

Intermunicipal Airport Master Plan Task Force  
Groundwater Considerations for the Master Plan

March 6, 2025

The Intermunicipal Airport Master Plan Task Force was formed by participating municipalities to identify issues of concern related to the upcoming revisions of the Master Plan for Westchester County Airport. The Task Force is composed of individuals from the following seven local communities: City of Rye, Village of Rye Brook, Village of Port Chester, Town of Greenwich, Town of New Castle, Town of North Castle, and Town of Rye. The individuals are volunteers selected by the elected officials in their municipalities who have varied backgrounds in local governance, land use planning, law, and engineering. The Master Plan topics of concern were each addressed in separate reports, with the understanding that there is overlap among some topics. The purpose of this report is to summarize the issues related to groundwater contamination at Westchester County Airport and make recommendations to our elected officials about the how these topics should be addressed in the Master Plan update. Specifically, this report summarizes the types of contaminants, their sources, the extent of contamination, offsite receptors, and the plan for remediation as part of the Master Plan.

Groundwater Contaminants: Types, Sources, and Extent

A report by an engineering consulting firm, WSP, on July 23, 2024, provided the results for the semi-annual groundwater sampling program at the Westchester County Airport.<sup>1</sup> The sampling work was completed between April 22 and 29, 2024. The sampling is part of a groundwater monitoring program reinstated by the County in August 2018; the previous program ran from 2001 – 2011. The monitoring program was reinstated in response to a November 2017 sampling event that confirmed the presence of per- and polyfluoroalkyl substances (PFAS) in several airport monitoring wells. PFAS are a class of man-made chemicals that include thousands of individual compounds which are used in a variety of products and are often referred to as “forever chemicals” because they are resistant to breaking down. Also, PFAS have been “linked to a wide range of health risks in both human and animal studies—including cancer (kidney and testicular), hormone disruption, liver and thyroid problems, interference with vaccine effectiveness, reproductive harm, and abnormal fetal development.”<sup>2</sup> One of the PFAS chemicals, Class B Aqueous Film Forming Foams (AFFF), is used to fight fuel or petroleum-based fires. Different types of these foams, including PFOS (perfluorooctanesulfonic acid)-based AFFF and fluorotelomer AFFF, were used at the airport over a period of years during fire training activities. These activities were conducted in an onsite burn pit first by the Air National Guard (ANG), a former tenant who left the site in 1983, and later by the airport in compliance with Federal Aviation Administration (FAA) regulations. The burn pit was located north of the end of Runway 16 (see Figures 1 and 2). Use of the burn pit ceased in the late 1990s. PFAS are considered an emerging contaminant and they are being found at sites, including

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<sup>1</sup> John Benvegna, WSP, to John Nonna, Westchester County Attorney, July 23, 2024.

[https://airport.westchestergov.com/images/stories/pdfs/about/April\\_2024\\_Groundwater\\_Sampling\\_Report.pdf](https://airport.westchestergov.com/images/stories/pdfs/about/April_2024_Groundwater_Sampling_Report.pdf) (accessed August 7, 2024).

<sup>2</sup> National Resource Defense Council, “Forever Chemicals’ Called PFAS Show Up in Your Food, Clothes, and Home,” <https://www.nrdc.org/stories/forever-chemicals-called-pfas-show-your-food-clothes-and-home> (Accessed March 6, 2025).

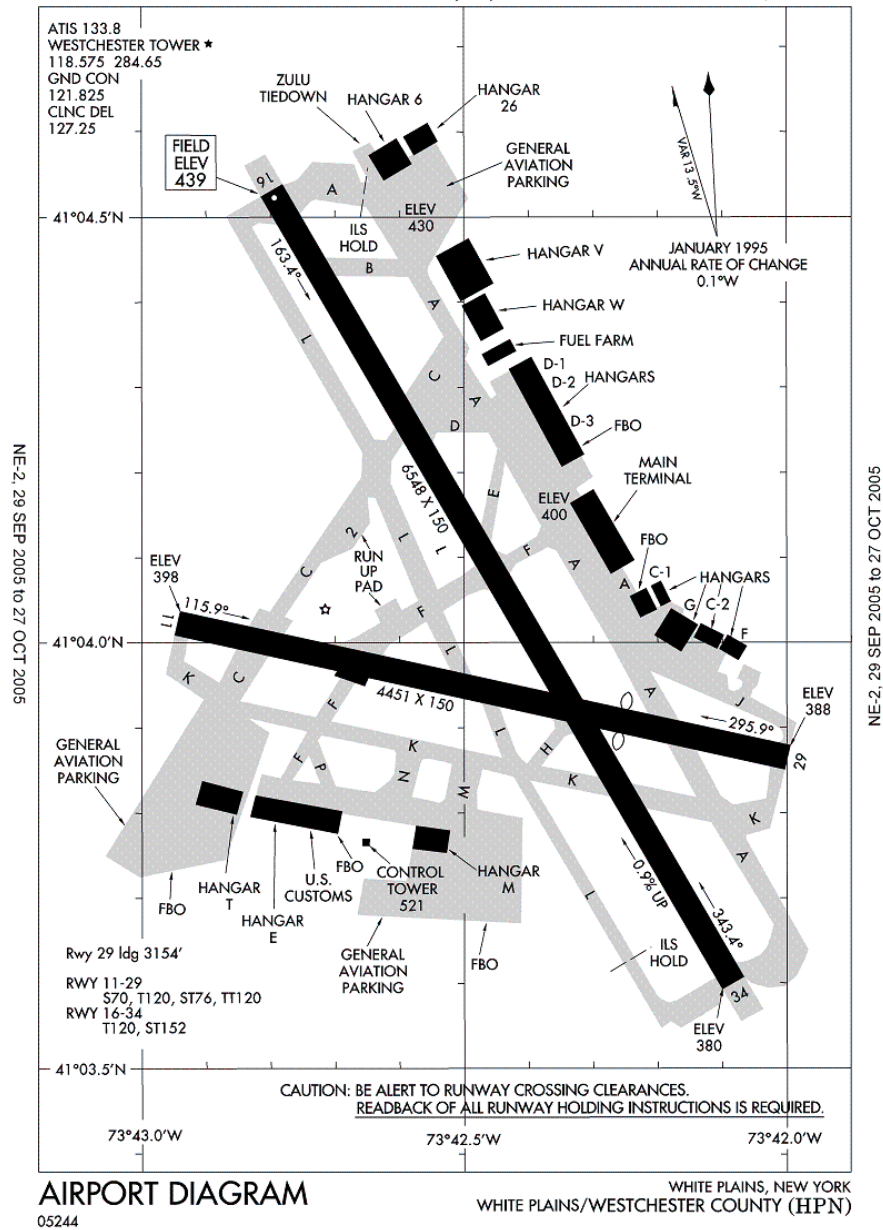
airports, across the country. Although new non-PFAS foams are being introduced for firefighting, it is likely that the residual PFAS contamination will persist for many years to come.

The April 2024 sampling event included a total of 41 groundwater monitoring wells of which 39 were sampled for PFAS. In addition, samples from selected wells were analyzed for volatile organic compounds (VOCs), 1,4-dioxane and glycols (ethylene and propylene glycol). The VOCs, 1,4-dioxane; and glycols. The VOCs originate in the aircraft fuels, hydraulic fluids, and maintenance-related hydrocarbons (e.g., lubricants, solvents). The 1,4-dioxane is a stabilizer used in the manufacture of chlorinated solvents. While there is no known specific use of this compound at the airport, it was found in the vicinity of Hangar D (just north of the main terminal) & Hangar E (on the south side of the airport), which are also known locations of past solvent spills (see Figure 1 for these hangar locations). The glycols are associated with deicing fluid. While included in the sampling, no glycols were found.

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**AIRPORT DIAGRAM**

AL-651 (FAA)

WHITE PLAINS/WESTCHESTER COUNTY (HPN)  
WHITE PLAINS, NEW YORK

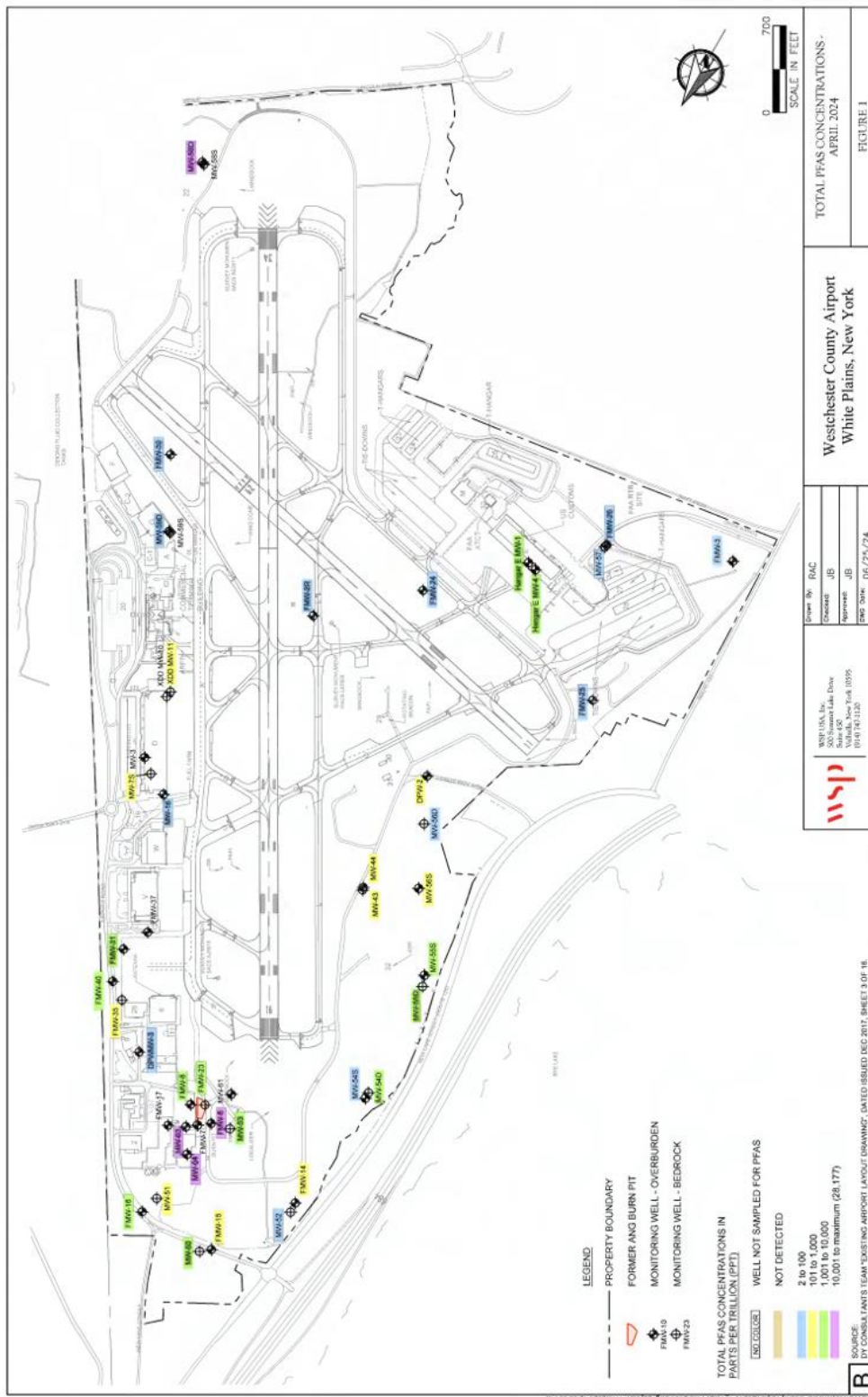


Figure 2—Monitoring Well and Burn Pit Locations---Relative concentrations of PFAS are color coded.<sup>4</sup>

<sup>4</sup> John Benvegnia, WSP, to John Nonna, Westchester County Attorney, July 23, 2024.

The geology at the site consists of unconsolidated overburden soil overlying bedrock. The depth to bedrock varies across the site ranging from approximately 10 to 20 feet below grade. The groundwater flows in the bedrock generally from the north corner to the south. As shown in Figure 3, there is a divide evident for shallower groundwater such that water in the northern portion of the property flows northwest toward Rye Lake and the remainder flows southeast toward Blind Brook and its tributaries. Depth to groundwater ranges between 1.5 and 20 feet below grade. The shallow groundwater flow patterns approximately match those for surface water.

For those contaminants detected, the following table shows example results for the detected contaminants in April 2024 with their regulatory limits and any remedial actions taken to date:

Contaminant	Highest Detections	Lowest Detections	Regulatory Limit	Remediation Performed
PFAS	MW-63 (28,177 ng/L) FMW-6 (27,285 ng/L) Near former burn pit MW 58D (13,500 ng/L) Near current fire training area in southeast corner of property	MW-56D (5.3 ng/L) Near western property line	4-10 ng/L in drinking water, depending on the specific compound	2800 tons soil removed from former ANG burn pit in 2000, but this remediation was focused on petroleum hydrocarbons.
VOCs	Detected in 13 of 17 wells sampled. Highest at FMW-39 (590 ug/L toluene)	MW-64 (2.8 ug/L vinyl chloride)	5 ug/L toluene  2 ug/L vinyl chloride	None yet, except as noted above. Highest detections associated with areas of former spills: Hangars, B, D, E, and ANG site
1,4-dioxane	Hangar E MW-1 (1170 ug/L)	XDDMW-11 (BR) (3.7 ug/L) (note only 3 wells sampled in 4/24)	1.0 ug/L for public drinking water supplies	None yet. Isolated contamination, which is to be part of Brownfield Cleanup at Hangars D & E.





### Offsite Receptors and Impacts

According to the New York State Department of Environmental Conservation (DEC) Brownfield website, “While impacted surface water leaves the boundary of the site, surface water samples collected from Rye Lake did not contain detectable concentrations of PFAS.” It is unclear when and where these surface water samples were collected, although this statement is made as part of a conclusion summarizing the April 2024 sampling results, therefore, it is possible that the sampling was done at that time.

There are offsite groundwater impacts noted by DEC in wells on the perimeter of the property. The highest concentrations found in 2024 were near the former ANG Burn Pit and the active fire training/fire equipment testing area, in MW-63. An additional area in the vicinity of former Hangar B may be contributing to the impacts near downgradient monitoring wells MW-54 and MW-56. PFOS was detected in all but one monitoring well, ranging from 17 ppt to 8,950 ppt. PFOA was identified in all wells sampled, ranging from 3 ppt to 30,100 ppt.

In sampling conducted 2014-2016, PFOS were discovered in the City of Newburgh water supply reservoir, Lake Washington, that were found to have originated at the Stewart Air National Guard Base. The discovery resulted in Newburgh changing their water supply source. This issue prompted the New York State Department of Health to implement a Water Quality Rapid Response Team to test the groundwater at Westchester County Airport. As part of this testing, other offsite groundwater contamination was detected. As reported by *LoHud* in February 2018, the first detection, at 96 ppt PFAS, was made in 2016 at a well serving an office building at 1-3 New King Street in North Castle, which lies just north of the airport, and across Interstate 684 from the Rye Lake section of Kensico Reservoir, according to Sean Mahar, then DEC Assistant Commissioner of Public Affairs.<sup>6</sup>

Due to the likelihood that the contamination migrated from the airport, the state DEC ordered Westchester to install an activated granulated carbon filter system at the office building and to provide bottled water until the system was in service, according to a letter issued on Aug. 18, 2017. Since then, Westchester Joint Water Works has extended public water lines to New King St. and beyond to eliminate the use of private wells.

The same February 2018 news article states that “tests of the Kensico Reservoir have found no evidence that the contamination has seeped into the water supply” according to a state official.

Later, in April 2018, the *Greenwich Time* reported that in February 2018, eight private wells in Greenwich, possibly influenced by the Airport, were sampled by a testing company. Two showed “elevated” levels of PFAS. The exact levels of contamination were not reported but the residents were notified by Greenwich that they should not drink their well water.<sup>7</sup>

A map of all registered private domestic wells in the vicinity of the airport in New York State is provided in Figure 4. A summary of the data for these wells is provided below:

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<sup>6</sup> “Groundwater Contamination Found at Westchester County Airport,” David Mackay Wilson, *Lohud*, February 1, 2018. <https://www.lohud.com/story/money/personal-finance/taxes/david-mckay-wilson/2018/02/01/groundwater-contamination-found-westchester-county-airport/1070586001/> (Accessed August 9, 2024).

<sup>7</sup> “Contaminated Water Found in Greenwich Wells Near Airport,” Robert Merchant, *Greenwich Time*, April 13, 2018. <https://www.greenwichtime.com/local/article/Contaminated-water-found-in-Greenwich-wells-near-12832976.php> (Accessed August 9, 2024).

NY Well ID	Address	Depth	Date Installed
WE06622	22 Wolfe Ln., Harrison	805 ft	7/12
WE05704	6 Azalea Circle, Purchase	905 ft	5/03
WE05385	261 Old Lake St., West Harrison	650 ft	6/01
WE05978	Barnes Lane, Purchase	425 Ft	4/05

It is worth noting that only 6% of Westchester residents have private wells and that, in 2007, a law was passed requiring that wells be tested prior to a property sale. However, PFAS are not among the contaminants for which testing is required.

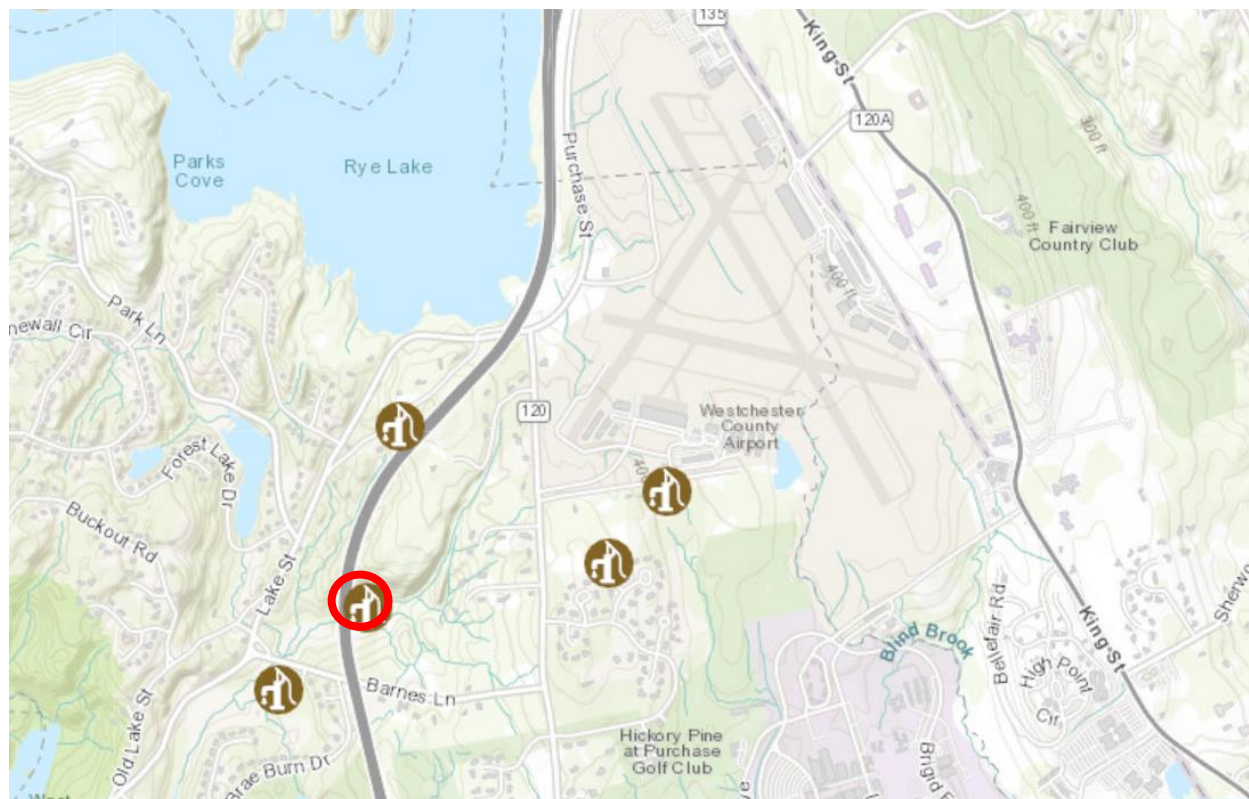


Figure 4—Locations of Registered Domestic Wells in New York State in the Vicinity of Westchester County Airport<sup>8</sup> (Note the well circled in red is listed with a Dutchess County address and, therefore, is assumed to be mislocated on the map and is not included in the summary in this report.)

### Remediation Plans

In response to the onsite PFAS detections, a site-wide investigation was completed in 2020 pursuant to a consent order between Westchester County and DEC. In April 2020, the airport was accepted into the NYS Brownfield Cleanup Program (site C360174). Additional site investigation and remediation activities

<sup>8</sup> New York State Department of Environmental Conservation, DECInfo Locator, Water Supply Wells. <https://giservices.dec.ny.gov/gis/dil/> (Accessed August 9, 2024).



continue under that program.<sup>9</sup> The nature and extent of these remediation activities is not clear at this time.

### Master Plan Considerations

There are several areas of concern presented in this white paper that were not previously addressed in the 2017 update to the Airport Master Plan.<sup>10</sup> These are identified below:

1. The semi-annual groundwater monitoring initiated in 2009 found levels of volatile organic compounds (VOCs) above regulatory levels, yet no plan was proposed to address this issue.
2. There are offsite receptors (potable wells) that have been impacted by the airport groundwater contamination. The 2017 update includes no reference to offsite receptors.

Therefore, relevant considerations for the new Airport Master Plan are as follows:

1. Continue sampling of groundwater and surface water. The sampling program renewed in 2024 should continue at an appropriate frequency (e.g., semi-annual) to track the levels and extent of contamination. Reports seem to indicate no detected impact to Kensico Reservoir, however this monitoring should continue, as the reservoir is an important water supply for lower Westchester and New York City.
2. Proceed with the development of remediation plans in accordance with the Brownfield Cleanup Program. The remedial measures that may be considered include additional removal of sources (soil excavation), as well as groundwater extraction and treatment. An appropriately designed extraction and treatment system would not only collect and treat contaminated groundwater, but could serve to prevent migration of contaminants to the reservoir. Space planning at the airport should consider the need for locating and housing any needed groundwater treatment systems on the Airport property itself.
3. Notify current offsite receptors of the need to sample for PFAS. Because at least two Greenwich domestic wells were found contaminated, the downgradient NY wells should also be tested for PFAS. The respective health departments should then advise appropriate action to the well owners (e.g., cease use for drinking, provide point-of-entry treatment).
4. Determine the offsite zone of contamination and coordinate with NYSDEC and CTDEP to ensure no new domestic wells are installed within this zone or are installed with appropriate treatment systems.

### Conclusions

Airport operations have contaminated groundwater over the years with levels of some volatile organic compounds (VOCs) and PFAS now being detected above regulatory levels, both at onsite monitoring

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<sup>9</sup> New York State Department of Environmental Conservation Environmental Site Remediation Database, Westchester County Airport. <https://extapps.dec.ny.gov/cfm/extapps/derexternal/haz/details.cfm?pageid=3> (enter site id c360174) (Accessed August 9, 2024).

<sup>10</sup> DY Consultants, "Westchester County Airport Master Plan Update, Chapter II: Environmental Overview, Final Report," (December 2017), <https://airport.westchestergov.com/images/stories/masterplan/04Chap2EnviroviewFNLDec17.pdf> (accessed August 31, 2024), 2-59.

wells and offsite private wells. Although past reports cite no known impacts of the airport's groundwater to the Kensico Reservoir system, it is imperative that the current contamination underlying the airport be addressed to ensure protection of the Reservoir and offsite receptors, as well as the protection of the Blind Brook, which flows to the Long Island Sound. Therefore, recommendations for the next master plan include the following:

1. The airport should continue with the current groundwater sampling program onsite at an appropriate frequency (e.g., semi-annual). Offsite sampling locations should be added to determine the extent and migration of any contamination. The program should include evaluation of groundwater cleanup or containment measures to protect the reservoir and offsite receptors. As part of this monitoring, the airport should also monitor state, federal, and NYC environmental authorities' lists of new emerging pollutants and update the airport's list of monitoring parameters. Emerging contaminants not detected at the airport need not be monitored as frequently, but given the airport's sensitive setting adjacent to a critical public water supply, the airport should be proactive in identifying and monitoring for these contaminants in advance of regulators' directives to do so.
2. The airport should move ahead expeditiously with the Brownfield Cleanup Program initiated with the DEC in 2020. These investigations and cleanup plans should include removal of source areas (such as contaminated soils and groundwater from the burn pit and the spill sites at some hangars). Any space planning for the airport should allow for equipment or treatment systems needed to address site contamination.
3. The airport should ensure there is coordination with appropriate health departments to contact current owners of potable wells within the zone of influence of the contaminated airport groundwater flow to ensure sampling for PFAS and other contaminants, as appropriate. The airport should work with the health departments and state environmental agencies to ensure no new potable wells are installed or that, at a minimum, wells are installed with proper point-of-use treatment units. This information should also be shared with local land use planning authorities. (See recommendation about developing comprehensive environmental assessment guidance in the air pollution recommendations.)