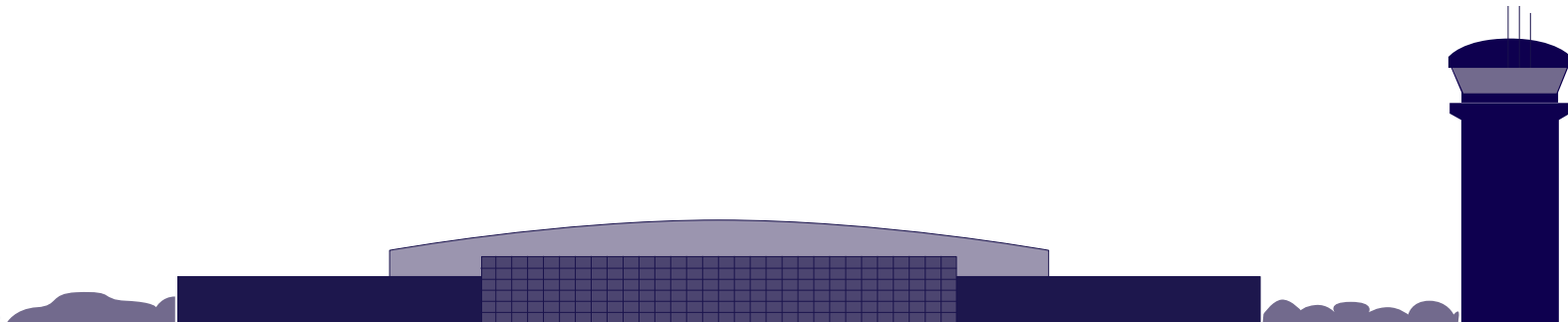


# BARNSTABLE MUNICIPAL AIRPORT PUBLIC INVOLVEMENT PLAN



# Today's Discussion...

- Environmental Management at the Airport
- Management of Fire Fighting Foam
- Overview of PFAS and 1,4-dioxane Investigations
- Protection and Management of Drinking Water for the Hyannis Water District
- Next Steps in the Public Involvement Process



# Airport History

- Created in the 1930's
- Used by the U.S. Navy during WWII
- Conveyed to Town of Barnstable in 1948 for use as an airport
- Airport Manages 645 acres, 140 acres of which are paved for runways, taxiways, aprons, parking lots, rooftops and roads as an Enterprise Fund of the Town of Barnstable





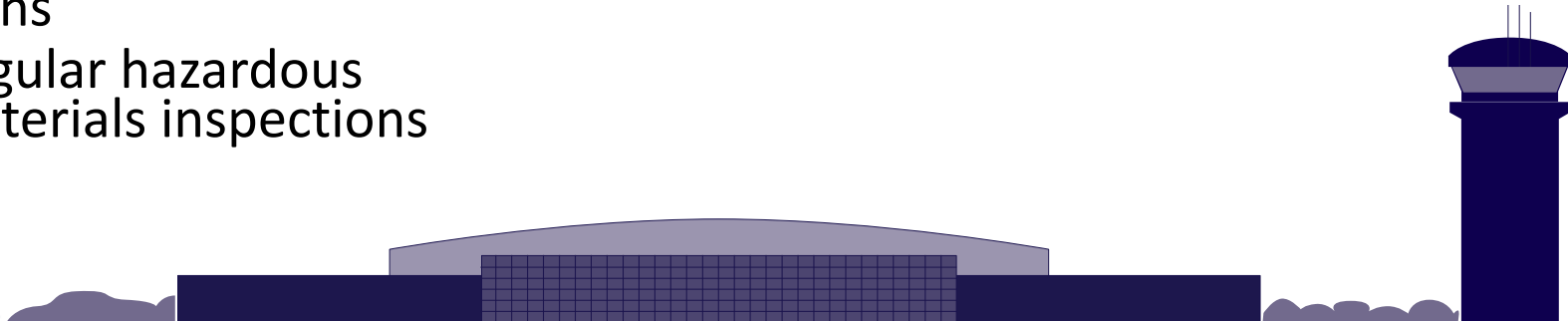
# Environmental Improvements at the Airport

- A number of environmental enhancements were recently made in 2011 with the creation of the new terminal and access road including:
  - Green infrastructure and stormwater treatment facilities for road and parking areas.
  - Treatment of stormwater that drains to Upper Gate and Lewis ponds and on the North Ramp using Vortech Stormwater Treatment Systems - a shallow treatment unit that traps and retains trash, debris, and sediment from stormwater runoff.



# Environmental Improvements at the Airport

- 7 megawatts Solar Array to reduce our “carbon footprint” and lower energy costs for the Airport’s annual electricity needs
- Good Housekeeping Practices:
  - No pesticide use
  - No road salt on runways
  - No chemicals used to treat runways/taxiways in snow/ice conditions
  - Spill prevention and stormwater management plans
  - Regular hazardous materials inspections



# Environmental Improvements at the Airport

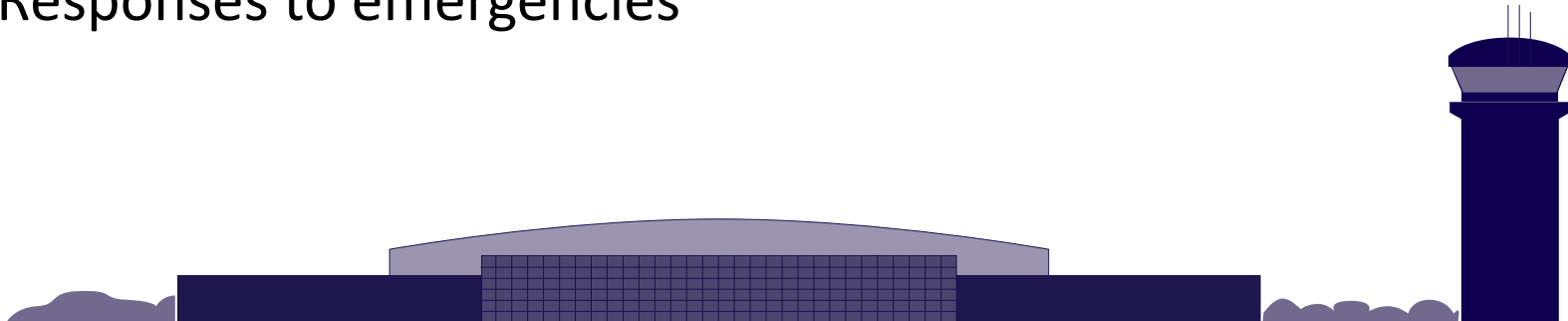
Environmental enhancements made in 2015 including:

- ➔ Removal of a 20,000 gallon underground JetA fuel tank
  - ➔ Replaced with a new aboveground **Fuel Farm with Secondary Containment and Monitoring**
- ➔ Removal of a 250 gallon underground diesel tank
  - ➔ Replaced with **Natural Gas-Powered Airport Emergency Generator**
- ➔ Installation of an **Aircraft Washing and Deicing Pad** that drains to the Barnstable WW Treatment Plant



# Use of Aircraft Fire Fighting Foam (AFFF) at the Airport

- ➔ Aqueous Film Forming Foam (AFFF) which has PFAS - Use for emergency responses
- ➔ Required by the FAA.
- ➔ No other options allowed by the FAA exist at present
- ➔ Historically, AFFF used during:
  - Triannual training exercises
  - Annual testing of fire fighting equipment as required by the FAA
  - Responses to emergencies





# Use of Aircraft Fire Fighting Foam (AFFF) at the Airport

- ➔ Since 2015 no foam used for exercises or testing
- ➔ Foam used in 2016 to respond to aircraft accident
  - Parking lot/flammable liquids/fire/foam blanket
  - 10 gallons of foam applied at the site of the accident
  - All captured in an enclosed catch basin, vacuumed out and removed from site.





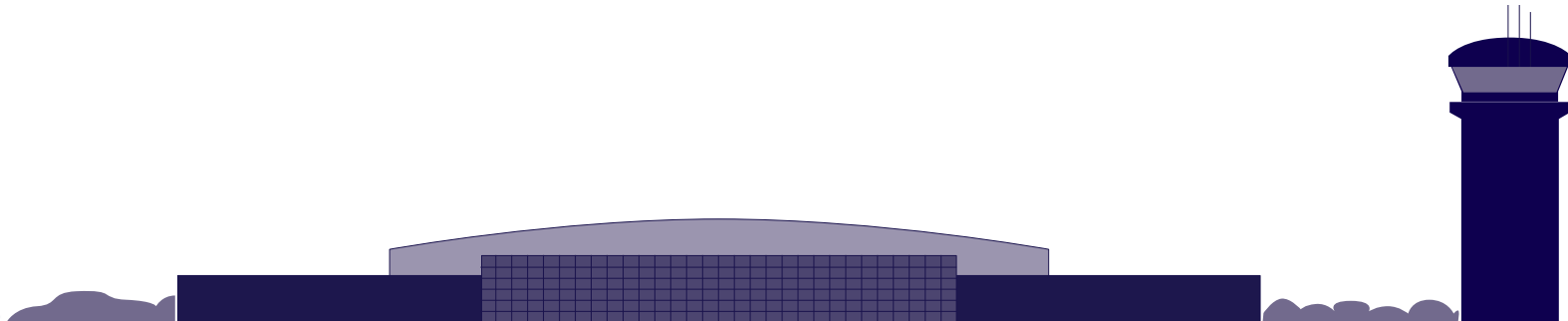
# Ecologic Cart

- ➔ First airport in Massachusetts to purchase the ecologic unit
- ➔ Unit purchased before receipt of FAA approvals for use
- ➔ Eliminates the need for the airport to use and deploy foam during annual FAA required fire fighting equipment testing

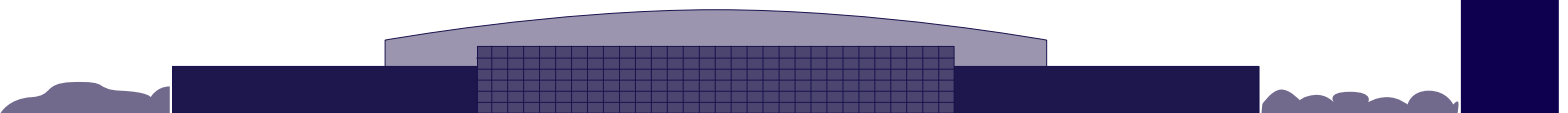


# Ongoing PFAS and 1,4-Dioxane Investigations

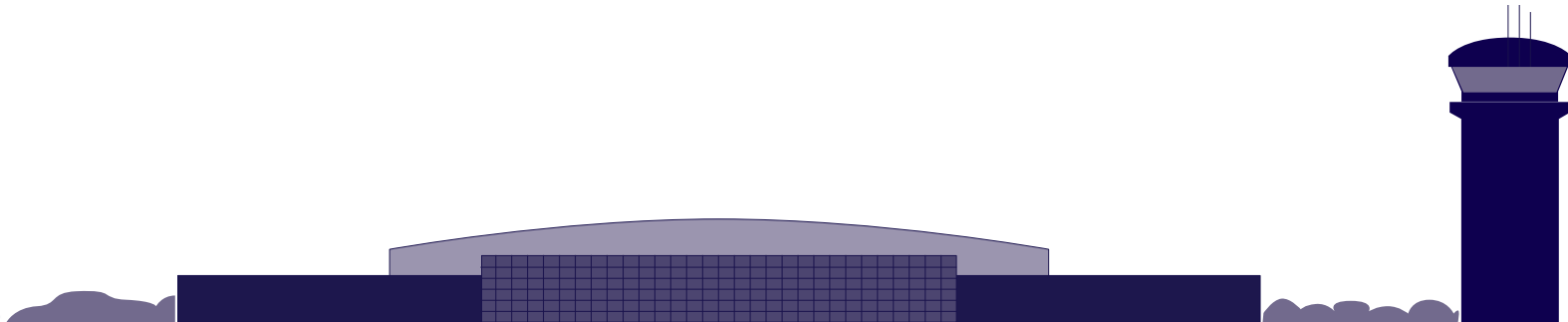
- Sources of PFAS and 1,4-Dioxane
- Overview of Site Investigations
- Next Steps



# Sources of PFAS

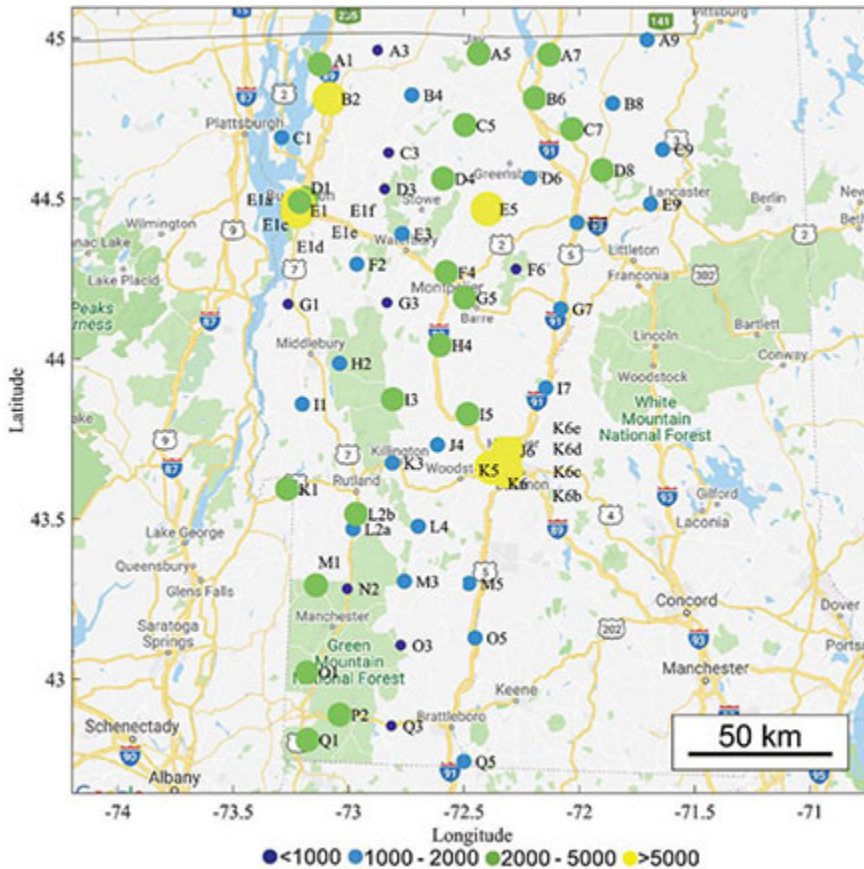


# Sources of PFAS





# PFAS in Soils

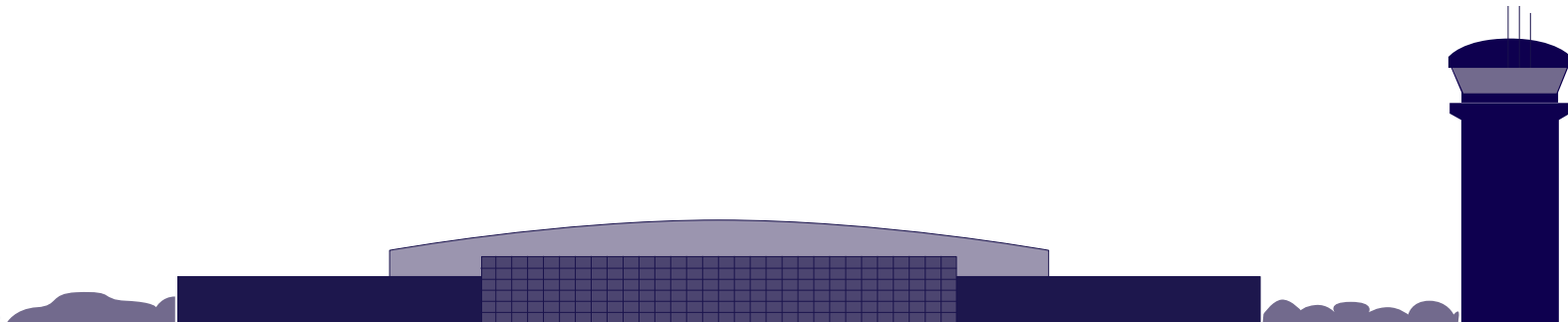


- Background Study in Vermont Found PFAS Compounds in all 66 Samples Taken in Areas Not Associated with Known Release.

Zhu, Ph.D., Wenyu; Roakes, P.E., Harrison; Zemba, Ph.D., P.E., Stephen G.; Badireddy, Ph.D., Appala Raju, PFAS Background In Vermont Shallow Soils, Pg. 34, Figure 5.1., 2018

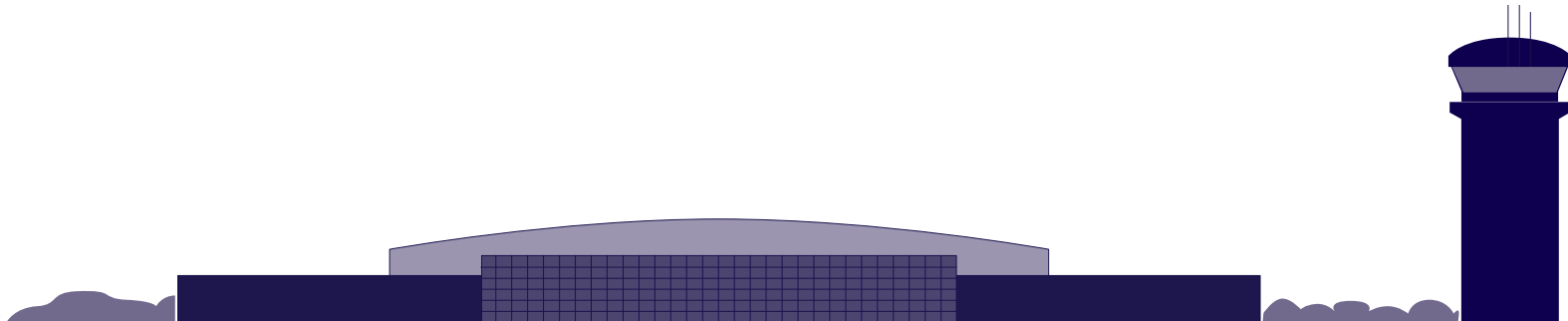
# Sources of 1,4-Dioxane

- Mixed with Solvents Released to Soil and Groundwater
- Consumer Products
- Deicing Chemicals
- Plastics and Pharmaceutical Products
- Food Packaging

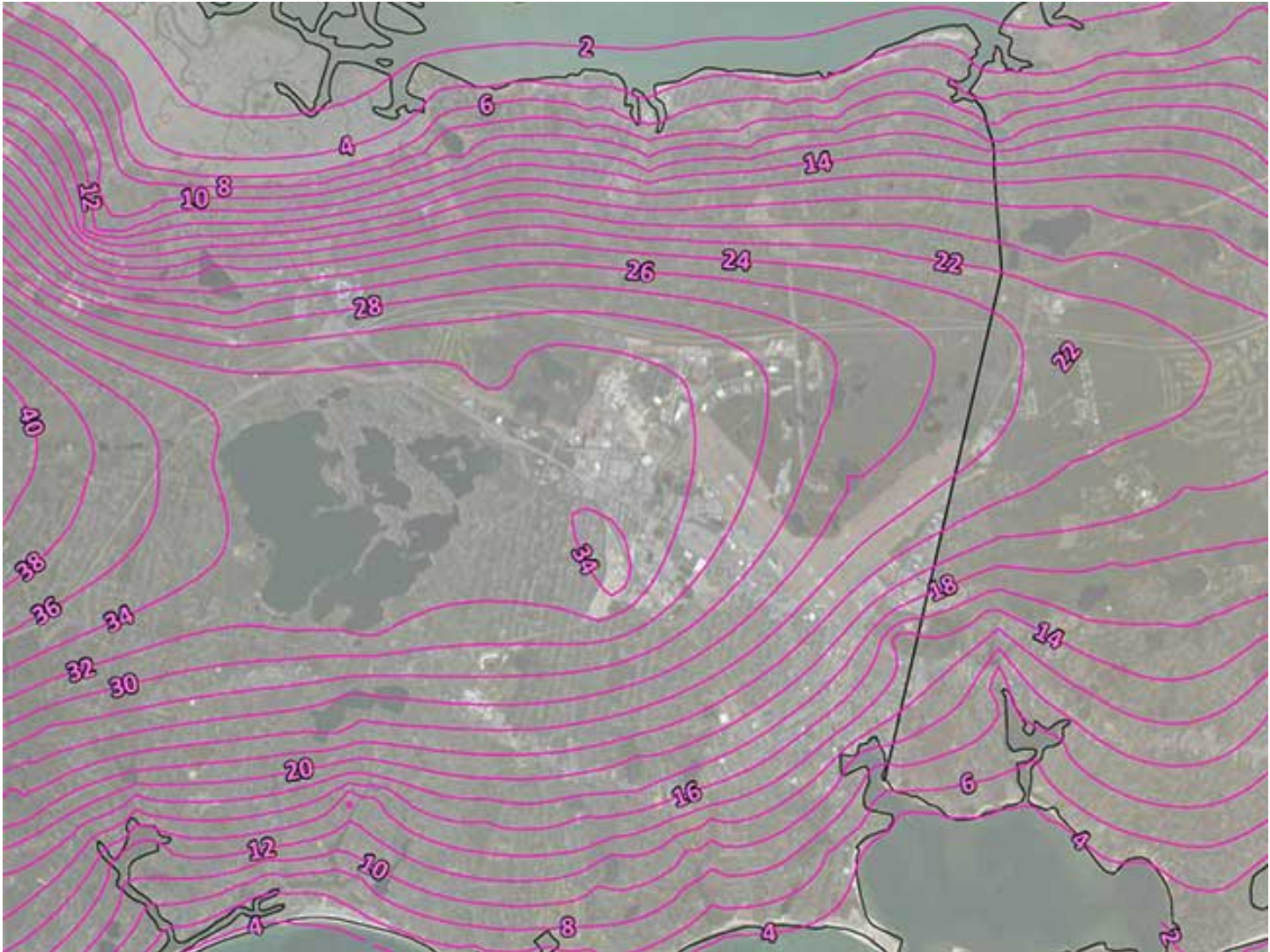


# Investigation Timeline

- 2016 Request for Information from DEP – Sampling of Existing Wells at the Airport
- 2017 Immediate Response Action Plan
- 2017 Phase 1 Report
- Phase II Comprehensive Site Assessments Ongoing

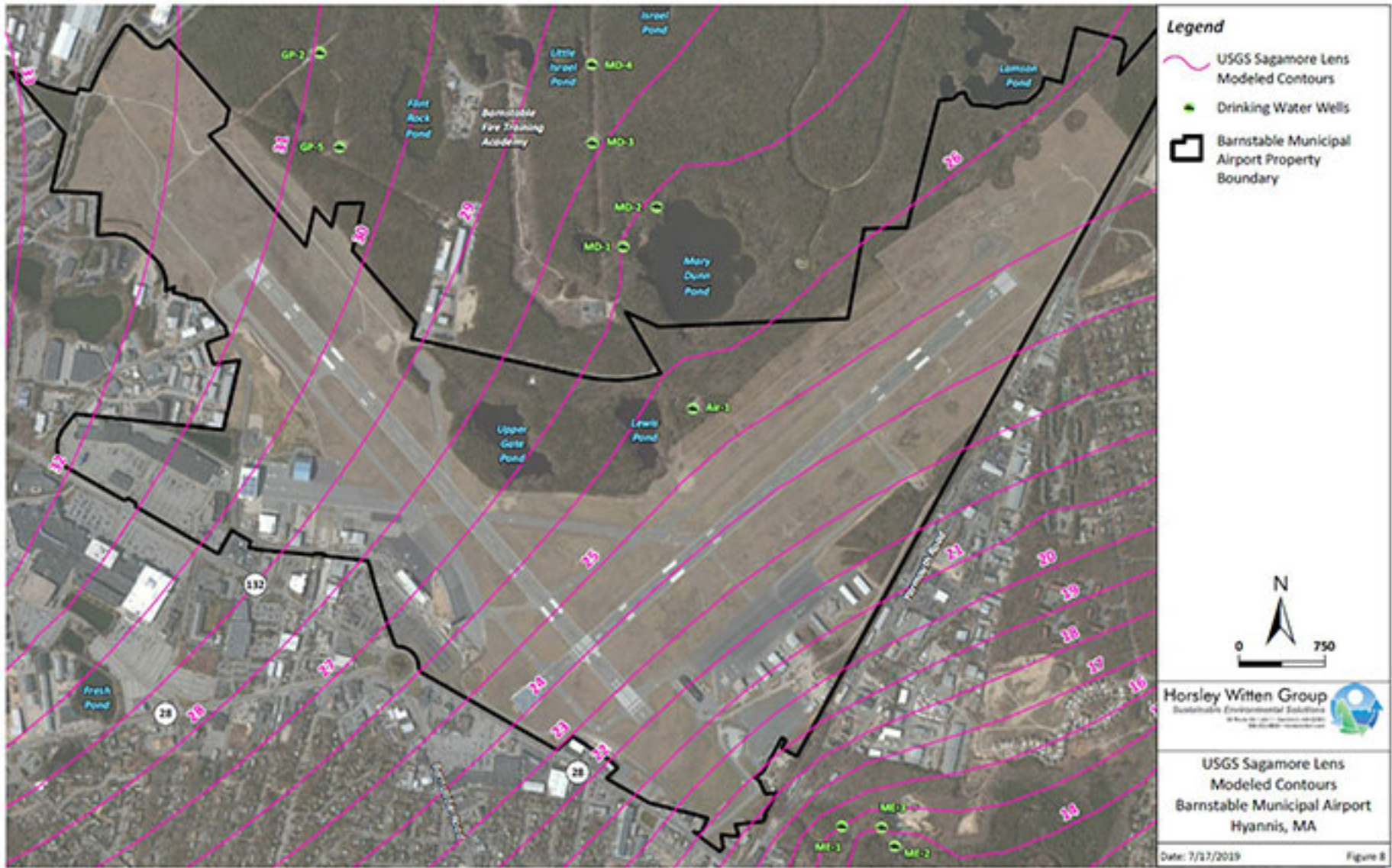


# Water Table Map for Mid-Cape Area



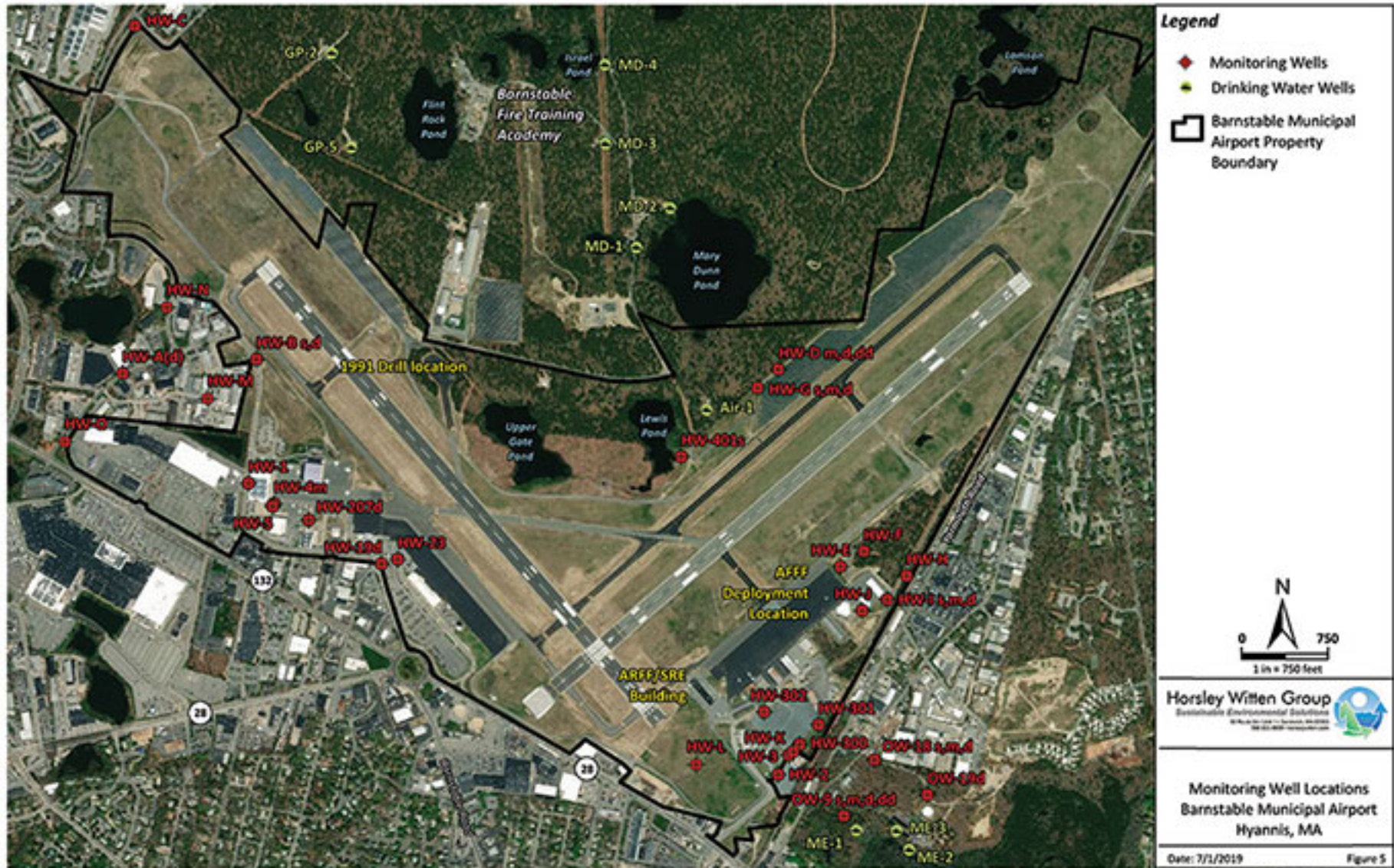


# Water Table Map





# Monitoring Well Locations Map





**Legend**

- 2017 PFAS Soil Samples
- 2018 PFAS Soil Samples
- Monitoring Wells
- Barnstable Municipal Airport Property Boundary
- Approximate extent of PFAS soil impacts

Deployment Location

AFFF

0 100 Feet  
1 inch = 100 feet

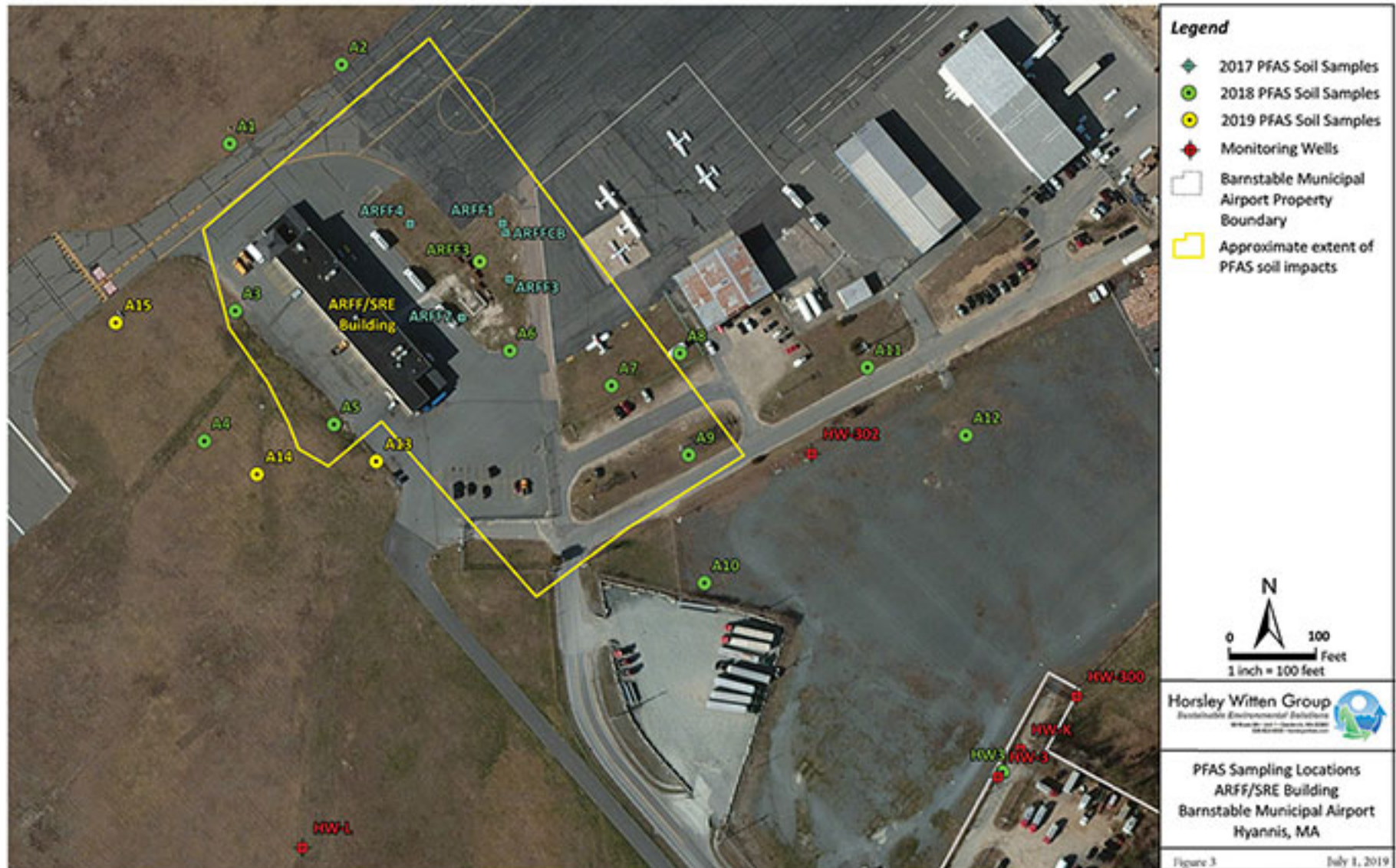
Horsley Witten Group  
Sustainable Environmental Solutions  
We Build the Way You Live

PFAS Sampling Locations  
Deployment Location  
Barnstable Municipal Airport  
Hyannis, MA

Date: 7/1/2019 Figure 4



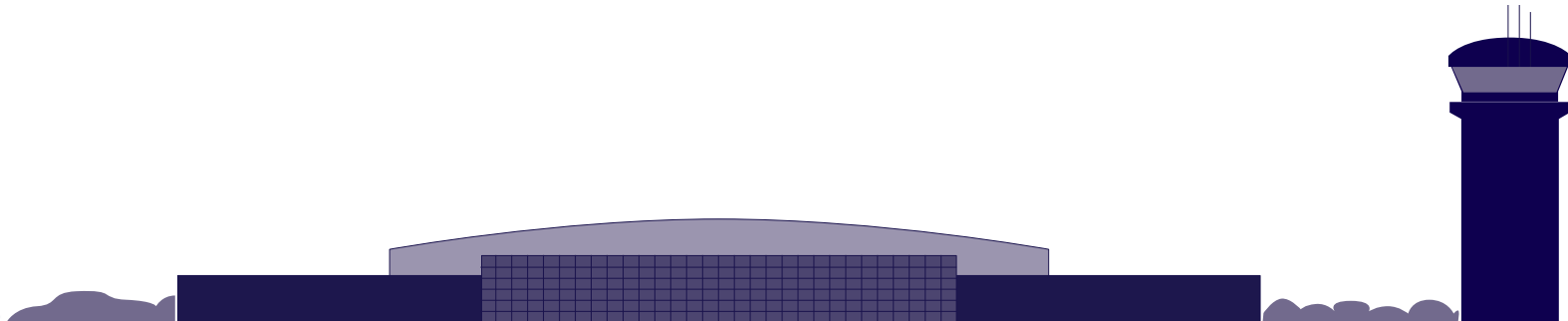
# ARFF Building Area Soil Map



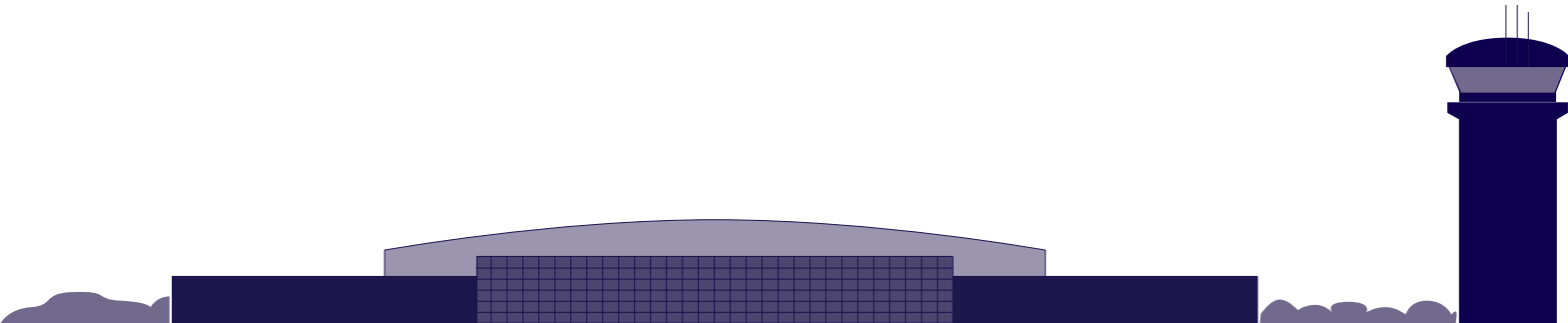


# Status - Next Steps...

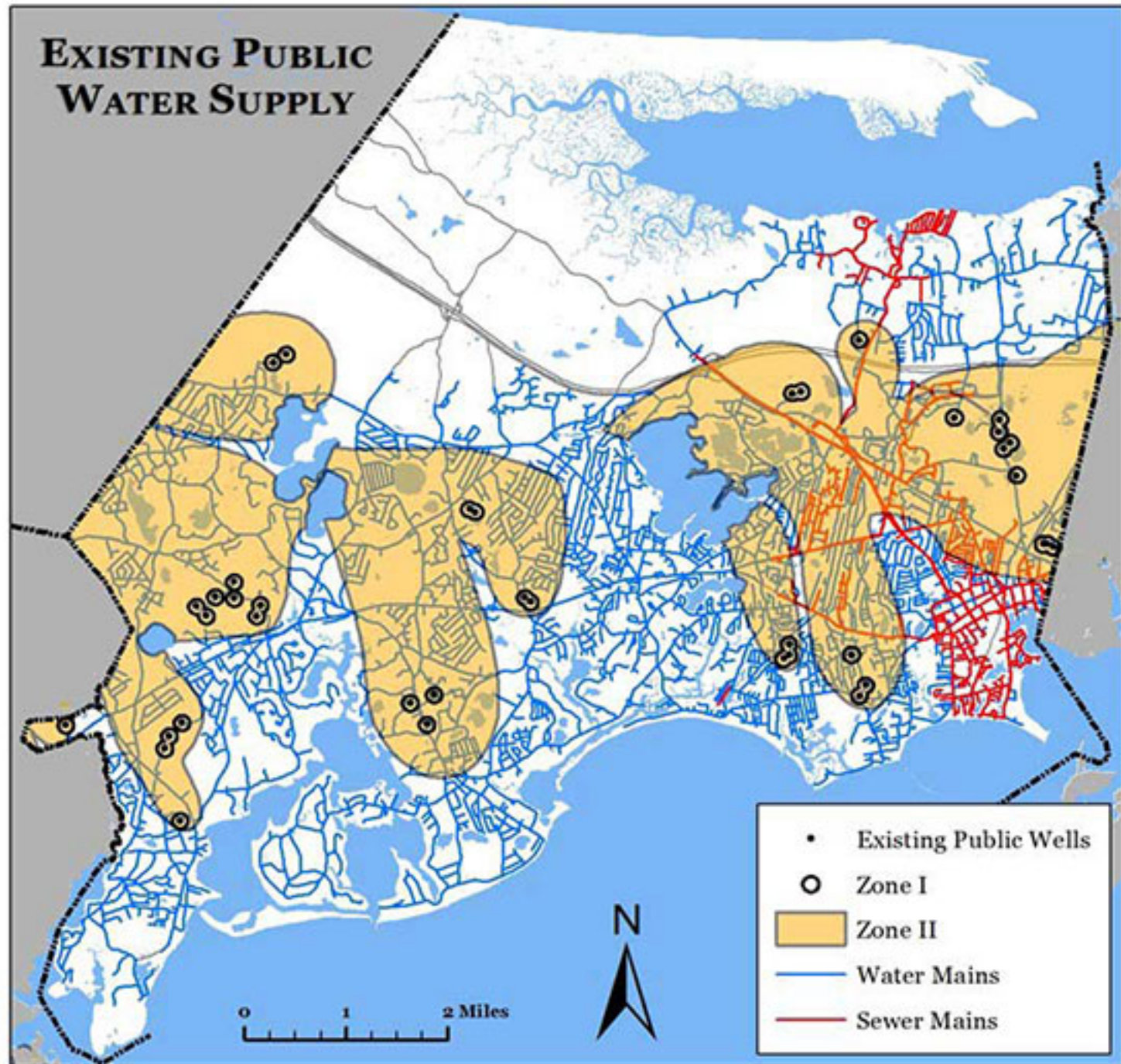
- Area of PFAS in Soils Have Been Mapped
- Groundwater Investigations for PFAS and 1,4-dioxane ongoing – Likely Completed in the Next 3-6 Months
- Completion of Phase II Comprehensive Site Assessment, Including Evaluation of Risks



# Drinking Water Protection Hyannis Water District

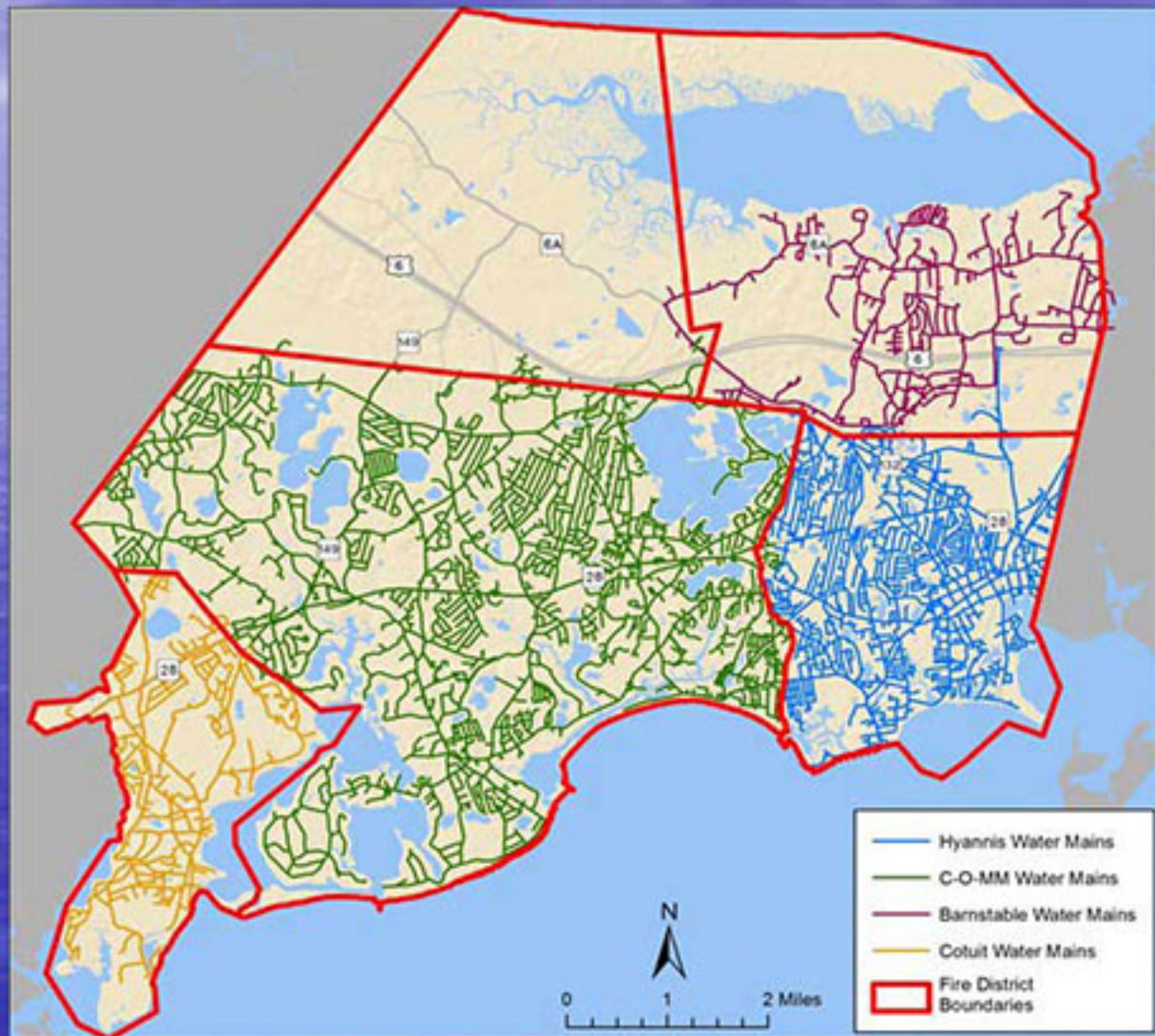


# EXISTING PUBLIC WATER SUPPLY



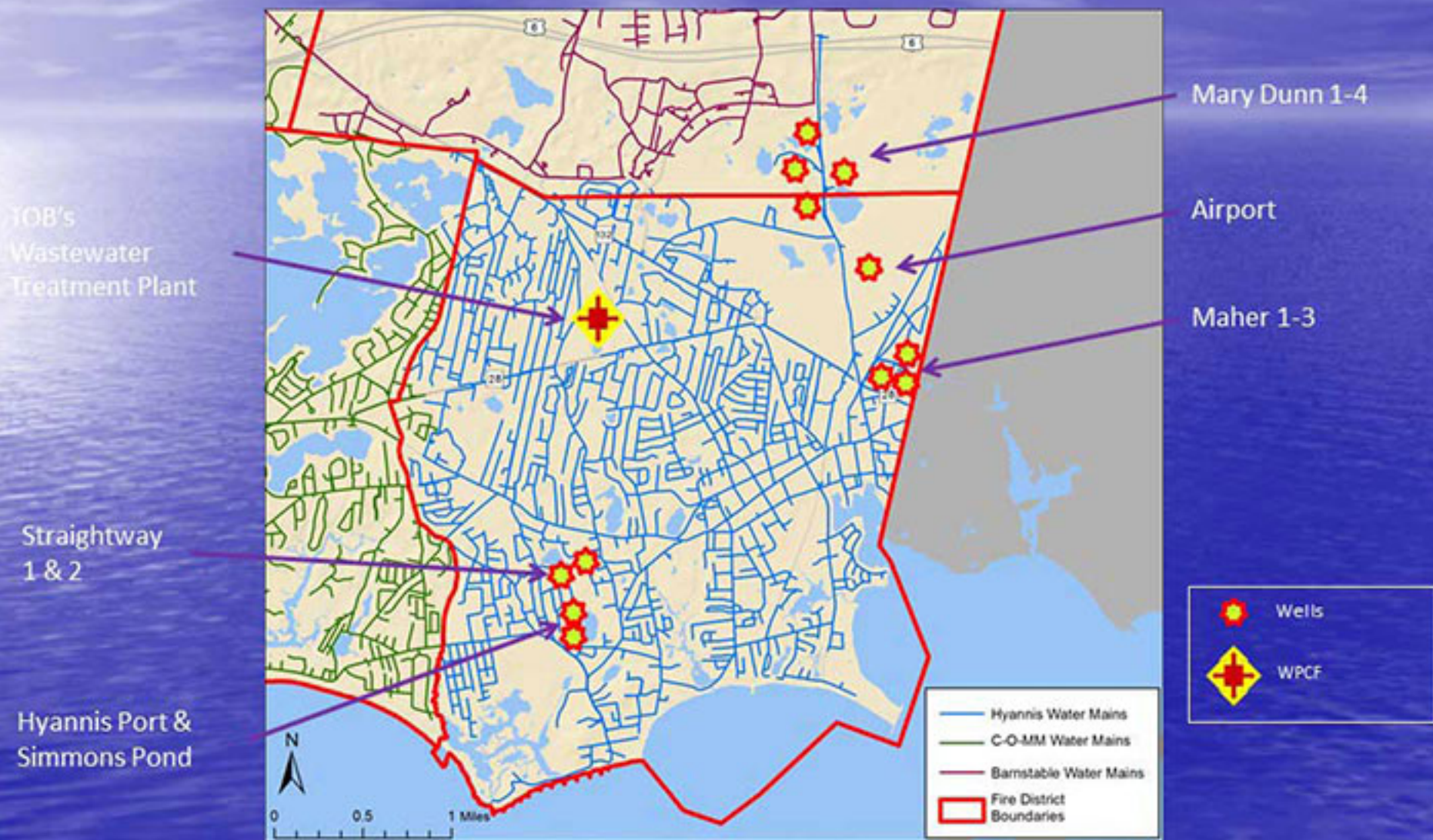


# Water Systems Within Barnstable

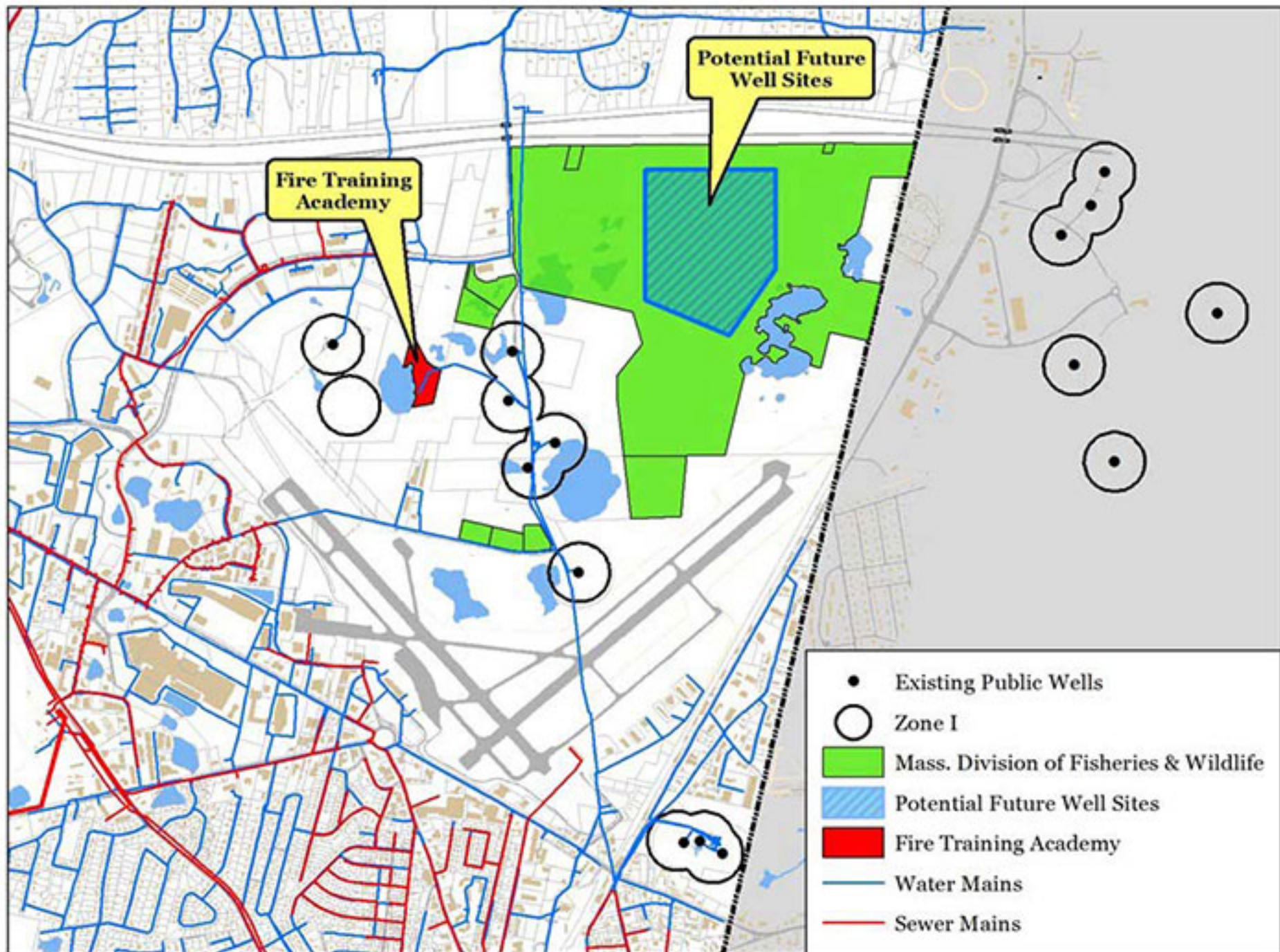




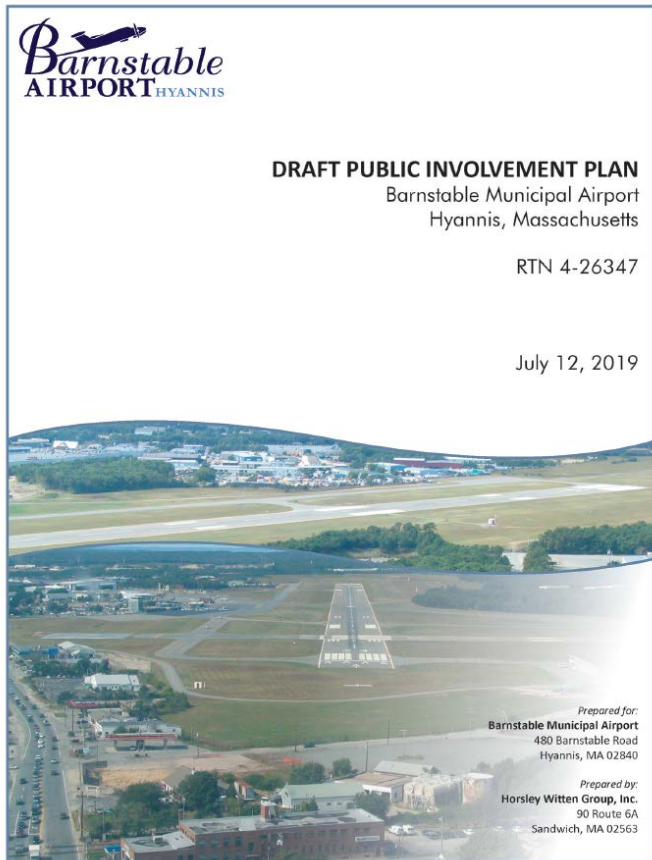
# Supply - Hyannis Water District Wells







# Public Involvement

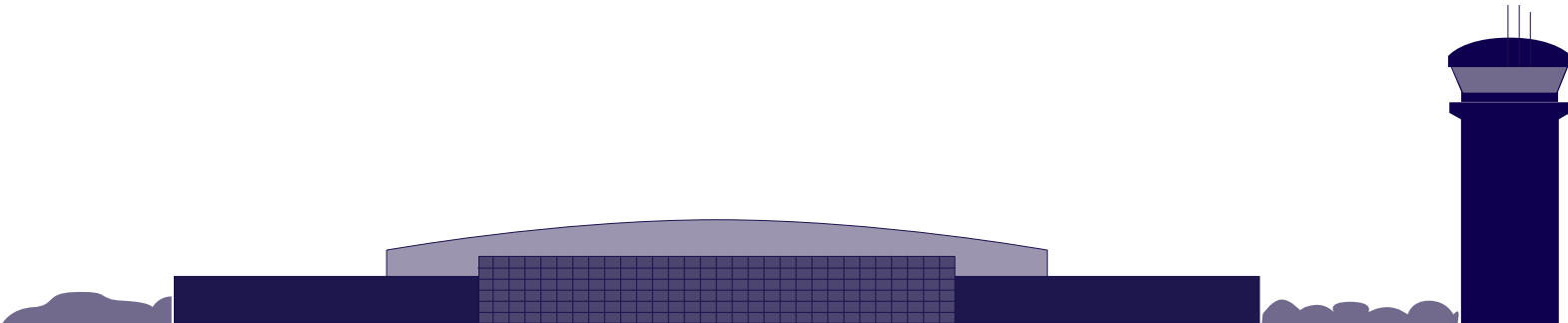


- Comments on Draft PIP Due by **August 19, 2019**
- PIP Finalized by September 18, 2019



# Public Involvement

- Phase II Report will be Available for Review and Comment Prior to It's Submission to DEP.
- Interested Parties will be Notified of Draft Report When Available for Review
- Similar Process Applied to Future Documents
- Status Reports Available at DEP website





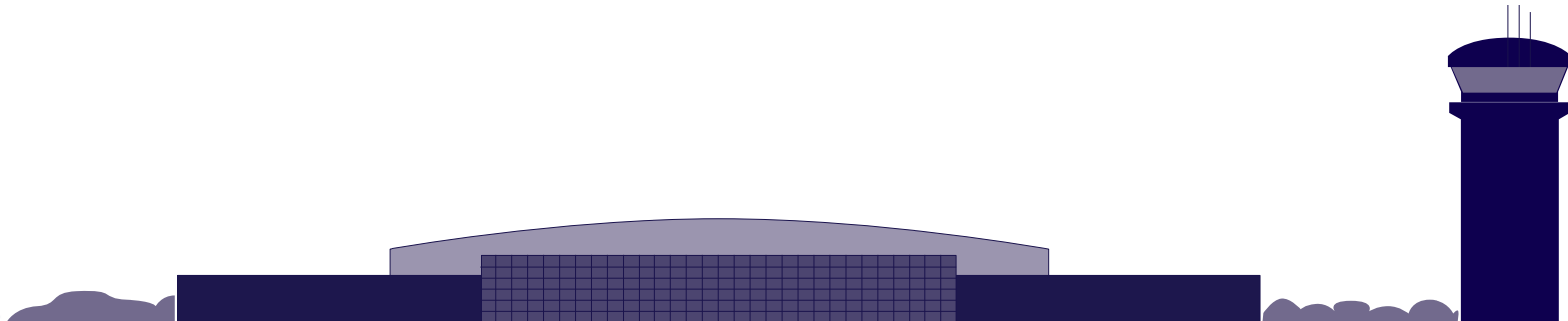
# Availability of Documents WEBSITES

## **AIRPORT WEBSITE:**

<https://airport.town.barnstable.ma.us/about/documents.aspx>

## **DEP WEBSITE:**

[https://eeaonline.eea.state.ma.us/EEA/fileviewer/Rtn.aspx?rt  
n=4-0026347](https://eeaonline.eea.state.ma.us/EEA/fileviewer/Rtn.aspx?rt<br/>n=4-0026347)

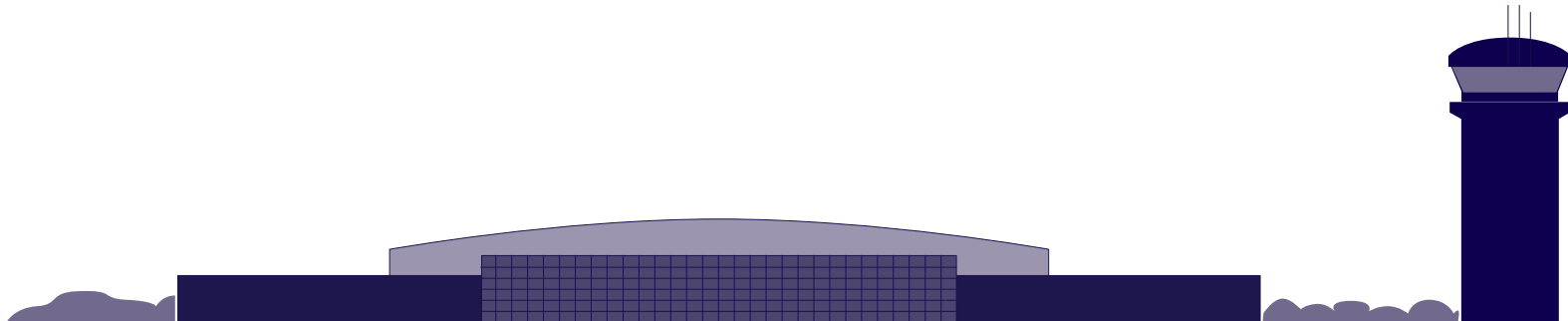


# Availability of Documents

## PAPER COPIES

Barnstable Municipal Airport  
480 Barnstable Road  
Hyannis, MA  
(508) 775-2020

Hyannis Public Library  
401 Main Street  
Hyannis, MA  
(508) 775-2280



# Availability of Documents

## Paper Copies

### **West Yarmouth Public Library**

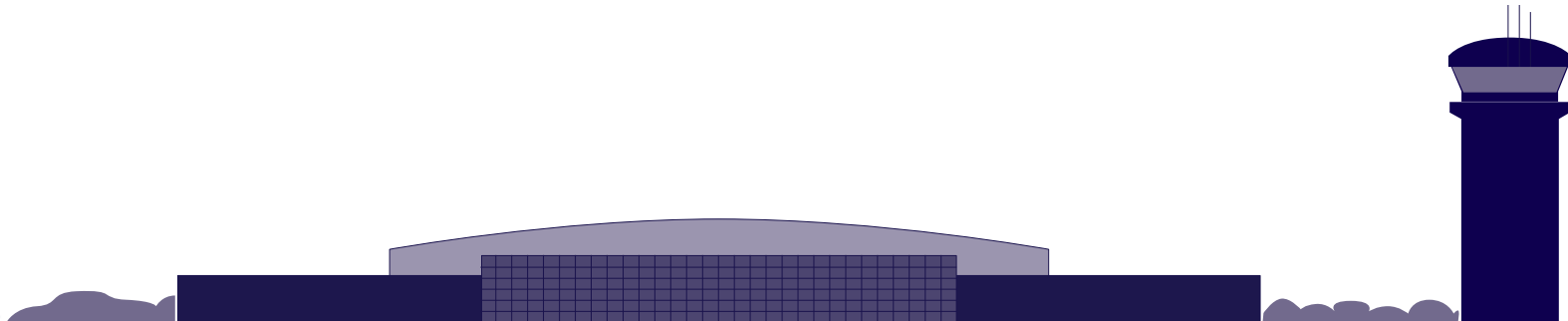
391 Main Street, Route 28  
West Yarmouth, MA  
(508)775-5206

### **South Yarmouth Public Library**

312 Old Main Street  
South Yarmouth, MA  
(508)760-4820

### **MassDEP Southeast Regional Office**

20 Riverside Drive  
Lakeville, MA  
(508) 946-2700



# Questions?

