



Town of

*Orleans*  
Massachusetts

# **Downtown Area Sewer Collection System, Pumping Stations, Wastewater Treatment Facility and Effluent Disposal**

## **Board of Selectman Project Status**

### **December 12, 2018**

# Collection System Summary

- ❖ **30,800 LF of Gravity Sewers (8-inch to 12-inch)**
- ❖ **2,000 LF of Low Pressure Sewers (1.5-inch to 2.5-inch)**
- ❖ **9,600 LF of Force Mains (6-inch to 8-inch)**
- ❖ **3 Pumping Stations**
- ❖ **Connections**
  - 1,090 Users
  - 57 Grinder Pumps (Privately Owned and Maintained)





Town of

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Massachusetts

# Final Design of Downtown Area Sewer Collection System Treatment Facility and Effluent Disposal Site

## Board of Selectman Project Status

### Collection System



Town of Orleans, MA  
 Water Quality and Wastewater Planning Services  
**Downtown Service Area  
 Proposed Collection System Layout**

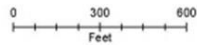
**Legend**

-  Proposed Gravity Sewer
-  Existing Gravity Sewer
-  PS Forcemain
-  WWTF Effluent Forcemain
-  Properties proposed to be served by LPS
-  Proposed LPS

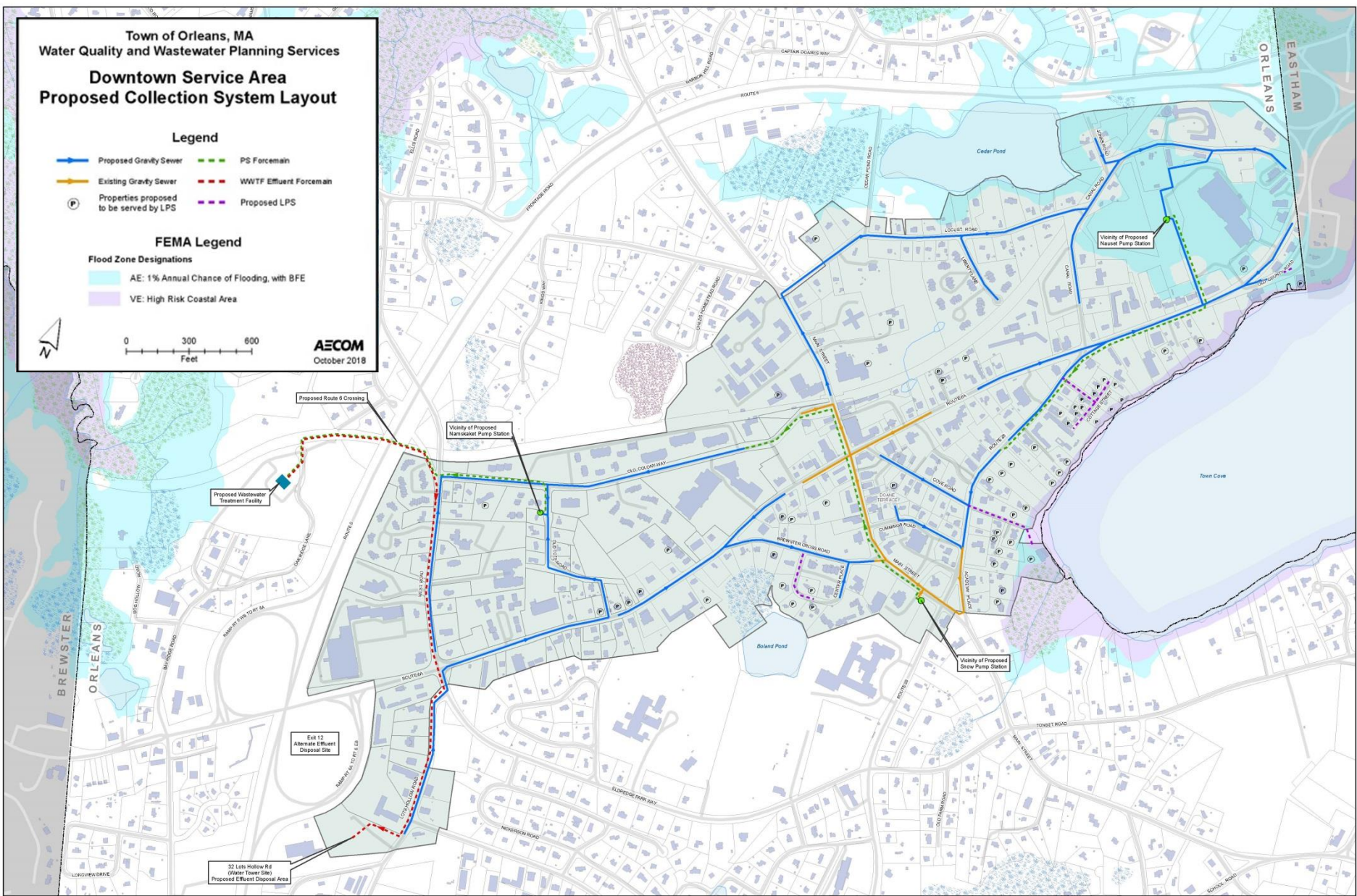
**FEMA Legend**

**Flood Zone Designations**

-  AE: 1% Annual Chance of Flooding, with BFE
-  VE: High Risk Coastal Area



**AECOM**  
 October 2018



# Collection System (cont.)

## Status

### Completed Activities

- ❖ Survey - Topographic
  - Water System Updates
  - Wetlands Delineation
  - Route 6 Crossing
- ❖ Workshops / Meetings
  - Layout and Configuration
  - Site Visits
- ❖ Contract Documents – 60 Percent
  - Specifications
  - Drawings

### Ongoing Activities

- ❖ Subsurface Evaluation
- ❖ GIS Mapping
- ❖ Permitting
  - MassDOT
  - Environmental
- ❖ Utility Coordination
- ❖ Roadway Rehabilitation





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# Final Design of Downtown Area Sewer Collection System Treatment Facility and Effluent Disposal Site

## Board of Selectman Project Status

### Pumping Stations

# Pumping Stations Status

## Completed Activities

- ❖ Survey - Topographic
  - 2 out of 3 Sites
  - Compilation Plans and Site Evaluations
- ❖ Workshops / Meetings
  - Layout, Configuration and Equipment
  - Site Visits
  - Snow Library Trustees
- ❖ Contract Documents – 60 Percent
  - Specifications
  - Drawings

## Ongoing Activities

- ❖ Radio Path Survey
- ❖ Subsurface Evaluation
- ❖ Snow Library Trustees
- ❖ Survey at Nauset PS - Stop & Shop



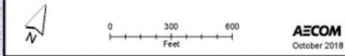
Town of Orleans, MA  
Water Quality and Wastewater Planning Services  
**Downtown Service Area**  
Proposed Collection System Layout

**Legend**

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**FEMA Legend**

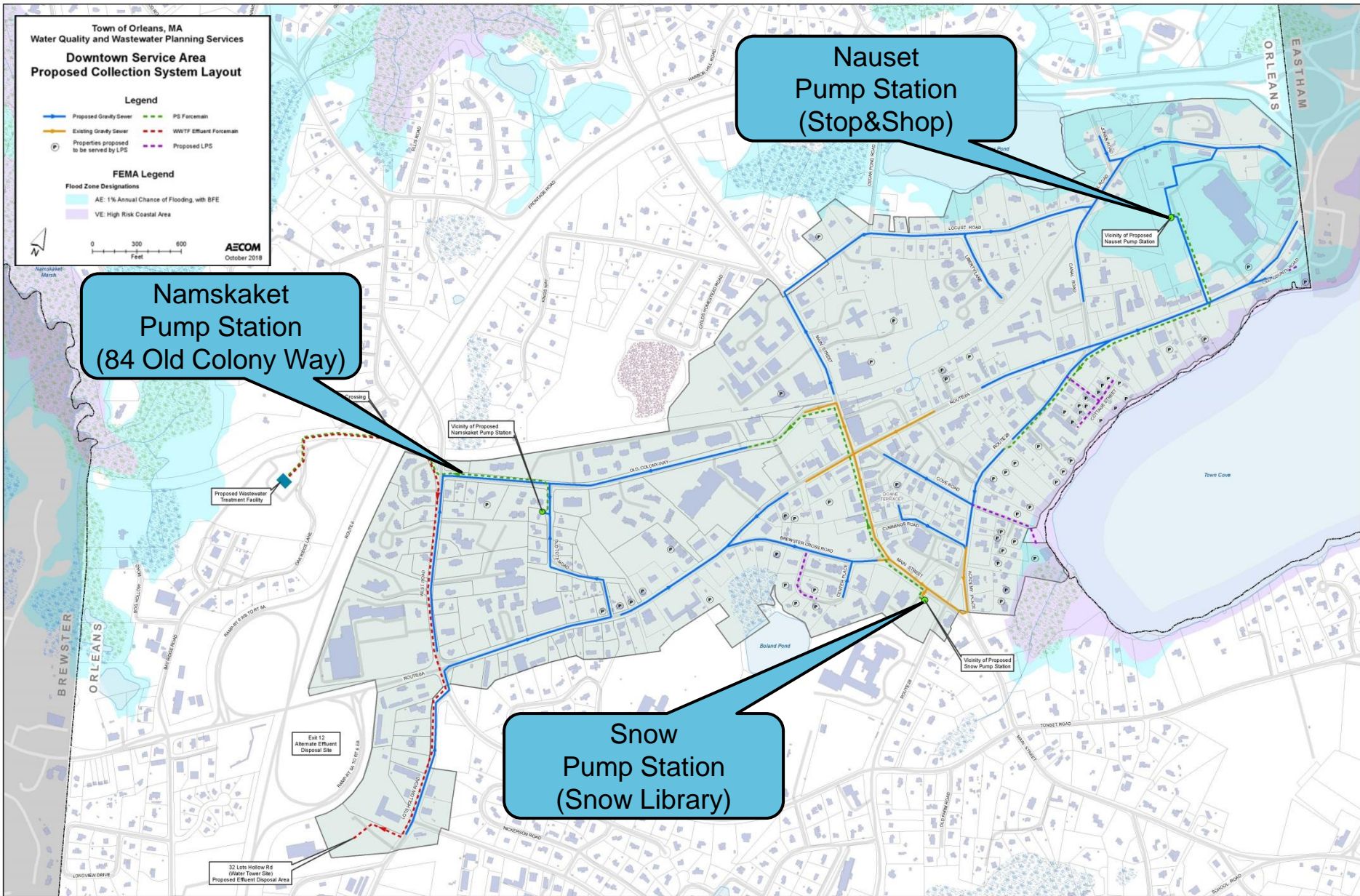
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**Namskaket  
Pump Station  
(84 Old Colony Way)**

**Nauset  
Pump Station  
(Stop&Shop)**

**Snow  
Pump Station  
(Snow Library)**



IR	DATE	DESCRIPTION

Designed By:	M. DONOGHUE
Drawn By:	M. CURRAN
Dept Check:	T. PARECE
Proj Check:	M. DONOGHUE
Date:	OCTOBER 2018
Scale:	AS NOTED





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# Final Design of Downtown Area Sewer Collection System Treatment Facility and Effluent Disposal Site

## Board of Selectman Project Status

### Wastewater Treatment Facility

# Wastewater Treatment Facility and Effluent Disposal Summary

## Wastewater Treatment Facility

- ❖ 29 Overland Way
- ❖ Wastewater Flow
  - Phase 1: 245,400 gpd (ADF)
  - Phase 2: 104,600 gpd (ADF)
  - Combined: 350,000 gpd (ADF)
- ❖ Key Components
  - Sequence Batch Reactors (SBR)
  - Effluent Filters
  - Ultraviolet Disinfection
  - Septage Receiving and Processing

## Effluent Disposal

- ❖ 32 Lots Hollow Road
- ❖ Key Components
  - Distribution Chamber
  - 5 Wick Wells



# Wastewater Treatment Facility (cont.)

## Status

### Completed Activities

- ❖ Survey
  - Topographic
    - 29 Overland Way
    - 32 Lots Hollow
  - Drone
- ❖ Workshops
  - OPM Kick-Off
  - Mini-Value Engineering
  - Cape Light Compact
  - Building Layout
  - Process Configuration
  - Equipment
- ❖ Contract Documents – 60 Percent
  - Specifications – Front End

### Ongoing Activities

- ❖ Equipment Preselection
  - Septage Receiving
  - Sequencing Batch Reactor
  - Effluent Filter
  - Sludge Thickener
- ❖ Radio Path Survey
- ❖ Subsurface Evaluation
- ❖ Old Kings Highway
- ❖ Cape Cod Commission



Town of Orleans, MA  
 Water Quality and Wastewater Planning Services  
**Downtown Service Area  
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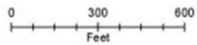
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**FEMA Legend**

**Flood Zone Designations**

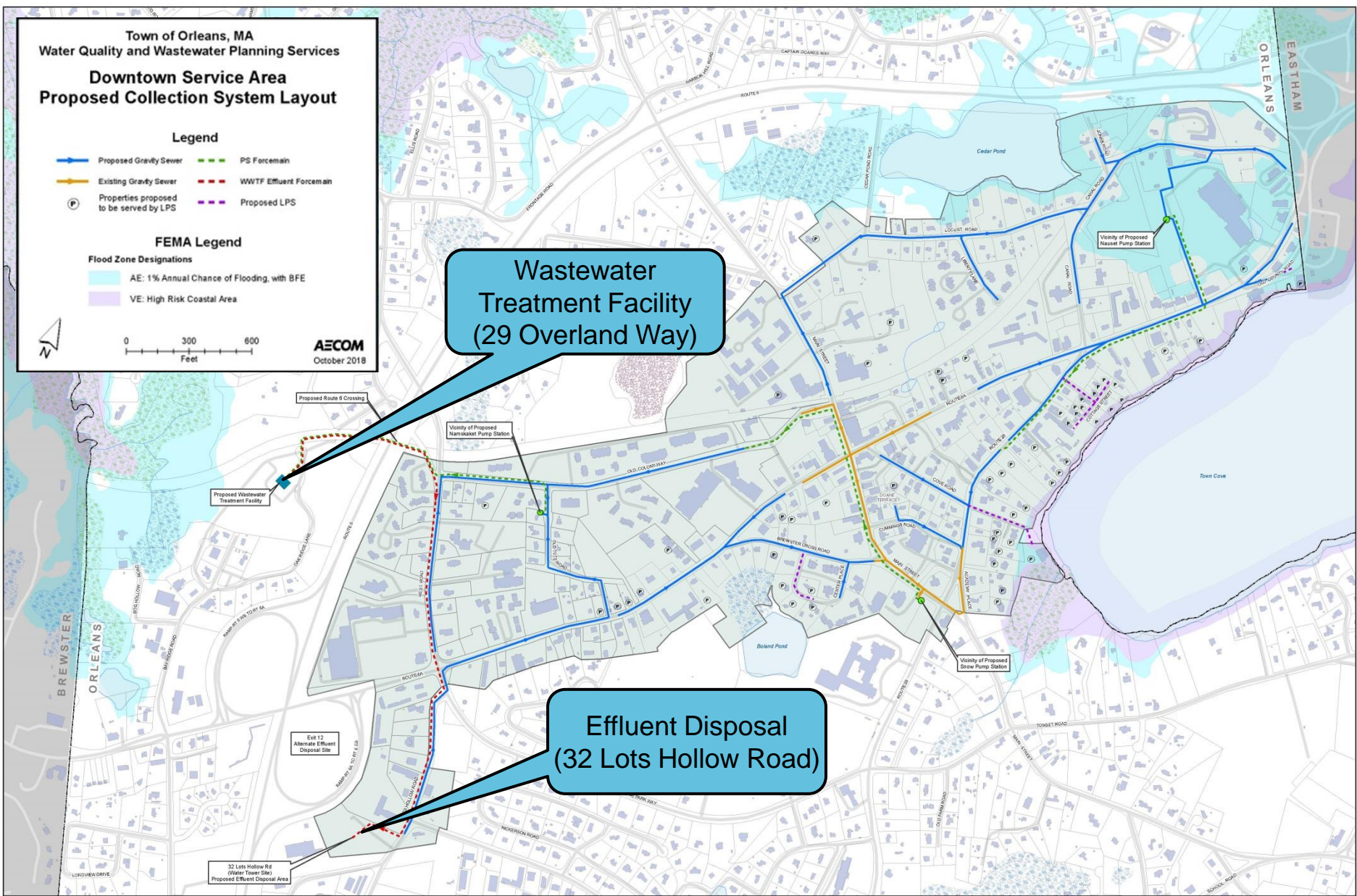
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**AECOM**  
 October 2018

**Wastewater  
 Treatment Facility  
 (29 Overland Way)**

**Effluent Disposal  
 (32 Lots Hollow Road)**





# Conceptual Facility Layout







Town of

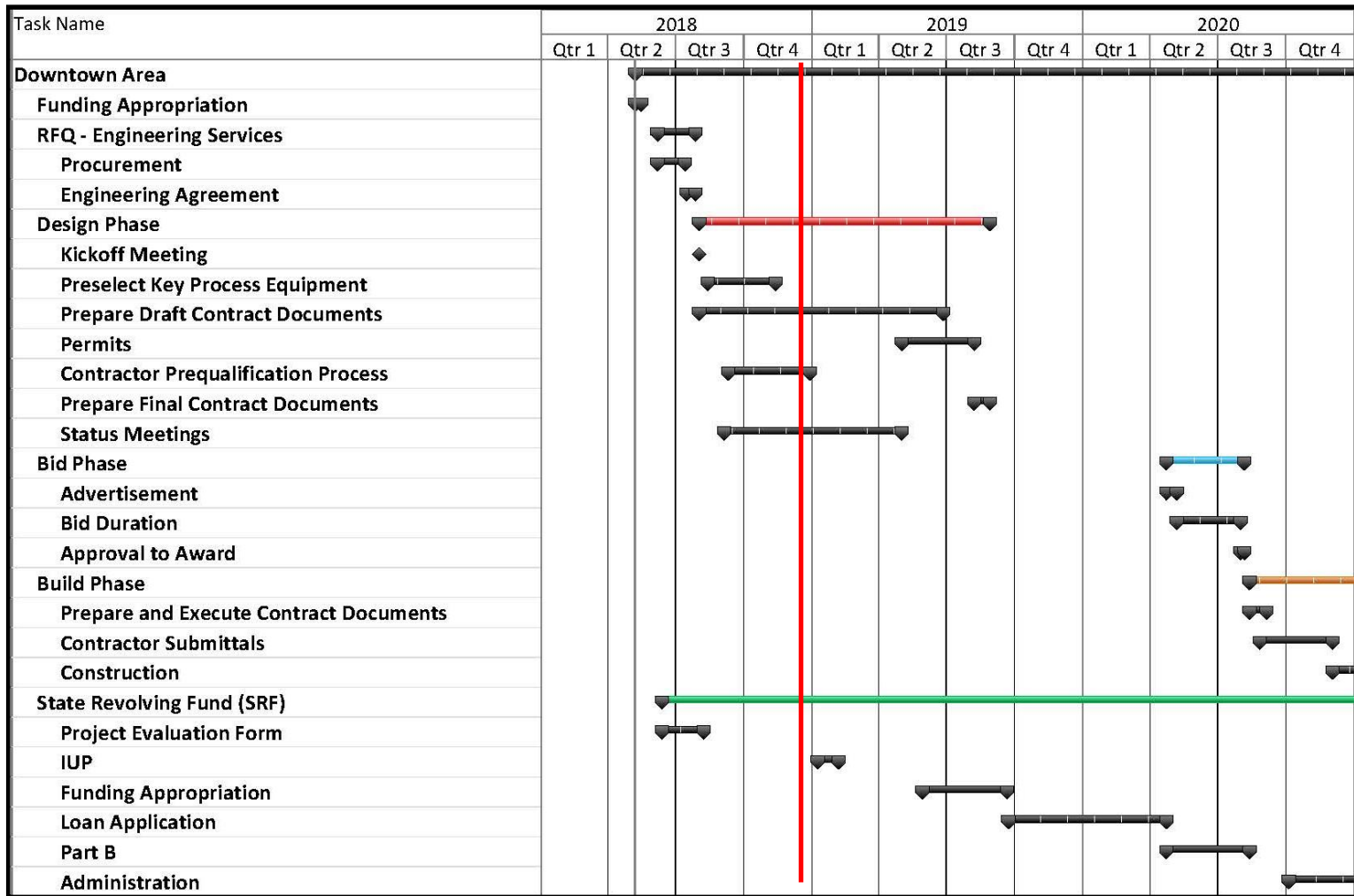
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# Final Design of Downtown Area Sewer Collection System Treatment Facility and Effluent Disposal Site

## Board of Selectman Project Status

### Progress Schedule

# Progress Schedule Status



# Critical Path Schedule Items

Item		Schedule Status
Permits – MADEP Hydrogeo & MEPA NPC	✓	On Schedule
SRF Application	✓	On Schedule
Collection System Design		
60% Sewer System Design	✓	On Schedule
60% Pump Station Design	✓	Slight Lag
Wastewater Treatment Facility		
Equipment Pre-Procurement	✓	Slight Lag
60% Design Development	✓	Slight Lag
Contractor Prequalification	✓	On Schedule
Opinion of Probable Construction Cost	✓	On Schedule





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Thank You