

# Airport Commission Meeting

April 9, 2024

PFAS Investigation  
Status Update





# Overview of Work Performed

Private Well Sampling

IRA Status Report Summary

Phase II Comprehensive Site Assessment Completed

Overview of Soil and Groundwater Sampling at the Airport

MCP Risk Characterization

Phase III Evaluation of Remedial Alternatives

# Private Well Sampling

Nearly 700 residential well samples tested to date

## Madequecham Valley Road

- 5 properties included in sampling program (17 connected to water line)
- Sampling in May/August each year (homes winterized remainder of year)

## West Side/Nobadeer Way Area

- No further sampling currently planned for this area
- All properties with exceedances of current MassDEP standard of 20 ppt (11) have been connected to municipal water

# IRA Status Report Summary

- IRA Status Report #15 submitted on February 23
- One round of residential sampling on MVR in August (5 homes)
  - ✓ All results were below 20 ppt
- Fuel Farm Investigation
  - ✓ Small diesel fuel spill (~4 gal) inside secondary containment
  - ✓ Fouled the carbon in the GAC treatment system used to treat PFAS in stormwater
  - ✓ System was upgraded with organoclay pretreatment vessel for fuels
  - ✓ GAC was replaced and system returned to service
  - ✓ No release of PFAS or fuel to the environment
- Soil sampling at Runway 15 Approach, Monohansett Rd, and Sun Island Road areas to define extent of soil impacts: 70 samples from 23 locations
- Groundwater grab samples collected at Runway 15 Approach (4), Strojny Lot (3), and Sun Island Road (5) areas to complete horizontal delineation of plumes

# Phase II Comprehensive Site Assessment

- Completed over 3-year period
- Close coordination with MassDEP
- Over 1,600 samples collected and tested for PFAS
- Sources (required AFFF testing, fuel farm stormwater, South Ramp surface runoff) were identified and mitigated
- No on-going releases of PFAS to the environment
- All homes exceeding MassDEP standard of 20 ppt have been connected to water line (26 homes)
- Phase II Comprehensive Site Assessment Report submitted to MassDEP on March 8, 2024

# Groundwater Overview

- 22 Monitoring wells (including 4 deep wells)
- Groundwater flow patterns well understood (flow is north to south)
- Groundwater seepage velocity estimated at 700 ft/year
- Water levels fluctuate about 1-2 ft: highest in spring, lowest in fall
- All groundwater from the Airport eventually discharges to the ocean
- Groundwater 'grab' sampling used to great effect to map plumes
- Over 220 groundwater samples collected and tested for PFAS
- Horizontal plume delineation completed
- Impact from geothermal wells
- PFAS migrating onto the Airport from upgradient sources
- Vertical delineation of plumes not required by MassDEP based on the understanding that all groundwater discharges to the ocean







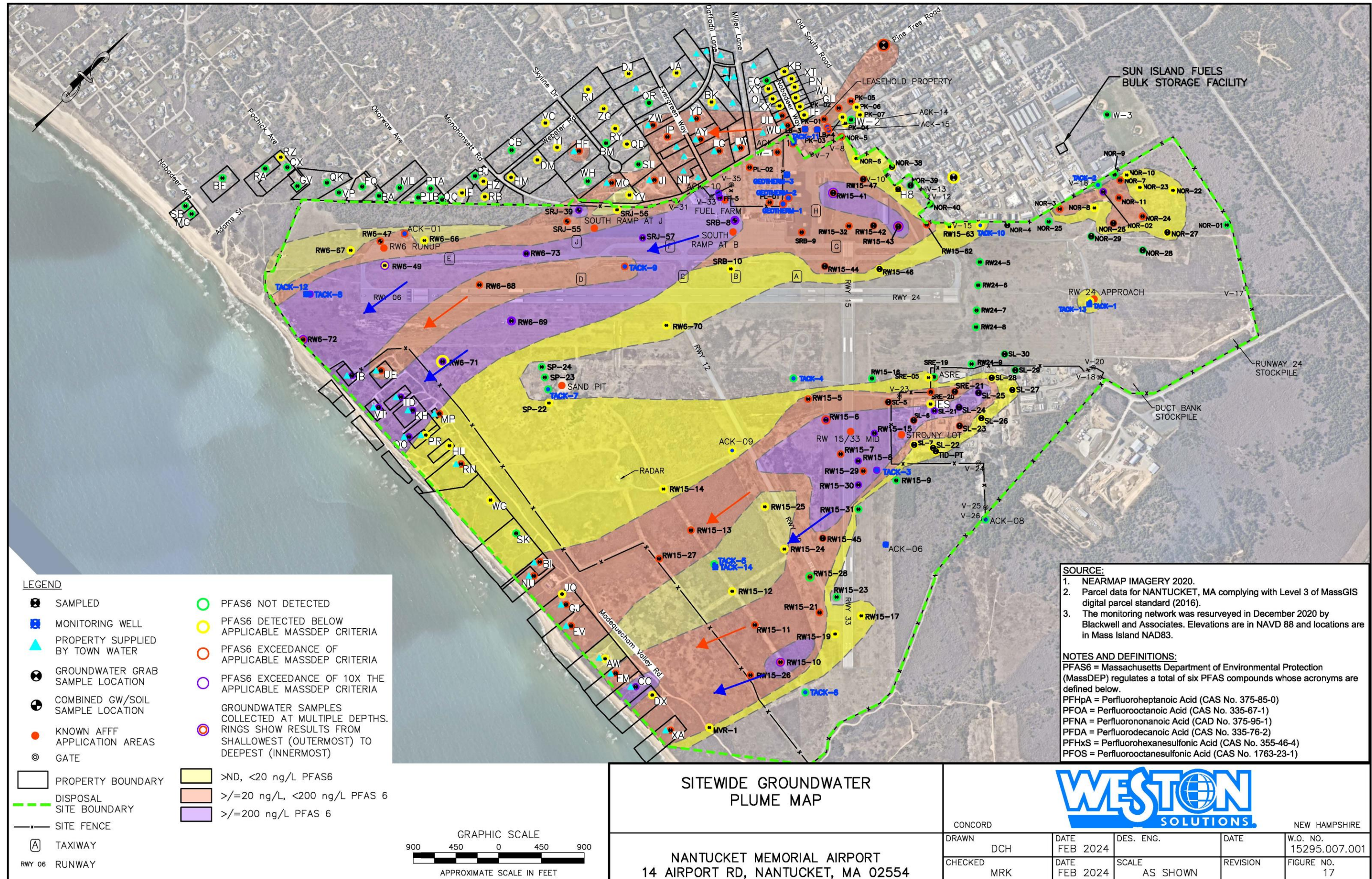




# Soil Overview

- Over 675 soil samples collected and tested for PFAS
- Initial sampling targeted known AFFF application areas, follow-up sampling performed to define release areas
- Release areas with groundwater impacts identified at:
  - ✓ Sun Island Road
  - ✓ Runway 15 Approach
  - ✓ South Ramp at B
  - ✓ Runway 15 Runup
  - ✓ Strojny Lot
  - ✓ Runway 6 Runup
- Low concentrations of PFAS found to be widespread in top 0-4 feet (mostly 0-2 ft)
- Low concentrations of PFAS identified in top 0-2 ft off-site along Monohansett Road near Gate 30B related to runoff from South Ramp (no groundwater impact)





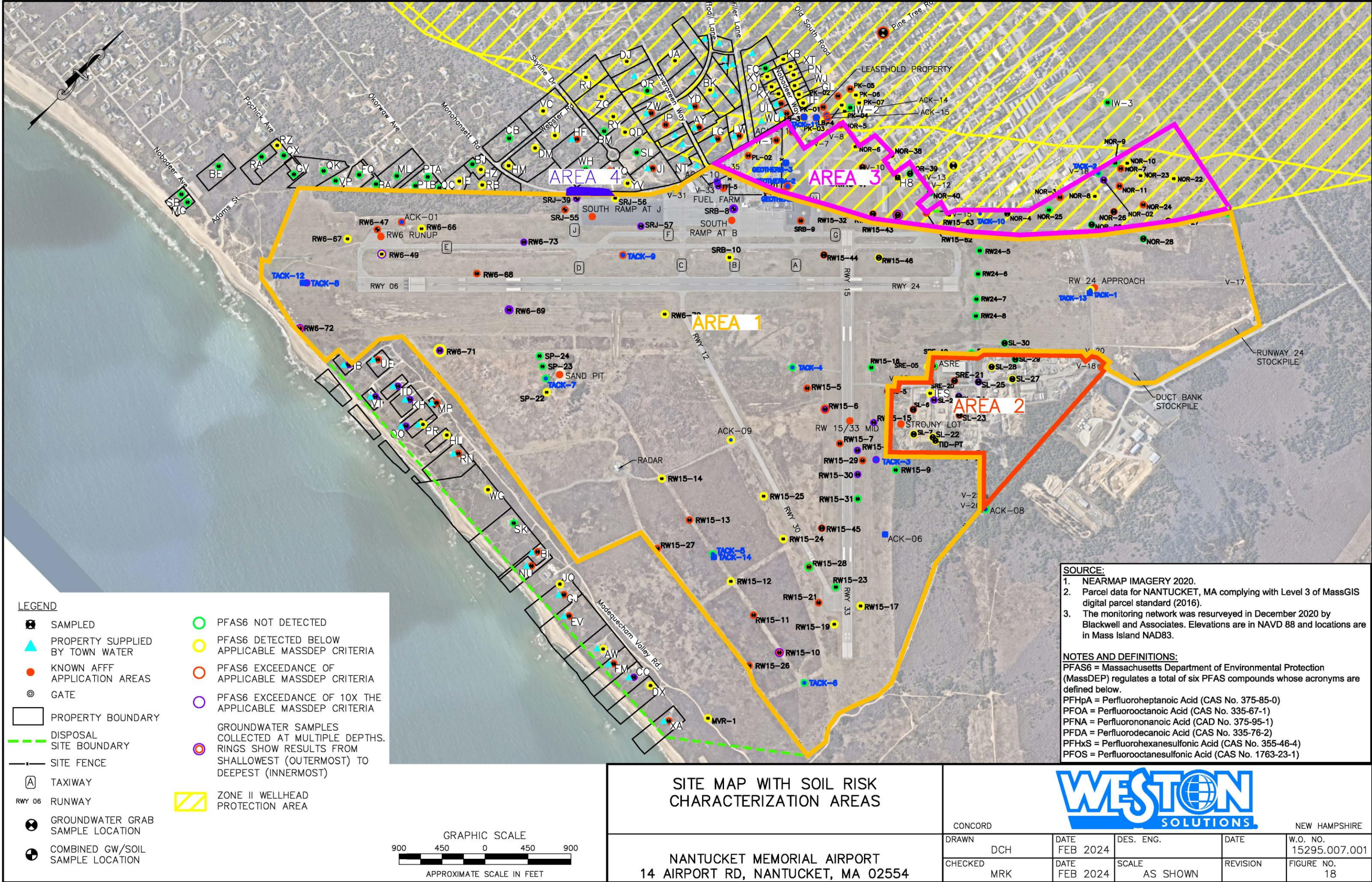


# Risk Characterization

- Performed in accordance with MCP (310 CMR 40.0900) and related guidance documents
- Method 1 was used for groundwater:
  - ✓ GW-3 standards (500-40,000 **ppb**) applied within NPDWSA
  - ✓ GW-1 standards (20 **ppt**) everywhere else
- Method 3 was used for soil: uses exposure scenarios, exposure pathways, and measured concentrations to calculate risk
- Method 3 exposure scenarios evaluated were:
  - ✓ Airport/Construction Worker (Airport property and Bunker Road industrial area)
  - ✓ Trespasser (Bunker Road industrial area)
  - ✓ Child Resident (Monohansett Road area)
- Site divided into 4 areas of soil exposure:



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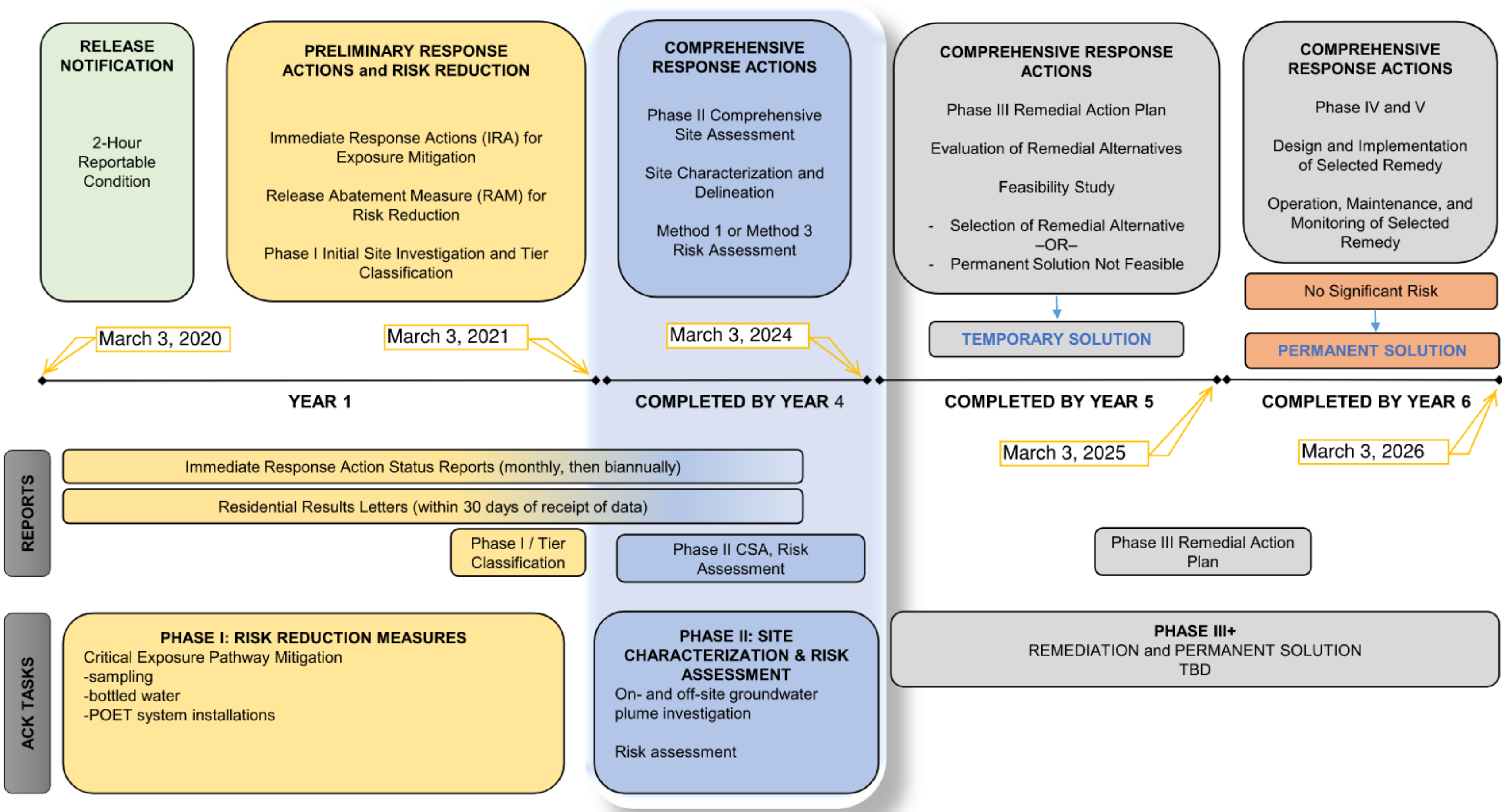


# Risk Characterization Findings

- Groundwater within the NPDWSA (on Airport property) meets a “Condition of No Significant Risk” under the MCP
- Groundwater outside of the NPDWSA (northwest corner of Airport and off-property areas) does not meet a “Condition of No Significant Risk”; however, all current risks in those areas have been mitigated by connection of receptors to the water line
- Based on the Method 3 Risk Characterization, soils in all four areas do not pose a risk to human health based on direct contact
- Some soils in the release areas within the Zone II area on Airport property pose a *potential future* risk to groundwater



# MCP TIMELINE AND ACK TASKS





# Phase III Evaluation of Remedial Alternatives

- Phase III is required because some risks were identified
- Report is due to MassDEP by March 3, 2025
- Phase III will consider:
  - ✓ Connection of residents with PFAS <20 ppt to existing water line
  - ✓ Restoration of groundwater outside of NPDWSA to 20 ppt
  - ✓ Potential for source area soils within the Zone II on Airport property to leach to groundwater
- Potential remedial actions will be developed for these conditions and evaluated based on effectiveness and cost, in accordance with MassDEP guidance





**Thank you  
and  
Questions**

