2016 Warrant Article Presentation
Department of Public Works

December 2015

Director: Chris Jacobs P.E., LLS

Deputy Director: Jennifer Hale P.E., CPESC

Reminder

What you are about to be presented with are projects and costs associated with public safety and economic growth.

"DPW's are not just first responders in emergencies; they also build long-term emergency infrastructure."

- ENR.com 8/19/15

Department of Public Works

How will improper sewer treatment or failed sewer systems effect public safety and economic growth?

- Damage and deterioration of home owner and business property, natural resources and habitats
- Health implications - Disease
- Loss of business

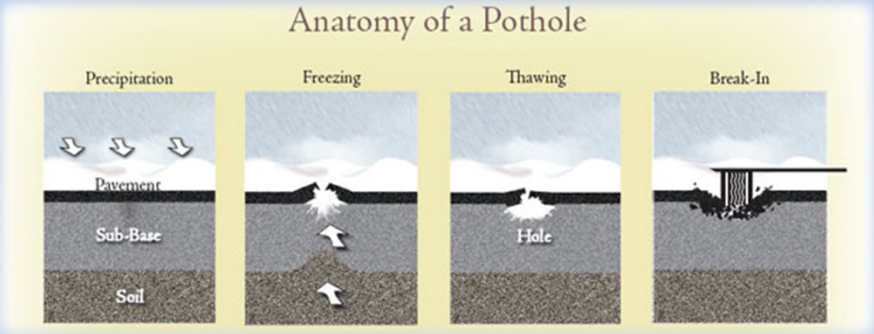
How will the delay or non-ability to collect rubbish effect public safety and economic growth?

- Aesthetics
- Rodent infestations

Department of Public Works

How will improper drainage effect public safety and economic growth?

- Failure to remove storm runoff
  - Potholes, sinkholes, pavement failure
  - Hydroplaning
  - Erosion
- Unpassable Roads = Lack of commerce and no way for emergency vehicles to pass
  - Reduce ice
  - Snow removal



Goal of 2016 Warrant Articles

Secure the funding to implement operations that are required by Federal and State regulations as well as to facilitate necessary and required improvements for the ongoing function, reliability and sustainability of the Town of Hampton's infrastructure, assets and DPW services.

- Wastewater Treatment Plant and Pump Stations
- Highway Division
- Sewer and Drainage Division
- Solid Waste/Transfer Station
- Vehicles

2016 Warrant Articles
Highway Division

Highway Division

2016 Warrant Article: Seawall Bi-Centennial Park Replacement

- Due to excessive damage which occurred last winter, portions of wall are missing
- Additional geotechnical investigation is necessary to determine foundation condition and wall stability
- Based on previous study, wall section is not consistent throughout length of the wall
- Cracks were observed within the internal core as well as the external surface

Highway Division

2016 Warrant Article: Seawall Bi-Centennial Park Replacement

Why is the repair/replacement of this wall important?

- Prevents costal erosion and other damage due to wave action and storm surges
- Wall section is +/- 300’ long and includes structural deficiencies that continue to increase over time
- Safety - Area behind the wall includes Public area including Bicentennial Park, boat lunch, sandy beach and town parking lot.
- The existing height of the wall is below the adjacent State Wall and is not designed for rise in sea-level

Highway Division

2016 Warrant Article: Seawall Bi-Centennial Park Replacement (Preliminary investigation/design)
Total Cost: $85,000

Notes:

- Funding option
  - Individual Warrant Article
- At this time, to determine the extent in which the wall either needs repair or replacement, it is recommended that this money be used for survey, additional geotechnical investigation, preliminary design and to make a determination as to the overall scope of the project. It would also include a budget for temporary repairs as needed until the preliminary design is completed

Highway Division

2016 Warrant Article: Road Improvement Capital Reserve Fund

What is the purpose of this request?

- To raise money (through taxes that are collected and distributed into the General Fund) and authorize them to be expended by placement into the Road Improvement Capital Reserve Fund for current and future maintenance and improvement to the roadways and associated sidewalks within the Town of Hampton.
- Current Balance of the
  Road Improvement Capital Reserve Fund
  +/- $633,000 (December 31, 2014)

Highway Division

2016 Warrant Article: Road Improvement Capital Reserve Fund
Total Cost: $300,000

Notes:

- Funding option
  - Individual Warrant Article
- Funds are typically saved from year to year with the intent to be applied to significant projected projects costs- long term capital improvements

Highway Division

2016 Warrant Article: Highway Block Grant

- For improvements to specific streets and sidewalks consisting of pavement reclamation, paving overlays, adjustment to structures, paving repairs, curbing and replacement to drainage to be offset by the State Highway Block Grant

- Funds are applied to specific projects as identified by the Department of Public Works and approved by the Board of Selectman

Highway Division

2016 Warrant Article: Highway Block Grant

Anticipated future roadway improvements for FY2016 (Actual Roadways to be determined prior to paving season)

- Landing Road
- Old Stage Road
- Acorn Road
- Watson's Lane
- Richard Street

View of Landing Road looking south

View of Richard Street looking south

Highway Division

2016 Warrant Article: Highway Block Grant
Total Cost: $643,228*

Notes:

- Funding option
  - Individual Warrant Article
- Offset by State Highway Grant Estimated to be $299,804 (*$343,424 tax impact)

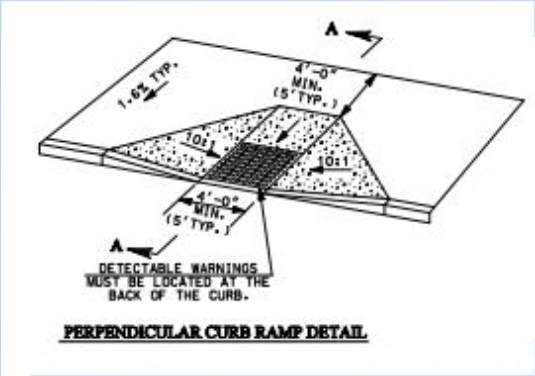
Highway Division

2016 Warrant Article: Sidewalks

What would this money be used for?

- Funds are applied to specific projects as identified by the Department of Public Works and approved by the Board of Selectman

- Funds would be used for maintenance, repair, re-construction, sidewalk repairs and ADA compliance in addition to funding approved in the Operation Budget to implement previous year and current year improvements as identified in the Sidewalk Management Program



Highway Division

2016 Warrant Article: Sidewalks
Total Cost: $45,650

Notes:

- Funding option
  - Individual Warrant Article
- Funds are non-lapsing or by March 2017 whichever is sooner

2016 Warrant Articles
Sewer and Drain Division

Sewer and Drain Division

2016 Warrant Article: High Street Culvert at Meadow Pond and Drainage Study

What would this money be used for?

- Funds would be used to replace the outfall culvert located below the Grist Mill Dam on High Street
- The culvert connects Mill Pond and Meadow Pond
- To address the area as a whole and obtain Federal and State permits, a drainage study is required. This will require the services of an outside engineering consultant.
- This article will amend the approved article from 2014 by removing the contingency and provide the additional funding necessary to complete the work

Sewer and Drain Division

2016 Warrant Article: High Street Culvert at Meadow Pond and Drainage Study
Total Cost: $147,500*

Notes:

- Funding option
  - Individual Warrant Article
- $235,000 has already been raised to complete this project
- The original $147,500 that was to be provided by the state is no longer available
- $60,500 to come from the Undesignated General Fund Balance (*$87,000 tax impact)

2016 Warrant Articles
Vehicles

Vehicles

2016 Warrant Article : Vehicle Replacement

What Vehicles will be replaced?

- Unit 36 – 2001 Chevy 1-Ton with plow and wing
- Unit 45 – 1988 Mack 6 Wheel Dump Truck with plow and wing
- Unit 42 – 1990 Mack 6 Wheel Dump Truck with plow and wing

Vehicles

Replacement of Unit 36 – 2001 Chevy one ton highway maintenance and snow plowing truck with plow and wing

What is wrong with the existing truck?

- Last three years of Maintenance
  = +/-$3,200
- Electrical issues, repairs to steering column, engine compartment and charging system
- Currently "sidelined" due to maintenance needs and unable to pass inspection
- Passenger side floor has a hole
- Rocker panels need to be replaced
- Four wheel drive not functioning

Vehicles

Replacement of Unit 36 – 2001 Chevy one ton highway maintenance and snow plowing truck with plow and wing

2001 Chevy 1 Ton with plow and wing used in winter for plowing and daily for road patching, paving, move election booths and other highway tasks
Current mileage 68,000

Why replace the vehicle instead of repairing it?

- This machinery is used daily as well as an integral part of the snow removal operations
- There is significant undercarriage corrosion and therefore not reliable for plowing
- Maintenance costs will continue to increase

Vehicles

Replacement of Unit 42 – 1990 Mack 6 Wheel Dump Truck with plow and wing

What is wrong with the existing truck?

- Truck is needed to salt and plow roads on arterial streets – first truck out of yard
- Last three years of Maintenance

  = +/-$8,000
- Tie Rods, and wheels have been replaced and transmission work in last year
- Significant Rust

Vehicles

Replacement of Unit 45 – 1988 Mack 6 Wheel Dump Truck with plow and wing

What is wrong with the existing truck?

- Oldest truck in the fleet
- Truck is needed to salt and plow roads on arterial streets – first truck out of yard
- Last three years of Maintenance

  = +/-$5,900
- Wheels, rear leaf springs, blower and brakes have been replaced
- Significant Rust

Vehicles

Replacement of Units 42 & 45

#42- 1990 Mack 6 Wheel dump truck with plow and wing used as front line in winter for plowing and sanding
Current mileage 87,000

#45- 1988 Mack 6 Wheel dump truck with plow and wing used as front line in winter for plowing and sanding
Current mileage 69,000

Why replace the vehicle instead of repairing it?

- The vehicles are 25/27 years old
- Units are “used and tired” and not as reliable for the intense use of snow plowing
- Maintenance costs will continue to increase, parts harder to find

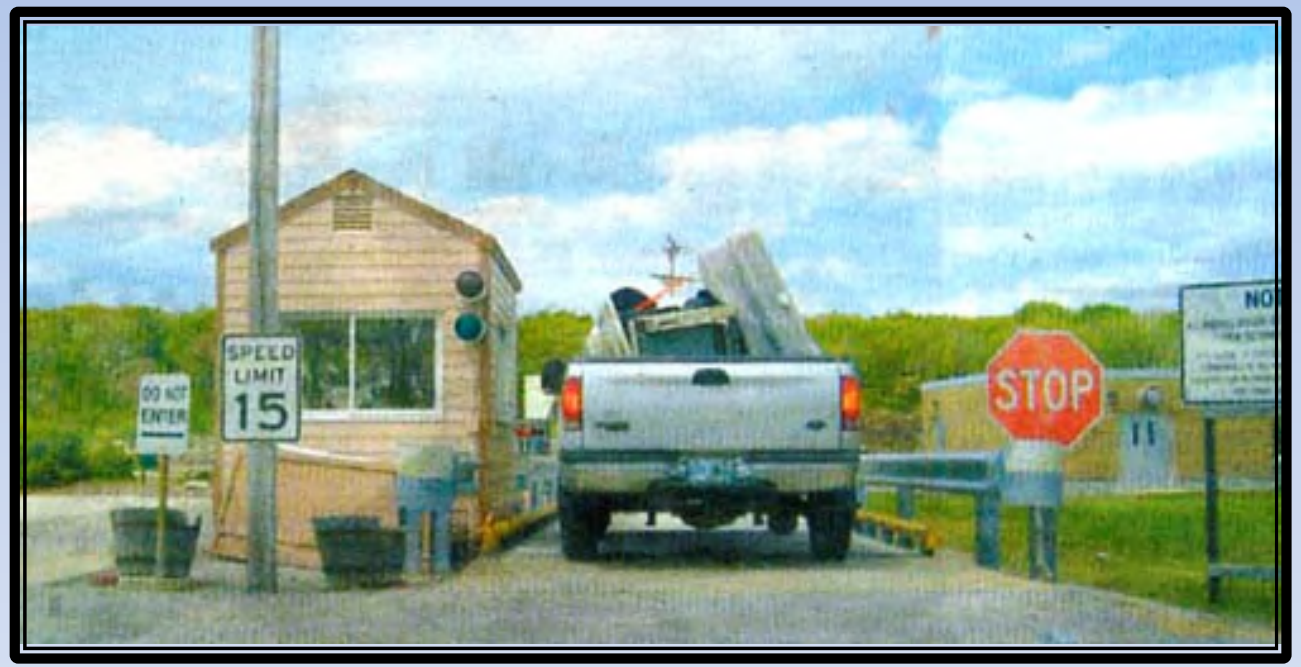
Vehicles

2016 Warrant Article: Replacement of one 1-ton truck with dump body, plow and wing and two 35,000 pound Gross Vehicle Weight Dump Trucks
Total Cost: $353,000

Notes:

- Funding option
  - Individual Warrant Article
- Some trade in value

2016 Warrant Articles
Solid Waste Division



Solid Waste Division

2016 Warrant Article: Household Hazardous Waste Collection

- Hampton Falls and New Castle would be invited to participate
- Would include an awareness and educational program
- Town would contract with a Household Hazardous Waste Contractor
- Would apply for Household Hazardous Waste Grant from NHDES

Vehicles

2016 Warrant Article: Household Hazardous Waste Collection
Total Cost: $20,000

Notes:

- Funding option
  - Individual Warrant Article

2016 Warrant Articles
Wastewater Treatment Plant

Wastewater Treatment Plant and Pump Stations

Warrant Article: Sewer Bond for the construction of necessary upgrades to the Waste Water Treatment Plant

What is included in this Sewer Bond?

- Installation of a Lakeside Unit Package Raptor Septage Acceptance Plant (or approved equal) and new Grit box.
- New location for wash down area and connection of wash down system to Septage Receiving Station for proper treatment
- Installation of new pumps, drives and pressure reducing system for plant recycle water and the relocation of the suction intake pipe
- Emergency Generator for Plant Aeration System

Hampton WWTP

Existing Septage Receiving Station

Wastewater Treatment Plant and Pump Stations

Septic Receiving Station

What is a septic receiving station?

- Part of the WWTP process
- The wastewater plant treated a total of 1,483,500 gallons of septage in 2014
- Receives municipal, industrial and septic tank septage that contains debris and inorganic solids such as hair, plastics, grease and hygienic materials
- Debris impacts equipment
  - clogging pumps and valves
  - decreasing the effectiveness of aeration, dewatering and filtering equipment

Wastewater Treatment Plant and Pump Stations

Septic Receiving Station

How does it work?

- Haulers dump into trough area where large debris is captured on the screen
- Materials collected on the screen and within the trough are hand raked and disposed of in the adjacent Grit box
- Septage waste enters the adjacent holding/ settling tank
- Plant recycle water runs continuously into the holding tank to dilute the waste
- The diluted waste then flows to the headworks of the treatment plan as influent

Wastewater Treatment Plant and Pump Stations

Septic Receiving Station

Why does the receiving station need to be improved?

- Sand and debris are not being reduced appropriately and negatively impacting down stream equipment and increasing treatment needs
- The plant pumps and treats plant water (3.1 million gallons) that is used for dilution. Not efficient
- Continuous water system is operated by inefficient pumps and often clog due to the location of the intake pipe
- Grit box is 10+ years old and severely corroded due to weather exposure (Regulatory requirements require it to be water tight)

Raptor

Existing Grit Box

Hampton WWTP

Existing Septage Receiving Station

Existing Hydrant for Wash out/ Wash Down

Wastewater Treatment Plant and Pump Stations

Wash Down Area

Why does the town need a wash down area?

- Current internal space is not sufficient for daily operations and external location is not a designed solution
- Maintenance of vehicles and equipment includes wash down to remove salts, debris, oils, etc.
- A new area would be designed as a Best Management Practice (BMP) meeting regulatory requirements to handle oils, greases and grit
- New wash down area would send runoff to the new septage receiving station

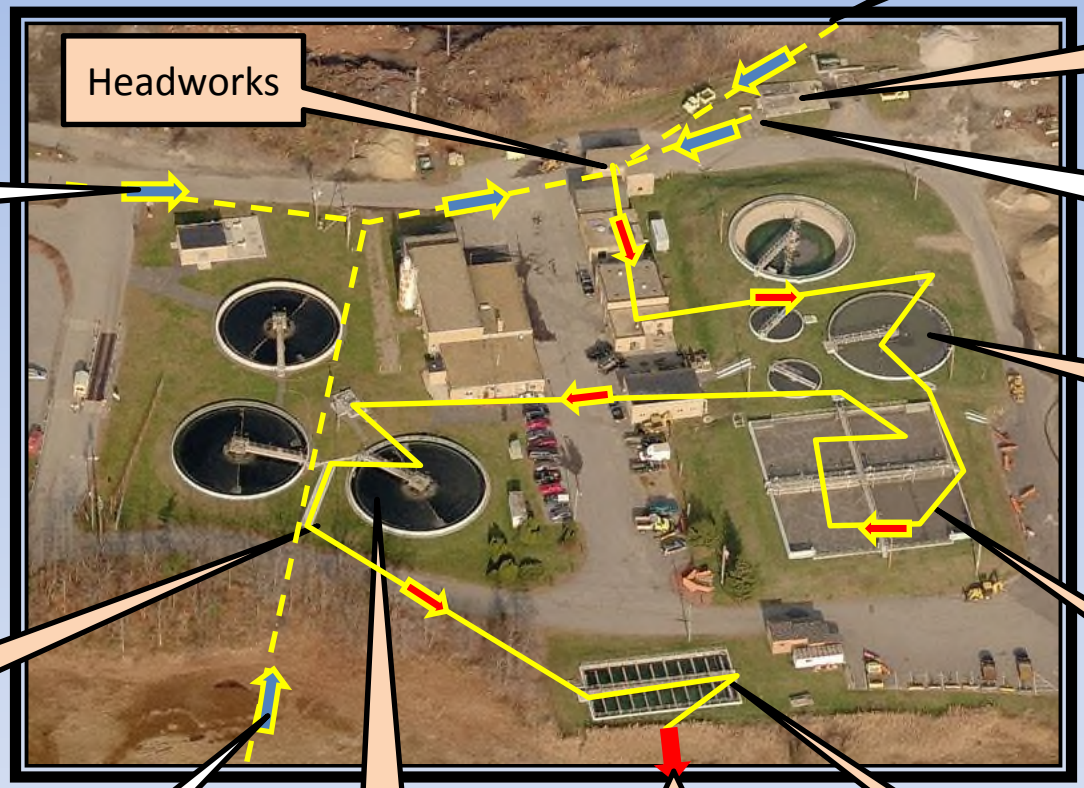
Hampton WWTP

Proposed Septage Receiving Station and Wash Down Area

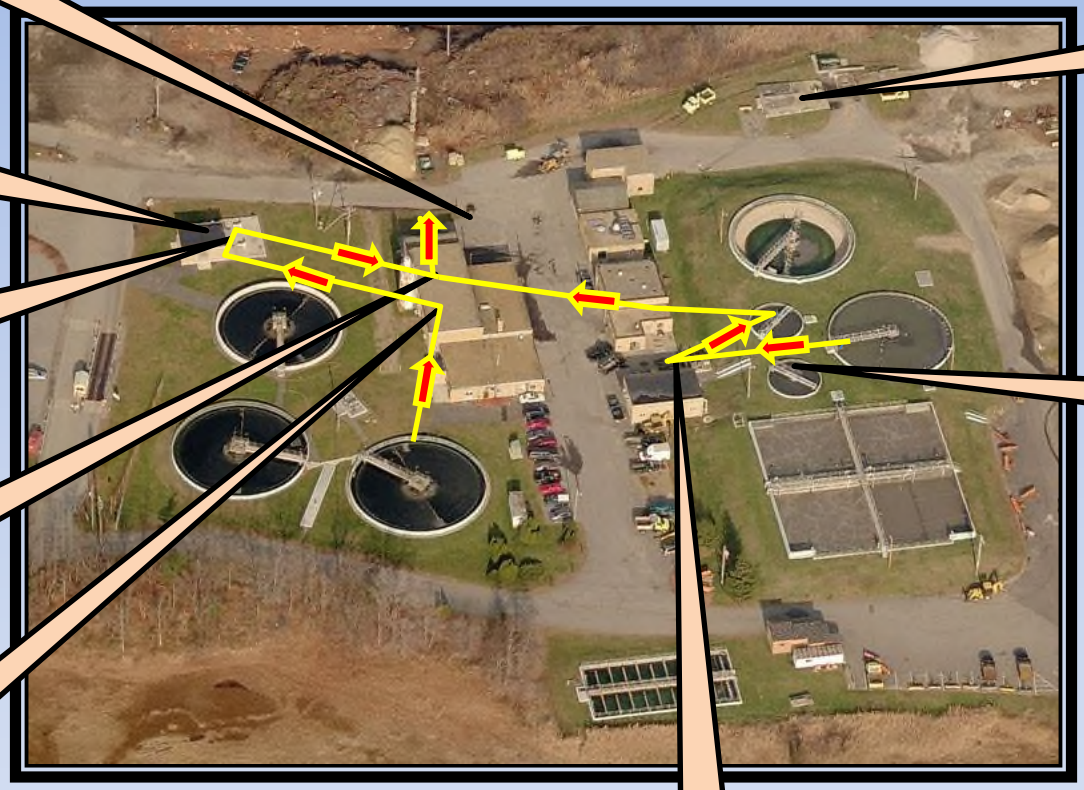
New Wash Down Area would include:

- Permitting and final design
- Construction and installation of metal building with roll up doors
- Waterproofing and venting
- Slab and foundation design
- New water, sewer, electric, drainage and gas services
- Grit separator
- Scissor Lift
- Pressure washing system
- Washing Platform
- Direct outlet connection to the Septic Receiving Station

Hampton WWTP

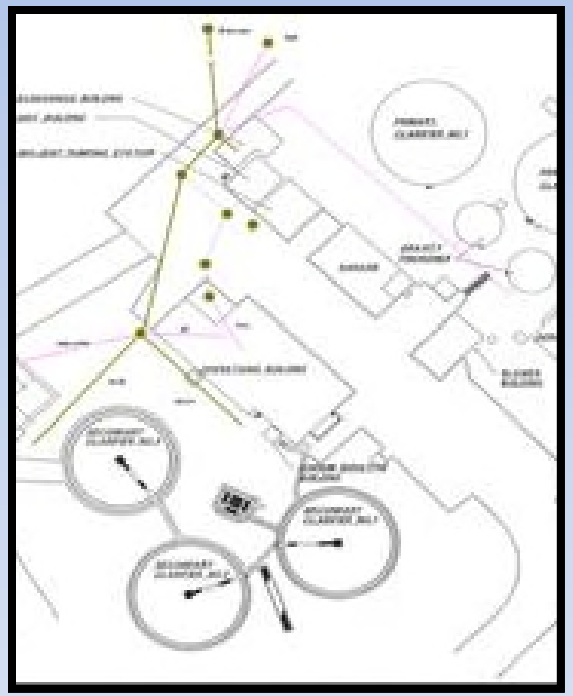


Hampton WWTP



Wastewater Treatment Plan and Pump Stations

Plant Improvements - Internal Recycling Yard Piping



- Currently flow enters before the headworks building skewing the true influent samples and flow readings (DES identified this as a concern when issuing the Administrative Order)
- Project will move piping, install influent flow meter and the associated programing
- Northeast Interceptor, Septage Station, Church Street Station and West End flows will all be able to be sampled and monitored as they enter the headworks building to begin the treatment process.

Wastewater Treatment Plan and Pump Stations

Plant Improvements – Valve Pit Safety Project

- Valves control the flow from the Thickeners and the Primary Clarifier Drains
- Existing valves are manual and require confined space entry
- Project will include installation of automated valves, associated wiring and a new control box outside of the valve pit
- New valves would be programmed to the SCADA system
- Total of 6 new valves proposed

Piping and Existing Valves in Valve Pit

Hampton WWTP

Aeration Tanks with **NO** Emergency Power

Wastewater Treatment Plant and Pump Stations

Aeration Blower Generator Connection Project

Why is this project important?

- Blowers for the aeration system are a key component to the WWTP process – this is where the Biological reactions occur
- Three existing blowers
- Plant requires a minimum of 2 to keep up summer influent demands
- Blowers become less efficient in summer heat (potential to over heat)

Existing blowers that are NOT connected to the emergency generator at the WWTP

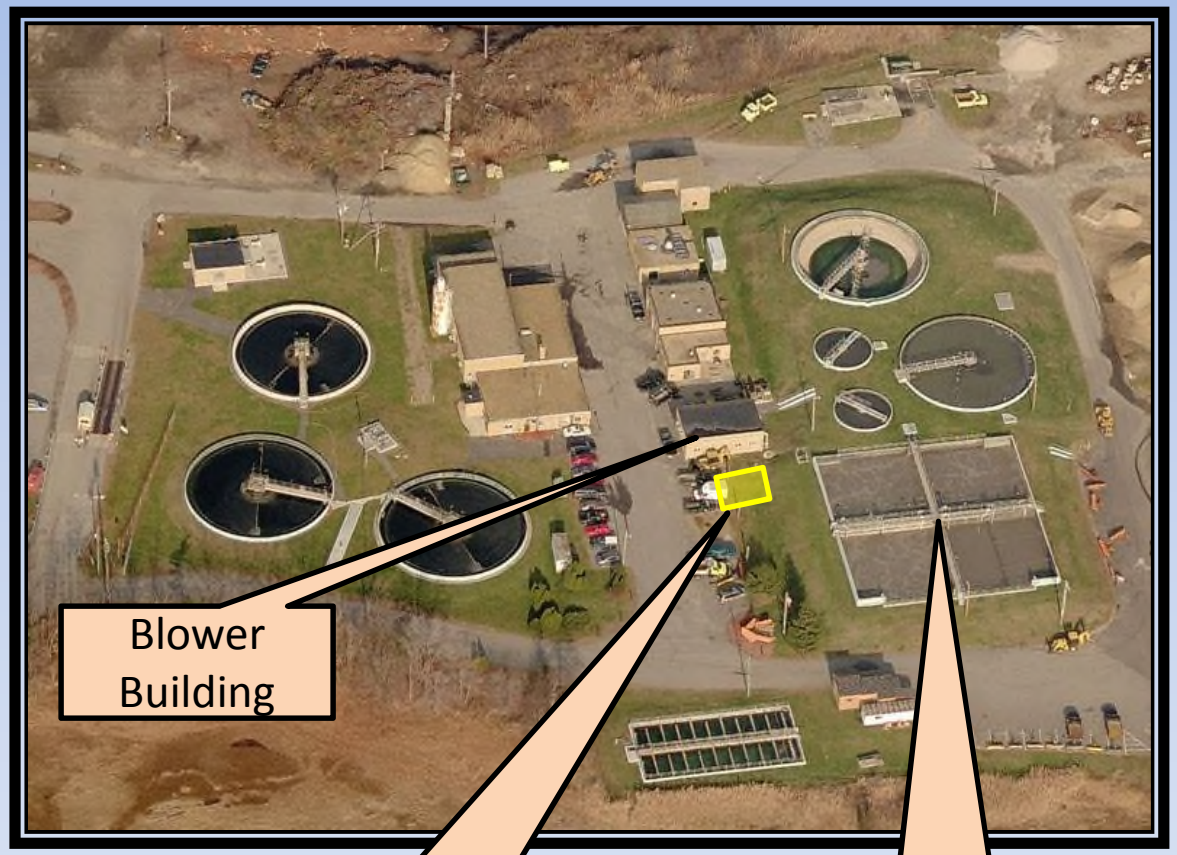
Wastewater Treatment Plant and Pump Stations

Aeration Blower Generator Connection Project

- The existing generator although operating below capacity is not large enough to support all the blowers
- A new generator is proposed for the blowers (600Kw)
- Available capacity of existing generator - currently operating at 30% - can connect plant water pumps, waste activated pumps, sludge box motors located in the main building which are currently not connected

Aeration Tank

Hampton WWTP



With NO Emergency Power Connection:

- We would not be able to provide secondary treatment and meet permit requirements at time of failure
- There is potential need to restrict all (including businesses) water/sewer use during outages if we risk discharge violation
- Although an emergency plan can be implemented there is significant cost to mobilize and the availability of an emergency generator is not guaranteed.

Wastewater Treatment Plant and Pump Stations

2016 Warrant Article: Sewer Bond
Total Cost: $2,000,000

Notes:

- Funding options
  - Individual Warrant Articles
  - SRF funding with loan forgiveness (up to 20%) as indicated on Draft Intended Use Plan
  - Homeland Security Emergency Management Performance Grant Program
- Costs includes design, engineering and construction