guardrail and bollards around site | Other:           |                                |
| Configuration  |   | Pumping System   |                                |
| Type:  | Submersible                               | Type:            | Submersible                    |
| Building:  | None – Freestanding electrical cabinet    | Manufacturer:    | Hydromatic                     |
| Wetwell:   | 8' Concrete                               | Quantity:        | 2                              |
| Drywell:   | 6' Concrete                               | Motor:           | 10 hp                          |
| Other:   |   | Level Control:   | Floats – Mercury?              |
| Electrical   |   | Controls         |                                |
| Voltage:   | 208                                       | Flow Meter:      | None                           |
| Phase:   | 3 $\phi$                                  | Pump Controls:   | Floats                         |
| Condition:   | Fair                                      | SCADA:           | None – Alarm Transmission only |
| Comments   |   |                  |                                |
| <ol style="list-style-type: none"> <li>1. Pumping system designed for 100 gpm at 76 ft TDH. Existing pumps are original. Town has Flygt submersible pumps at two newest pumping stations. Want to standardize on one submersible pump moving forward.</li> <li>2. Static head = 138 – 104 = 34 ft; Forcemain is 4" DI, 6,705 ft long, plus 370 ft of 12" DI at the WWTF. Combines with 10" Maple Street forcemain and transitions to 12" at WWTF driveway.</li> <li>3. Pumping station is not equipped with an emergency generator connection but is provided with 2,000 gallons of offline storage.</li> <li>4. Concrete tops of both structures show severe Spalding.</li> <li>5. No fall protection is provided for the wetwell or valve vault.</li> <li>6. Operators noted that plowing and hitting the concrete wetwell and valve vault can be an issue.</li> </ol> |   |                  |                                |



**WASTEWATER PUMP STATION SITE VISIT FORM**

| Pump Station Identification  |  |                  |  |
|--|--|------------------|--|
| Name:  | Bridge Street                          |                  |  |
| Construction:  | 1999 – No upgrades since               |                  |  |
| General  |  | Utility/O&M      |  |
| Date:  | 8-09-2018                              | Owner:           | Hatfield, MA   |
| Time:  | 12:20 pm                               | O&M Division:    | Wastewater   |
| Observer:  | Anthony DeSimone                       | Number of Staff: | 2  |
| Site and Emergency Readiness   |  |                  |  |
| Access:  | Off Road via paved driveway            | Emergency Power: | None – Transfer switch and generator receptacle plug provided. |
| Flooding:  | None                                   | Bypass Header:   | Connection in valve vault                                      |
| Security:  | None                                   | Other:           |  |
| Configuration  |  | Pumping System   |  |
| Type:  | Submersible                            | Type:            | Submersible  |
| Building:  | None – Freestanding electrical cabinet | Manufacturer:    | Flygtt CP model  |
| Wetwell:   | 6' Concrete w/ 50" riser top slab      | Quantity:        | 2  |
| Drywell:   | 6' Concrete w/ 50" riser top slab      | Motor:           | 3 hp   |
| Other:   |  | Level Control:   | Floats   |
| Electrical   |  | Controls         |  |
| Voltage:   | 208                                    | Flow Meter:      | None   |
| Phase:   | 3∅                                     | Pump Controls:   | Floats   |
| Condition:   | Fair                                   | SCADA:           | None – Alarm Transmission only                                 |
| Comments   |  |                  |  |
| <ol style="list-style-type: none"> <li>1. Pumping system designed for 340 gpm at 17 ft TDH. Existing pumps are original. Town has Flygtt submersible pumps at two newest pumping stations. Want to standardize on one submersible pump moving forward.</li> <li>2. Static head = 133.27 – 129.93 = 3.34 ft; Forcemain is 6" PVC. A portion of the forcemain has less than 5 ft of cover and is insulated. The forcemain runs cross country to the discharge manhole at prospect court.</li> <li>3. Pumping station wetwell was full of grease. Operators noted that the wetwell was cleaned out approximately two months ago and all the grease was removed. There are several near by restaurants and grease accumulation in the wetwell is a recurring problem.</li> <li>4. Variable frequency drives are provided for the pumps.</li> <li>5. No fall protection is provided for the wetwell or valve vault.</li> <li>6. Operators noted that plowing and hitting the concrete wetwell and valve vault can be an issue.</li> <li>7. Wetwell vent is provided with a carbon filter for odor control.</li> </ol> |  |                  |  |



**WASTEWATER PUMP STATION SITE VISIT FORM**

| Pump Station Identification   |  |                  |  |
|---|--|------------------|--|
| Name:   | Dwight Bridge Street                   |                  |  |
| Construction:   | 2003 – No upgrades since               |                  |  |
| General   |  | Utility/O&M      |  |
| Date:   | 8-09-2018                              | Owner:           | Hatfield, MA   |
| Time:   | 12:45 pm                               | O&M Division:    | Wastewater   |
| Observer:   | Anthony DeSimone                       | Number of Staff: | 2  |
| Site and Emergency Readiness  |  |                  |  |
| Access:   | Off Road via paved driveway            | Emergency Power: | None – Transfer switch and generator receptacle plug provided. |
| Flooding:   | None                                   | Bypass Header:   | Connection in valve vault                                      |
| Security:   | None – Bollards around site            | Other:           |  |
| Configuration   |  | Pumping System   |  |
| Type:   | Submersible                            | Type:            | Submersible  |
| Building:   | None – Freestanding electrical cabinet | Manufacturer:    | Flygtt CP model  |
| Wetwell:  | 6'x6" Concrete                         | Quantity:        | 2  |
| Drywell:  | 6'x6" Concrete                         | Motor:           |  |
| Other:  |  | Level Control:   | Floats   |
| Electrical  |  | Controls         |  |
| Voltage:  | 208                                    | Flow Meter:      | Magmeter in valve vault  |
| Phase:  | 3 $\phi$                               | Pump Controls:   | Floats   |
| Condition:  | Fair                                   | SCADA:           | None – Alarm Transmission only                                 |
| Comments  |  |                  |  |
| <ol style="list-style-type: none"> <li>Existing pumps are original. Town has Flygtt submersible pumps at two newest pumping stations. Want to standardize on one submersible pump moving forward.</li> <li>Static head = 151.28 – 123.1 = 28.18 ft; Forcemain is 6" PVC DR 18, 8,336 ft long. Forcemain connects to the existing 6" PVC forcemain from the Elm Court pumping station. The Dwight Street Pump Station forcemain connects to the forcemain at the location with the Dwight Street Pump Station.</li> <li>No fall protection is provided for the wetwell or valve vault.</li> <li>Operators noted that plowing and hitting the concrete wetwell and valve vault can be an issue.</li> <li>An isolation valve is provided on the discharge forcemain.</li> <li>Operators noted that they did not like the Flygtt pump station controller.</li> <li>Operators noted that the pump station receives flow from the Route 5 sewer corridor and does not operate allot.</li> </ol> |  |                  |  |



**WASTEWATER PUMP STATION SITE VISIT FORM**

| Pump Station Identification  |  |                  |  |
|--|--|------------------|--|
| Name:  | Dwight Street                          |                  |  |
| Construction:  | 2003 – No upgrades since               |                  |  |
| General  |  | Utility/O&M      |  |
| Date:  | 8-09-2018                              | Owner:           | Hatfield, MA   |
| Time:  | 12:55 pm                               | O&M Division:    | Wastewater   |
| Observer:  | Anthony DeSimone                       | Number of Staff: | 2  |
| Site and Emergency Readiness   |  |                  |  |
| Access:  | Off Road via paved driveway            | Emergency Power: | None – Transfer switch and generator receptacle plug provided. |
| Flooding:  | None                                   | Bypass Header:   | Connection in valve vault                                      |
| Security:  | None – Bollards around site            | Other:           |  |
| Configuration  |  | Pumping System   |  |
| Type:  | Submersible                            | Type:            | Submersible  |
| Building:  | None – Freestanding electrical cabinet | Manufacturer:    | Flygtt CP model  |
| Wetwell:   | 6'x6" Concrete                         | Quantity:        | 2  |
| Drywell:   | 6'x6" Concrete                         | Motor:           |  |
| Other:   |  | Level Control:   | Transducer w/ backup Floats                                    |
| Electrical   |  | Controls         |  |
| Voltage:   | 208                                    | Flow Meter:      | Magmeter in valve vault  |
| Phase:   | 3Ø                                     | Pump Controls:   | Transducer   |
| Condition:   | Good                                   | SCADA:           | None – Alarm Transmission only                                 |
| Comments   |  |                  |  |
| <ol style="list-style-type: none"> <li>Existing pumps are original. Town has Flygtt submersible pumps at two newest pumping stations. Want to standardize on one submersible pump moving forward.</li> <li>Static head = 151.28 – 125.9 = 25.38 ft; Forcemain is 6" PVC DR 18, 4,201 ft long. Forcemain connects to the existing 6" PVC forcemain from the Elm Court pumping station. The Dwight Bridge Pump Station forcemain connects to the forcemain at the location with the Dwight Street Pump Station.</li> <li>No fall protection is provided for the wetwell or valve vault.</li> <li>Operators noted that plowing and hitting the concrete wetwell and valve vault can be an issue.</li> <li>An isolation valve is provided on the discharge forcemain.</li> <li>A water meter and yard hydrant are provided for use within the site.</li> <li>Operators noted that the pump station receives flow from the Route 5 sewer corridor and does not operate allot.</li> <li>Operators noted that they did not like the Flygtt pump station controller and the pump station controls and level system were recently upgraded, and the operators want to standardize the controls and level system for all the submersible pump stations.</li> </ol> |  |                  |  |



**WASTEWATER PUMP STATION SITE VISIT FORM**

| Pump Station Identification  |  |                  |                                |
|--|--|------------------|--------------------------------|
| Name:  | Elm Court                              |                  |                                |
| Construction:  | 1985 – No upgrades since               |                  |                                |
| General  |  | Utility/O&M      |                                |
| Date:  | 8-09-2018                              | Owner:           | Hatfield, MA                   |
| Time:  | 1:05 pm                                | O&M Division:    | Wastewater                     |
| Observer:  | Anthony DeSimone                       | Number of Staff: | 2                              |
| Site and Emergency Readiness   |  |                  |                                |
| Access:  | Off Road via unpaved driveway          | Emergency Power: | None                           |
| Flooding:  | Low spots in grass area                | Bypass Header:   | Connection in valve vault      |
| Security:  | Chain Link Fence and bollards          | Other:           | Bee infestation                |
| Configuration  |  | Pumping System   |                                |
| Type:  | Submersible                            | Type:            | Submersible                    |
| Building:  | None – Freestanding electrical cabinet | Manufacturer:    | Hydromatic                     |
| Wetwell:   | 8' Concrete                            | Quantity:        | 2                              |
| Drywell:   | 6' Concrete                            | Motor:           | 10 hp                          |
| Other:   |  | Level Control:   | Floats – Mercury?              |
| Electrical   |  | Controls         |                                |
| Voltage:   | 208                                    | Flow Meter:      | None                           |
| Phase:   | 1Ø                                     | Pump Controls:   | Floats                         |
| Condition:   | Fair                                   | SCADA:           | None – Alarm Transmission only |
| Comments   |  |                  |                                |
| <ol style="list-style-type: none"> <li>1. Pumping system designed for 200 gpm at 51 ft TDH. Existing pumps are original. Town has Flygt submersible pumps at two newest pumping stations. Want to standardize on one submersible pump moving forward.</li> <li>2. Static head = 151.28 – 121 = 30.28 ft; Forcemain is 6" PVC, 4,635 ft long. The Dwight Street pumping station connects to the forcemain at the intersection with Dwight Street.</li> <li>3. Pumping station is not equipped with an emergency generator connection but is provided with 2,000 gallons of offline storage.</li> <li>4. Bees built nests in each of the structures as well as the site entrance gate lock clasp.</li> <li>5. No fall protection is provided for the wetwell or valve vault.</li> <li>6. Operators noted that plowing and hitting the concrete wetwell and valve vault can be an issue.</li> </ol> |  |                  |                                |





**WASTEWATER PUMP STATION SITE VISIT FORM**

| Pump Station Identification   |  |                  |                                |
|---|--|------------------|--------------------------------|
| Name:   | Ferry Road – Main Street                                   |                  |                                |
| Construction:   | 1985 – No upgrades since                                   |                  |                                |
| General   |  | Utility/O&M      |                                |
| Date:   | 8-09-2018  | Owner:           | Hatfield, MA                   |
| Time:   | 10:45 am   | O&M Division:    | Wastewater                     |
| Observer:   | Anthony DeSimone   | Number of Staff: | 2                              |
| Site and Emergency Readiness  |  |                  |                                |
| Access:   | Off Road deadend street / paved driveway                   | Emergency Power: | None                           |
| Flooding:   | Low spots in site paving and drainage area next to PS site | Bypass Header:   | Connection in valve vault      |
| Security:   | None – Bollards around site                                | Other:           |                                |
| Configuration   |  | Pumping System   |                                |
| Type:   | Submersible  | Type:            | Submersible                    |
| Building:   | None – Freestanding electrical cabinet                     | Manufacturer:    | Hydromatic                     |
| Wetwell:  | 6' Concrete  | Quantity:        | 2                              |
| Drywell:  | 6' Concrete  | Motor:           | 10 hp                          |
| Other:  |  | Level Control:   | Floats – Mercury?              |
| Electrical  |  | Controls         |                                |
| Voltage:  | 208  | Flow Meter:      | None                           |
| Phase:  | 3∅   | Pump Controls:   | Floats                         |
| Condition:  | Fair   | SCADA:           | None – Alarm Transmission only |
| Comments  |  |                  |                                |
| <ol style="list-style-type: none"> <li>Pumping system designed for 100 gpm at 74 ft TDH. Existing pumps are original. Town has Flygt submersible pumps at two newest pumping stations. Want to standardize on one submersible pump moving forward.</li> <li>Static head = 138 – 106.75 = 31.25 ft; Forcemain is 4", 170 ft long. Combines with 10" forcemain from Maple Ave PS and continues along Main Street to the WWTF.</li> <li>Pumping station is not equipped with an emergency generator connection but is provided with 2,000 gallons of offline storage. The area adjacent to the offline storage tank is a drainage lowspot/retention area and is prone to water storage/ponding/swampy conditions.</li> <li>Concrete top of both structures shows some Spalding.</li> <li>No fall protection is provided for the wetwell or valve vault.</li> <li>Operators noted that plowing and hitting the concrete wetwell and valve vault can be an issue.</li> <li>Pumping station was originally located closer to the road but was relocated to the current location during construction. No record / engineered plan exists in the current location. The record plans show hand drawn modifications to the approximate current location.</li> </ol> |  |                  |                                |



**WASTEWATER PUMP STATION SITE VISIT FORM**

| Pump Station Identification   |  |                  |  |
|---|--|------------------|--|
| Name:   | Gore Avenue  |                  |  |
| Construction:   | 1999 – No upgrades since   |                  |  |
| General   |  | Utility/O&M      |  |
| Date:   | 8-09-2018  | Owner:           | Hatfield, MA   |
| Time:   | 12:35 pm   | O&M Division:    | Wastewater   |
| Observer:   | Anthony DeSimone   | Number of Staff: | 2  |
| Site and Emergency Readiness  |  |                  |  |
| Access:   | Off Road via paved driveway  | Emergency Power: | None – Transfer switch and generator receptacle plug provided. |
| Flooding:   | None – Adjacent field appeared to have drainage issues into station area | Bypass Header:   | Connection in valve vault                                      |
| Security:   | None   | Other:           |  |
| Configuration   |  | Pumping System   |  |
| Type:   | Submersible  | Type:            | Submersible  |
| Building:   | None – Freestanding electrical cabinet                                   | Manufacturer:    | Flygtt CP model  |
| Wetwell:  | 6' Concrete w/ 50" riser top slab  | Quantity:        | 2  |
| Drywell:  | 6' Concrete w/ 50" riser top slab  | Motor:           | 4 hp   |
| Other:  |  | Level Control:   | Floats   |
| Electrical  |  | Controls         |  |
| Voltage:  | 240  | Flow Meter:      | None   |
| Phase:  | 1∅   | Pump Controls:   | Floats   |
| Condition:  | Fair   | SCADA:           | None – Alarm Transmission only                                 |
| Comments  |  |                  |  |
| <ol style="list-style-type: none"> <li>1. Pumping system designed for 240 gpm at 27 ft TDH. Existing pumps are original. Town has Flygtt submersible pumps at two newest pumping stations. Want to standardize on one submersible pump moving forward.</li> <li>2. Static head = 149.42 – 130.69 = 18.73 ft; Forcemain is 6" PVC.</li> <li>3. The valve pit lock was inaccessible.</li> <li>4. No fall protection is provided for the wetwell or valve vault.</li> <li>5. Operators noted that plowing and hitting the concrete wetwell and valve vault can be an issue.</li> <li>6. Wetwell vent is provided with a carbon filter for odor control.</li> </ol> |  |                  |  |



**WASTEWATER PUMP STATION SITE VISIT FORM**

| Pump Station Identification   |   |                  |  |
|---|---|------------------|--|
| Name:   | King Street                             |                  |  |
| Construction:   | 1995 – No upgrades since                |                  |  |
| General   |   | Utility/O&M      |  |
| Date:   | 8-09-2018                               | Owner:           | Hatfield, MA   |
| Time:   | 11:00 am                                | O&M Division:    | Wastewater   |
| Observer:   | Anthony DeSimone                        | Number of Staff: | 2  |
| Site and Emergency Readiness  |   |                  |  |
| Access:   | Off Road via paved driveway             | Emergency Power: | None – Transfer switch and generator receptacle plug provided. |
| Flooding:   | None                                    | Bypass Header:   | None   |
| Security:   | Locked structures. Bollards around site | Other:           |  |
| Configuration   |   | Pumping System   |  |
| Type:   | Submersible                             | Type:            | Submersible  |
| Building:   | None – Freestanding electrical cabinet  | Manufacturer:    | Meyers   |
| Wetwell:  | 8'x8' Concrete                          | Quantity:        | 2  |
| Drywell:  | 8'x10' Concrete                         | Motor:           | 10 hp  |
| Other:  |   | Level Control:   | Level transducer w/ backup floats                              |
| Electrical  |   | Controls         |  |
| Voltage:  | 208 – 225A                              | Flow Meter:      | None   |
| Phase:  | 3∅                                      | Pump Controls:   | Level transducer   |
| Condition:  | Good                                    | SCADA:           | None – Alarm Transmission only                                 |
| Comments  |   |                  |  |
| <ol style="list-style-type: none"> <li>1. Pumping system designed for 150 gpm at 48 ft TDH. Existing pumps are original. Town has Flygt submersible pumps at two newest pumping stations. Want to standardize on one submersible pump moving forward.</li> <li>2. Static head = 149.23 – 111 = 38.23 ft; Forcemain is 4" DI, 597 ft long.</li> <li>3. No fall protection is provided for the wetwell or valve vault.</li> <li>4. Wetwell is equipped with an access ladder and platform. These are used to access the wetwell floats and level transducer.</li> <li>5. Valve vault is equipped with a heating system and an odor control injection system. Odor control system utilized potassium permanganate but has been discontinued for over 10 years.</li> <li>6. Operators noted that snow removal can be an issue and due to the bollards plowing is almost impossible.</li> <li>7. Major bee infestation.</li> </ol> |   |                  |  |



**WASTEWATER PUMP STATION SITE VISIT FORM**

| Pump Station Identification   |  |                  |   |
|---|--|------------------|---|
| Name:   | Maple Street   |                  |   |
| Construction:   | 1985 – No upgrades since   |                  |   |
| General   |  | Utility/O&M      |   |
| Date:   | 9/11/2018  | Owner:           | Hatfield, MA                                  |
| Time:   | 8:00 am  | O&M Division:    | Wastewater                                    |
| Observer:   | Anthony DeSimone   | Number of Staff: | 2   |
| Site and Emergency Readiness  |  |                  |   |
| Access:   | Off Road via paved driveway  | Emergency Power: | Diesel generator located in control building. |
| Flooding:   | None   | Bypass Header:   | Yes. On 2 <sup>nd</sup> level of drypit       |
| Security:   | Locked structures.   | Other:           | Underground fuel storage tank for genset      |
| Configuration   |  | Pumping System   |   |
| Type:   | Wetpit Drypit  | Type:            | Drypit  |
| Building:   | Precast brickfaced exterior  | Manufacturer:    | Flygtt  |
| Wetwell:  | 8'x12' Concrete  | Quantity:        | 2   |
| Drywell:  | 10'x12' Concrete   | Motor:           | 50 hp – w/ VFDs                               |
| Other:  | Sump pump is provided to pump out the lower level which is always wet. | Level Control:   | Floats  |
| Electrical  |  | Controls         |   |
| Voltage:  | 480 – 400A on 2 <sup>nd</sup> level 1 story below grade                | Flow Meter:      | Yes – Original Magmeter?                      |
| Phase:  | 3Ø   | Pump Controls:   | Float levels                                  |
| Condition:  | Fair   | SCADA:           | Alarms and Flow via telephone                 |
| Comments  |  |                  |   |
| <ol style="list-style-type: none"> <li>Pumping system designed for 1,000 gpm at 115 ft TDH.</li> <li>Static head = 138 – 94.5 = 43.5 ft; Forcemain is 10" DI, 13,284 ft long, plus 370 ft of 12" DI at the WWTF. Combines with 4" Depot Road / Bradstreet forcemain and transitions to 12" at WWTF driveway. Combines with 4" Di Ferry Road / Main Street forcemain along Maple Street.</li> <li>No fall protection is provided for the wetwell. Drypit stairs are ships ladders and space along wall sections and floor crossings is tight and tough to get hands around railing.</li> <li>Wetwell is equipped with an access ladder and platform. These are used to access the wetwell influent channel which is equipped with a bar rack and sewage grinder. The grinder motor was replaced approximately 2 years ago. Operators access the wetwell area and grinder approximately 2 times per year. Any maintenance/service for the grinder is contracted out.</li> <li>A ventilation system is provided within the wetwell and the drypit for ventilation during occupancy.</li> <li>Multiple de-humidifiers are provided within the pump station to keep condensation down.</li> <li>There are electrical code violations on the main level with regards to working space around the generator and the electrical components.</li> <li>Operators noted that there is insufficient space for routine access and inspection of equipment and components as well as for routine maintenance and inspection of equipment and components.</li> </ol> |  |                  |   |