



Department of  
Environmental  
Conservation

Department  
of Health

# Hoosick Area Cleanup

## INFORMATIONAL UPDATE

October 23, 2019



# **Hoosick Falls and Petersburg Area PFOA Biomonitoring: Group-Level Results for Round 2**

**October 2019**

# Presentation Outline

- Background on blood testing timeframes and participant numbers
- Round 2 results
- Round 2 compared to Round 1
- Next steps

# Background

## Background – Hoosick Falls/Petersburgh Biomonitoring

- Round 1 testing took place from February – November 2016
  - 3,411 individuals were tested for PFOA
- Round 2 testing took place from June, 2018 – March, 2019
  - 685 individuals were tested for 6 PFAS
    - PFOA
    - PFOS
    - PFHxS
    - PFNA
    - PFHpA
    - PFBuS

## Background – Hoosick Falls/Petersburgh Biomonitoring

- Of the 685 individuals tested in Round 2
  - 332 currently on Hoosick Falls public water
  - 353 not currently on Hoosick Falls public water
- 337 on Hoosick Falls public water in Round 1
- 291 not on Hoosick Falls public water in Round 1
- 57 did not participate in Round 1

# Results

## Results: Round 2 PFAS blood levels

<b>Table 1</b> <b>Round 2 PFAS blood levels for participants served by Village of Hoosick Falls public water (N=337), and,</b> <b>For comparison, the general U.S. Population age 12 and up</b>							
TYPE OF PFAS	Participants served by Hoosick Falls public water			U.S. population 2015-2016		U.S. population 1999-2000	
	% of samples with PFAS detected	Geometric mean (mcg/L)	95 <sup>th</sup> percentile (mcg/L)	Geometric mean (mcg/L)	95 <sup>th</sup> percentile (mcg/L)	Geometric mean (mcg/L)	95 <sup>th</sup> percentile (mcg/L)
PFBuS	0%	*	**	*	**	*	**
PFHpA	0.3%	*	**	*	0.20	*	0.70
PFHxS	88%	1.1	3.0	1.18	4.90	2.13	8.70
PFNA	61%	0.6	1.4	0.58	1.90	0.55	1.80
PFOA	99%	37.5	166.0	1.56	4.17	5.21	11.9
PFOS	99%	4.8	14.4	4.72	18.3	30.4	75.7



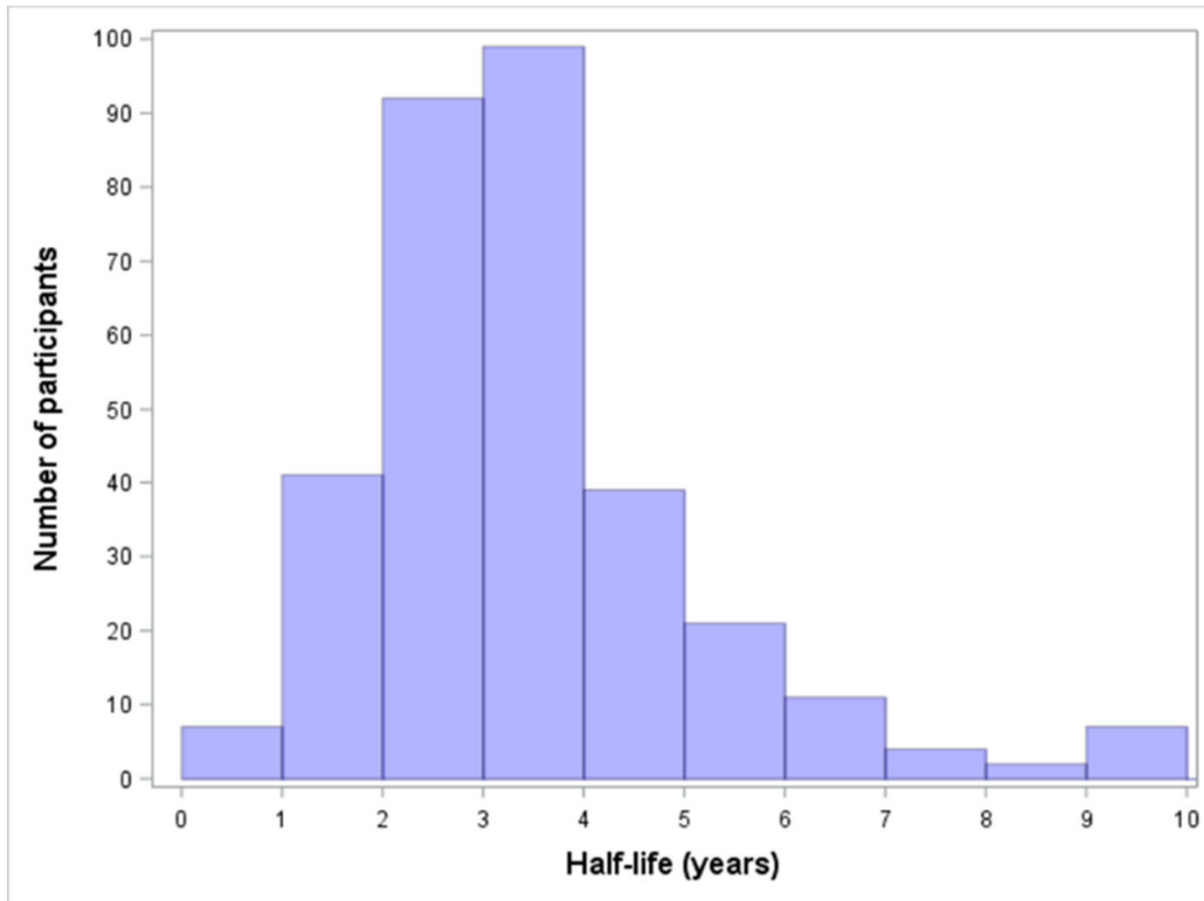
## Results: PFOA reductions and half-life

**Table 2**  
**PFOA blood levels for participants tested in both Rounds 1 and 2,**  
**by drinking water source\***

	Participants served by Hoosick Falls public water (N=328)	Participants <u>not</u> served by Hoosick Falls public water (N=216)
Round 1 PFOA geometric mean	75.0 mcg/L	25.0 mcg/L
Round 2 PFOA geometric mean	40.0 mcg/L	15.2 mcg/L
Percent reduction, 50 <sup>th</sup> percentile	42%	37%
Estimated half-life, 50 <sup>th</sup> percentile	3.2 years	3.6 years

\*Half-life estimates were calculated for participants whose Round 1 and Round 2 tests both exceeded the 2015-2016 NHANES 95<sup>th</sup> percentile PFOA level of 4.17 mcg/L.

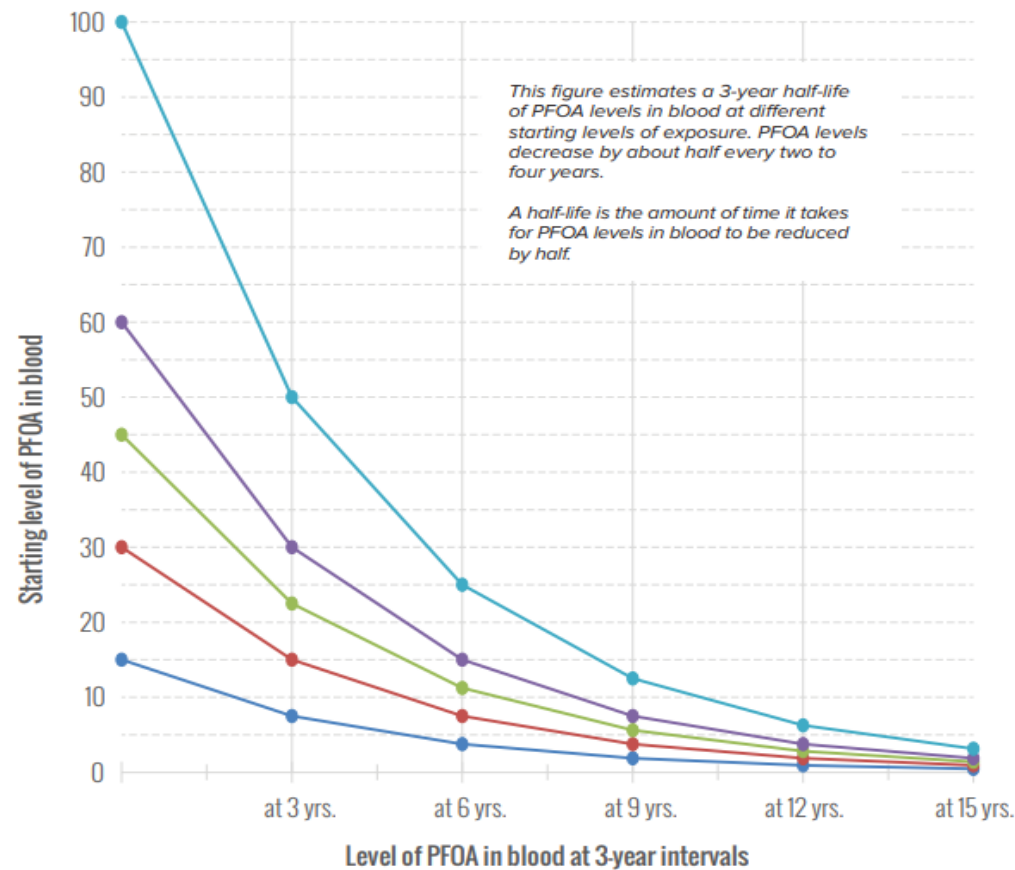
# Distribution of half-life estimates



# Estimated half-lives by age and gender

Table 3		
Estimated blood PFOA half-lives, by age and gender (N=544)		
	Number of participants	Half-Life in Years
		50 <sup>th</sup> percentile
Age Group		
0-17 years	38	2.2
18-39 years	54	2.7
40-59 years	159	3.3
60 and older	293	3.6
Gender		
Female	282	3.1
Male	262	3.6

# How Long it Might Take for PFOA Blood Levels to Decline



**Assumes 3- year half-life  
(Micrograms per Liter)**

Bartell SM, Calafat AM, Lyu C, et al. 2010. Rate of decline in serum PFOA concentrations after granular activated carbon filtration at two public water systems in Ohio and West Virginia. Environ Health Perspect. 118(2):222-8

# Conclusion

## Summary

- Almost all participants with elevated PFOA blood levels saw their levels decline.
- For participants in both rounds, served by Hoosick Falls public water:
  - Percentage reduction: 42% decline in PFOA levels
  - Half-life: estimated 3.2 year half life (middle level)
- Levels of the other 5 PFAS measured were similar to general U.S. population levels.

# Next Steps

# Multi-Site PFAS Health Study

- Collaboration with the University at Albany School of Public Health
- Federally-funded by the Centers for Disease Control
- Six other states and universities also funded
- Combined “core” study of PFAS exposures and potential health effects
- Year 1: study planning and community input





# HOOSICK FALLS COMMUNITY UPDATE

OCTOBER 2019



**Honeywell**

# AGENDA

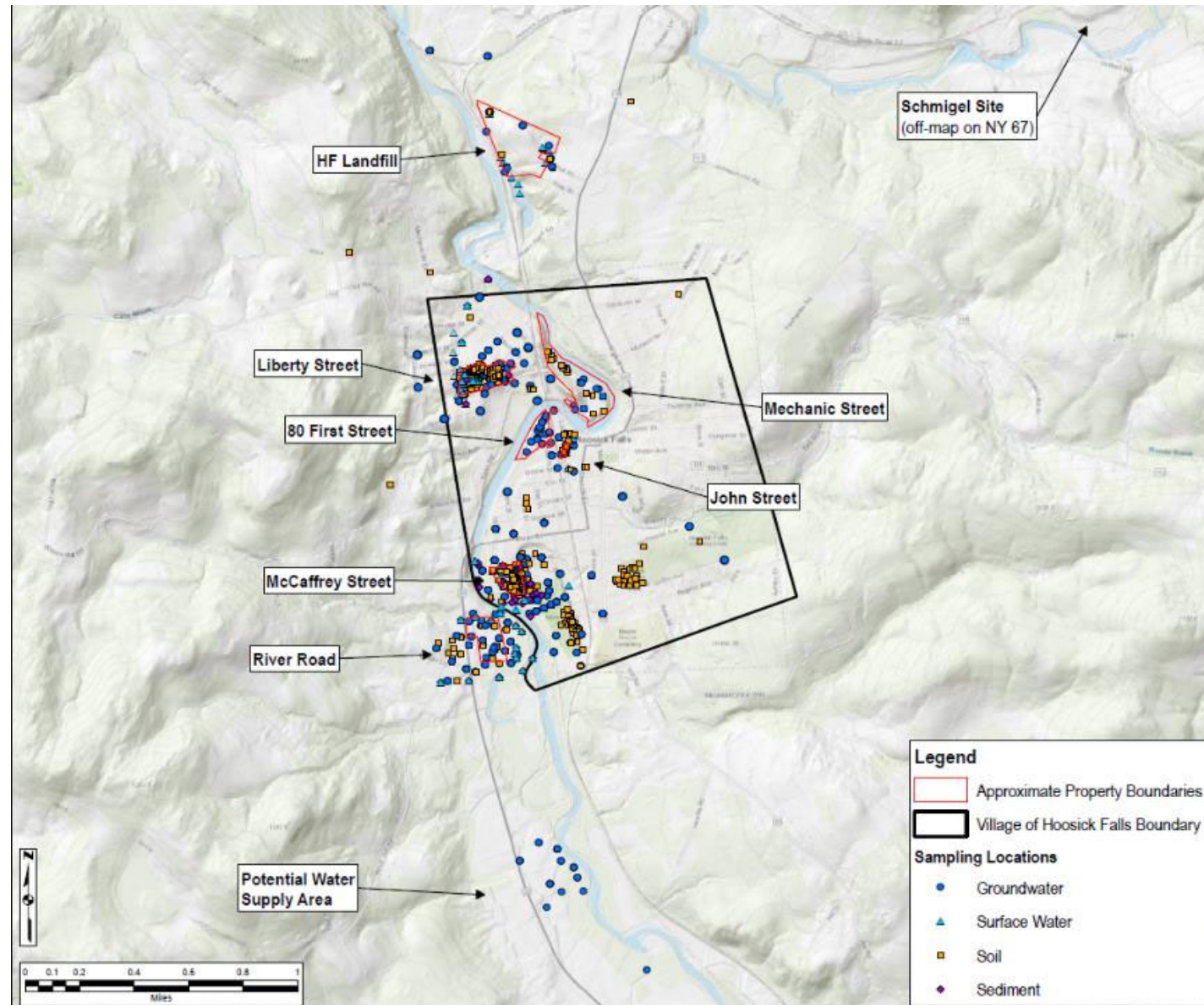
1. Investigation Update
2. Interim Remedial Action  
McCaffrey Street
3. Municipal Water Supply Study  
Background  
Five Options





# INVESTIGATION SUMMARY

Location of Sites and sampling locations at those Sites



# HOOSICK FALLS ACTIONS

◆ NYSDEC Orders for McCaffrey, Liberty, John, River Rd (6/2016)

◆ NYSDEC Orders for Mechanic St (10/2017) and 80 First St (8/2017)

2016				2017				2018				2019					
1Q & 2Q		3Q & 4Q		1Q & 2Q		3Q & 4Q		1Q & 2Q		3Q & 4Q		1Q & 2Q		3Q & 4Q			
Bottled water program																	
Interim GAC System Operational (NYSDOH declares PFOA non-detect 3/30/16)				Full Capacity System Operational				315 million gallons filtered to-date									
WATER SUPPLY STUDY Starts Q1 2016				Draft 1 Sent    DEC Comments				Draft 2 Sent    DEC Comments		Groundwater Resource Investigation				Draft 3 Sent    Final Sent			
McCAFFREY STREET				Investigation, Interim Remedy, and ongoing monitoring				Conceptual Plan and Testing				Revised Plan Submitted and Approved				Construction & Implementation	
LIBERTY STREET				Investigation and ongoing monitoring				Interim PFAS remedy design and future construction									
JOHN STREET				Investigation, VOC, mitigation and monitoring, interim remedy design and construction													
RIVER ROAD				Investigation													
MECHANIC STREET Sampling								MECHANIC STREET    Investigation									
80 FIRST STREET				Investigation and interim soil remedy for metals													
SCHMIGEL Sampling								SCHMIGEL Sampling						SCHMIGEL Sampling			
								Regional Air Deposition Study - planning and sampling									

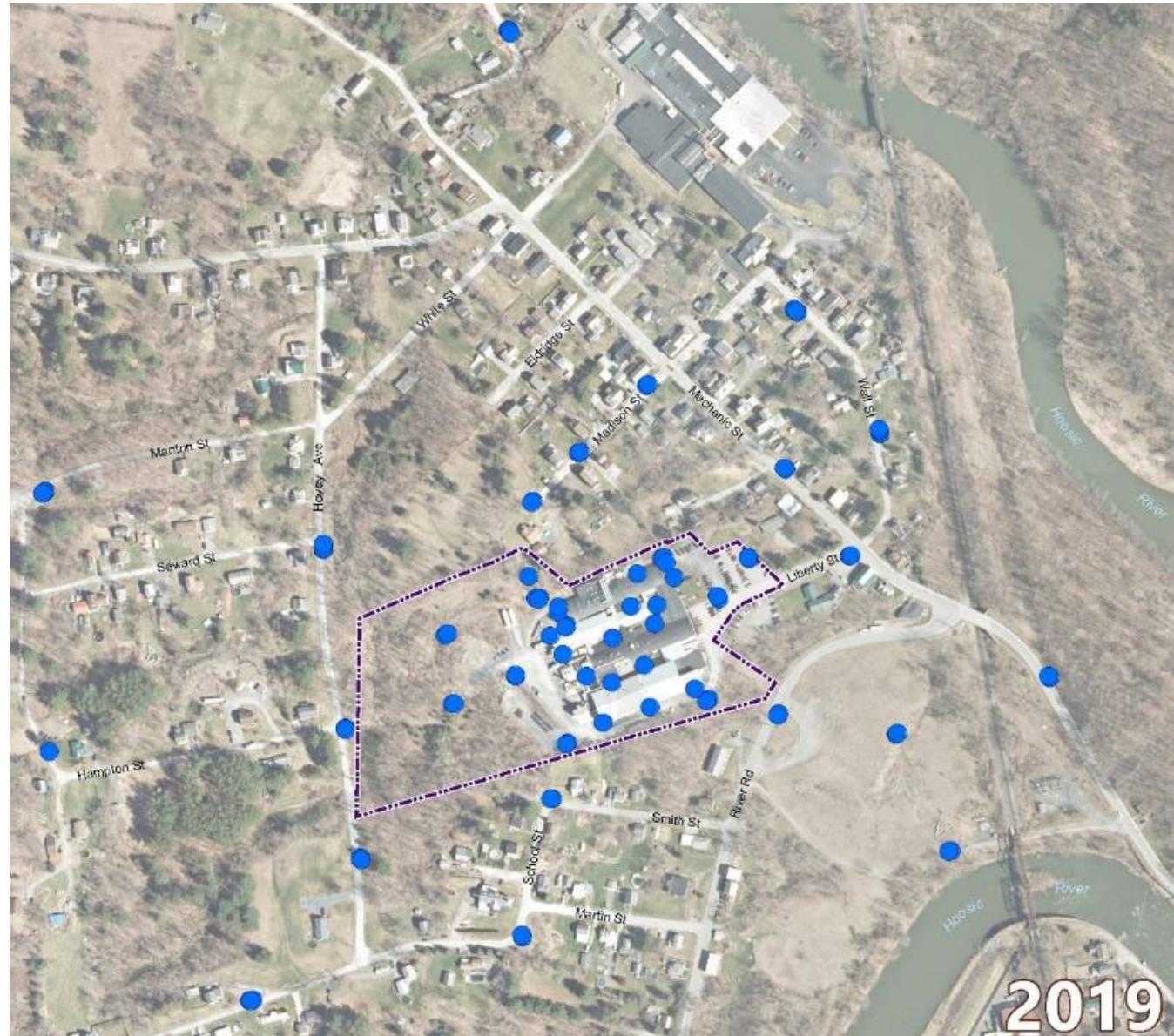


# **LIBERTY STREET AND McCAFFREY STREET UPDATE**



# LIBERTY STREET SITE REMEDIAL INVESTIGATION

- Investigation began in 2016
- 11 approved work plans
- >1,100 lab samples
- 84 monitoring wells  
(24 installed in 2019)
- Soil sampling at 186 locations
- Sediment/surface water at  
45 locations
- Pre-Design Investigation (PDI)  
Work Plan for IRM submitted to  
NYSDEC for review



# VILLAGE OF HOOSICK FALLS REGIONAL AIR DEPOSITION STUDY

**Objective:** Determine if potential impacts from PFAS air deposition are observable in representative soils surrounding the Village of Hoosick Falls.

## Sampling Locations

- 61 locations proposed within 16 sectors
- Systematically vetted to meet the following criteria:
  - Undisturbed for past 60 years;
  - Outside Village water supply;
  - Outside limits of floodplain or wetland;
  - Sufficient soil thickness; and
  - Clear land ownership and ability to obtain access.

## Sample Design

- Soil Samples from 3 intervals (up to 183 samples)
- Samples collected with hand auger



Work Plan Approval  
(9/3/19)

Site Access and Reconnaissance  
w/NYSDEC Began  
(9/23/19)

Sample Location Vetting

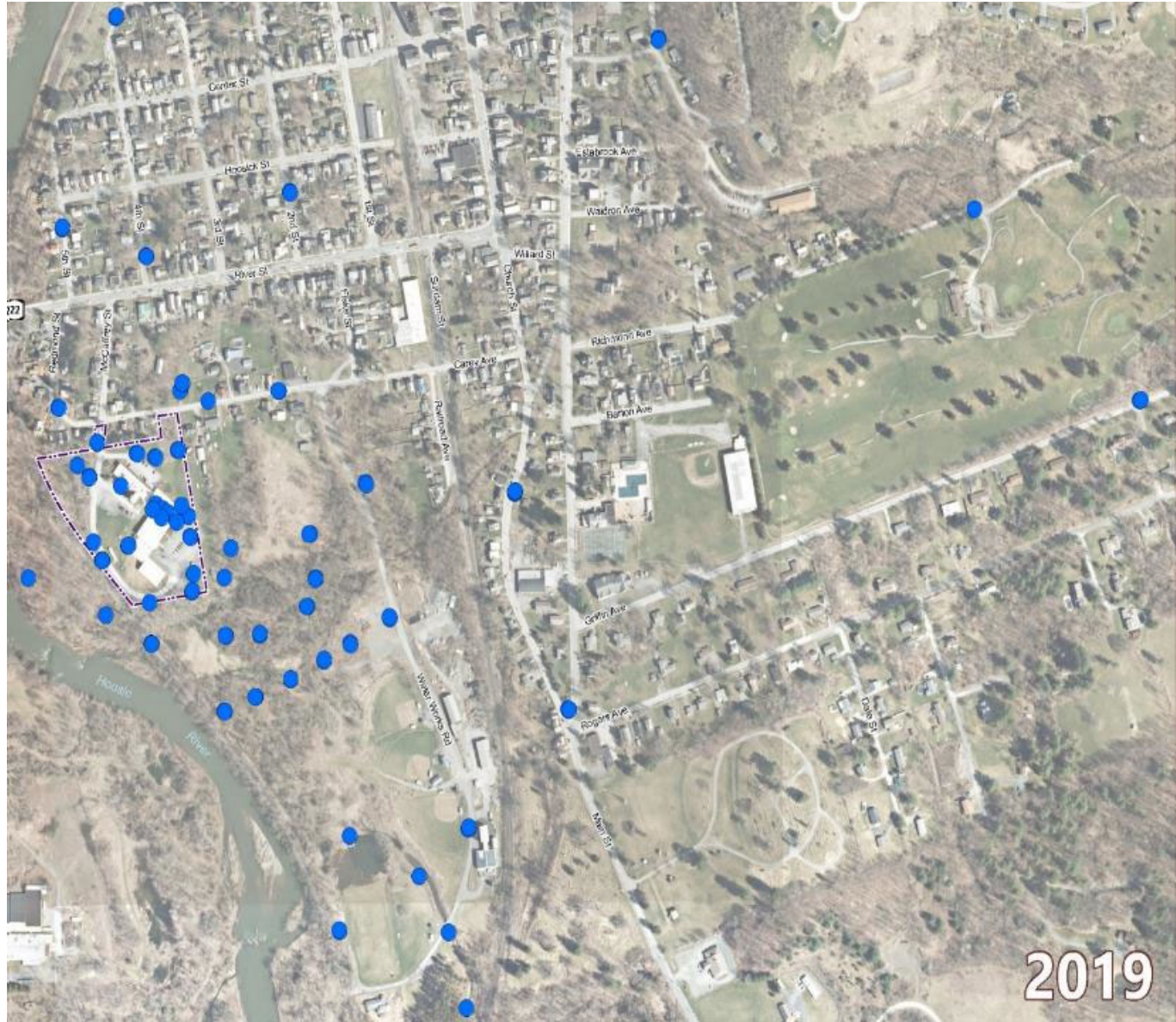
Sampling Began  
(10/9/19)





# McCAFFREY STREET SITE REMEDIAL INVESTIGATION

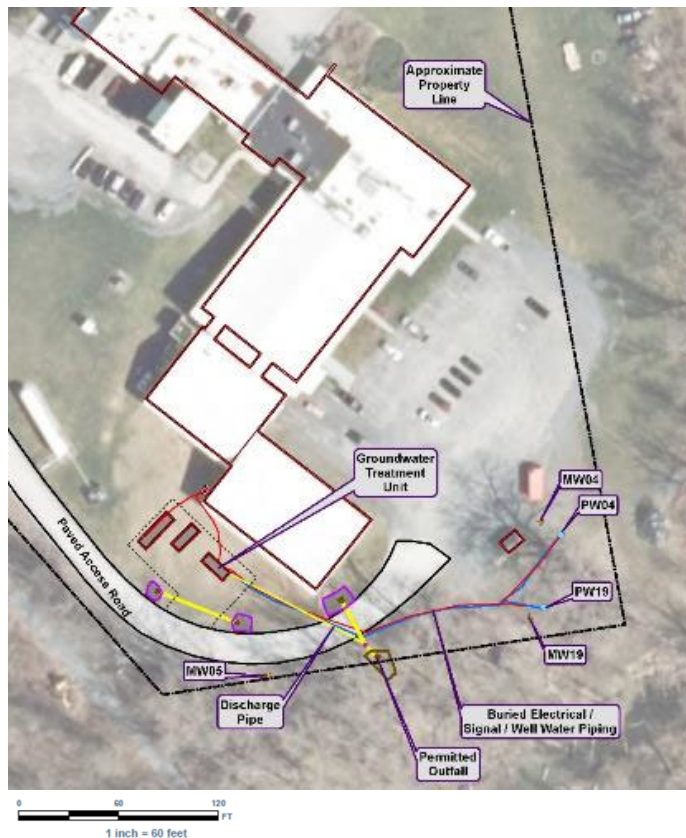
- Investigation began in 2015
- 13 approved work plans
- >1,100 lab samples
- 99 monitoring wells (10 installed in 2019)
- Soil sampling at 111 locations
- Sediment/surface water at 22 locations
- Groundwater Capture and Treatment Interim Remedial Measure (IRM) (start-up August 2019)



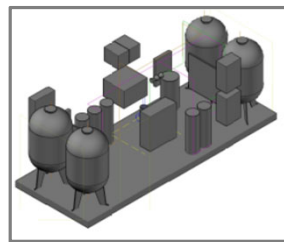


# McCAFFREY STREET SITE

## INTERIM REMEDIAL MEASURE: GROUNDWATER CAPTURE AND TREAT



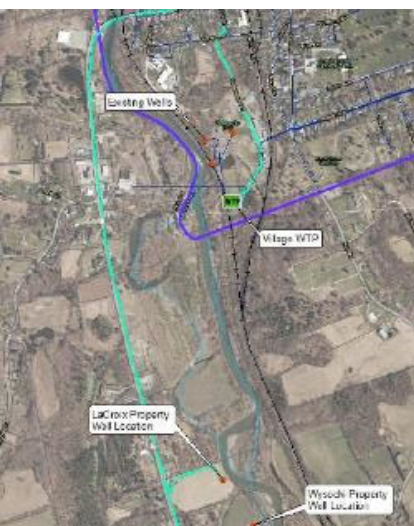
- Ongoing operation began in August 2019
- Captures and treats groundwater from eastern and southern portions of the site
- Treated water is discharged to surface water per NYSDEC permit
  - PFAS non-detect in all discharge samples
- Routine monitoring via site inspections and remote telemetry with monthly sampling per NYSDEC permit



3D Rendering of  
Treatment System



Granular Activated  
Carbon Vessels



# MUNICIPAL WATER SUPPLY STUDY

# **MUNICIPAL WATER SUPPLY STUDY PURPOSE**

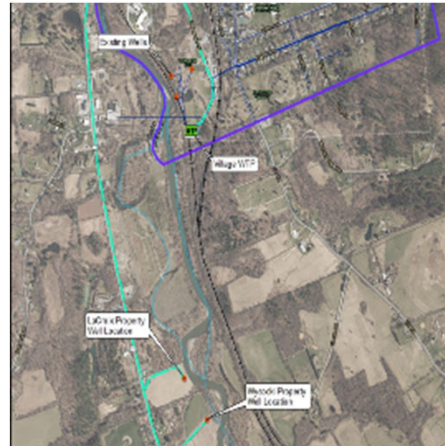
**Evaluate drinking water source options that are:**

- Safe: Based on Department of Health water supply requirements
- Viable: Can meet current and future capacity
- Reliable: Will provide consistent quality

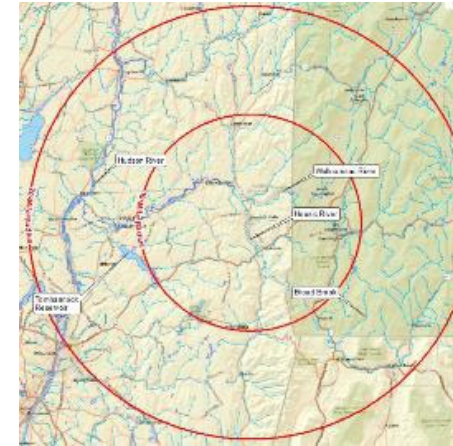


# WATER SUPPLY STUDY

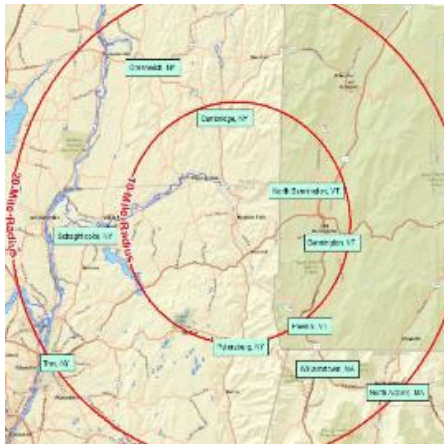
## FIVE OPTIONS



**1.  
New  
Groundwater  
Source**



**2.  
New  
Surface  
Water  
Source**



**3.  
Interconnect  
with Existing  
Water  
Supply**

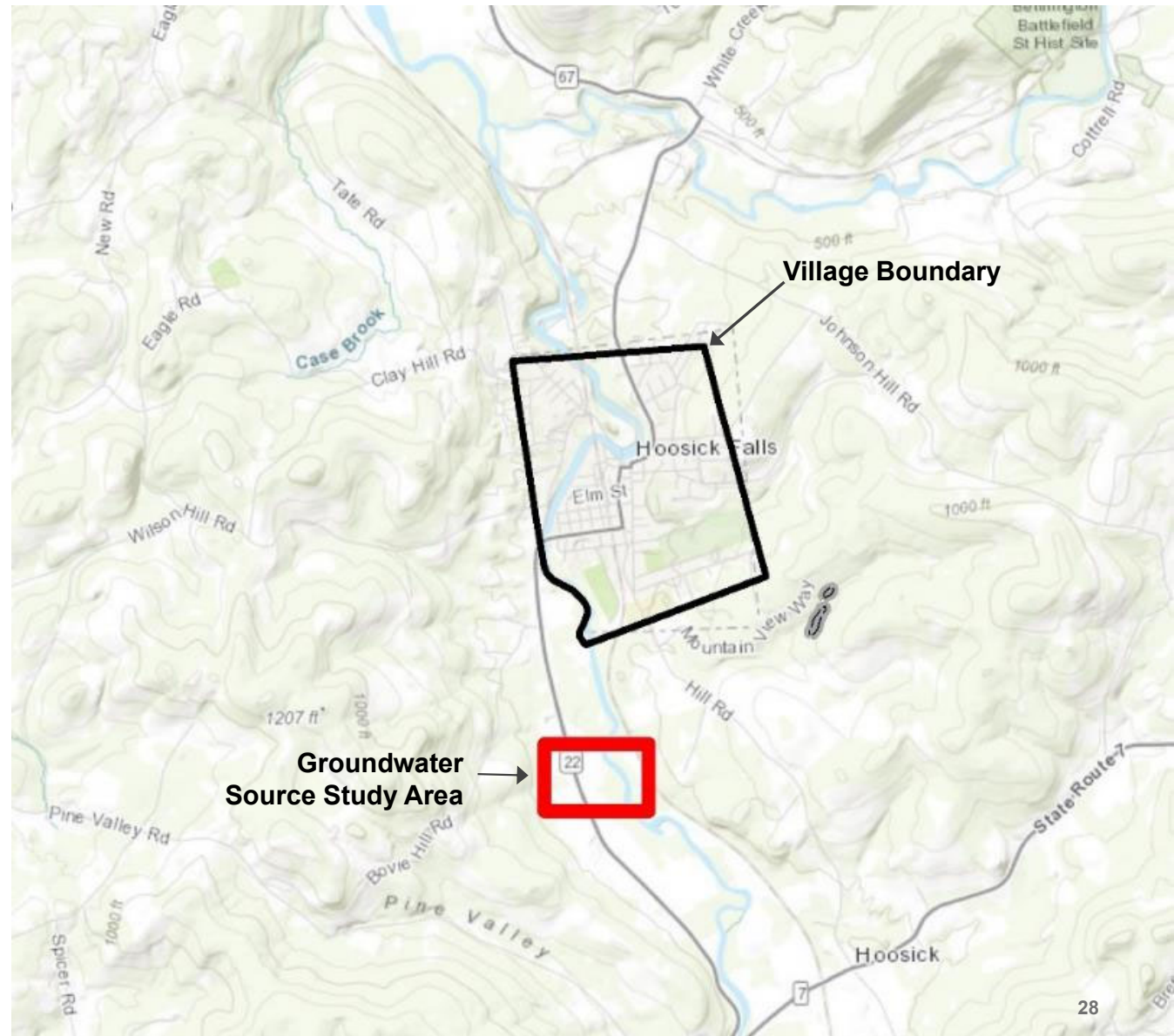


**4.  
Continued  
Use of Supply  
Wells with  
Treatment by  
Full Capacity  
GAC System**



**5.  
Option 4  
plus PFOA  
Remediation  
IRM at  
McCaffrey  
St.**

# 1. NEW GROUNDWATER SOURCE

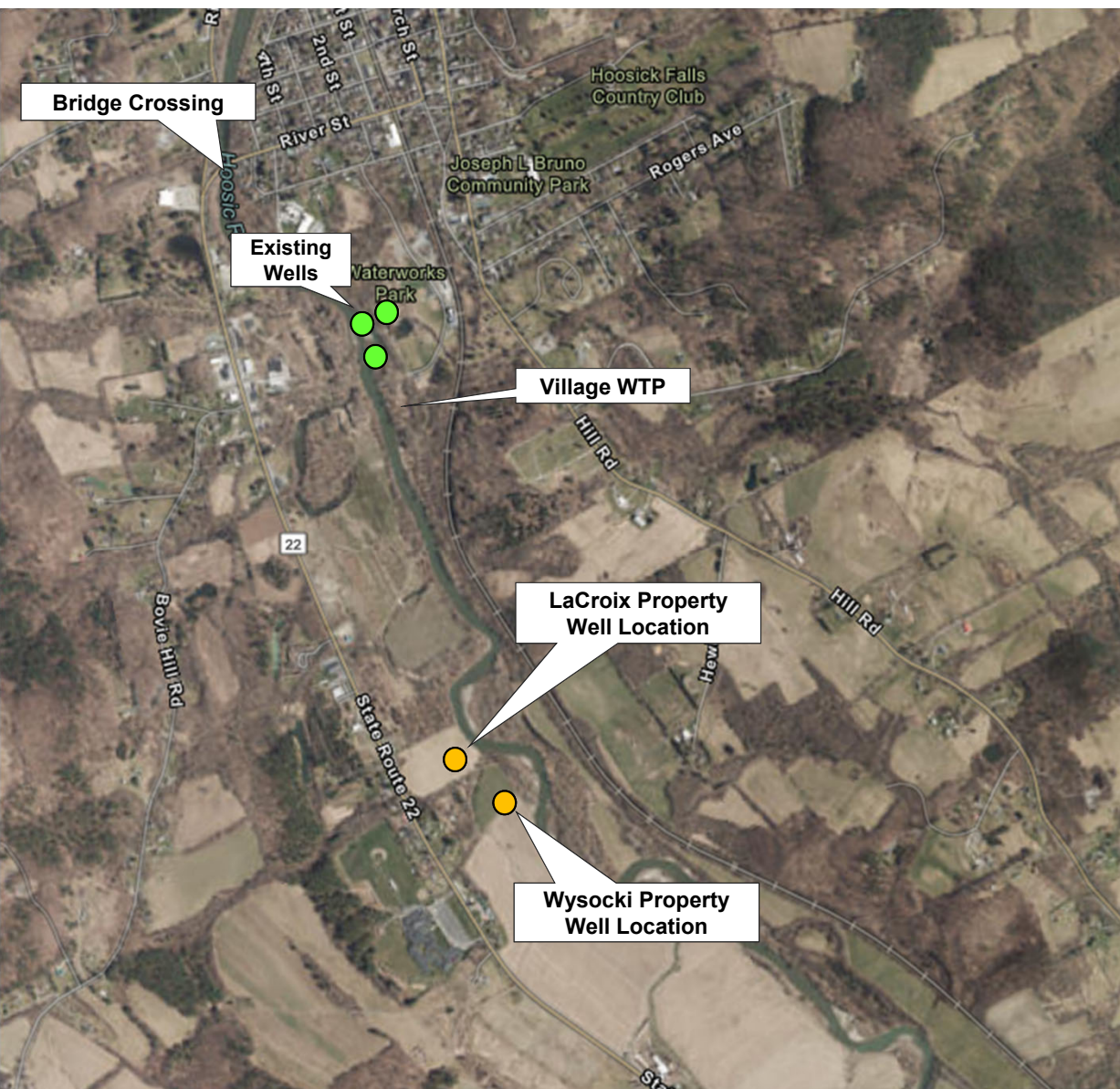




# OPTION 1: NEW GROUNDWATER SOURCE

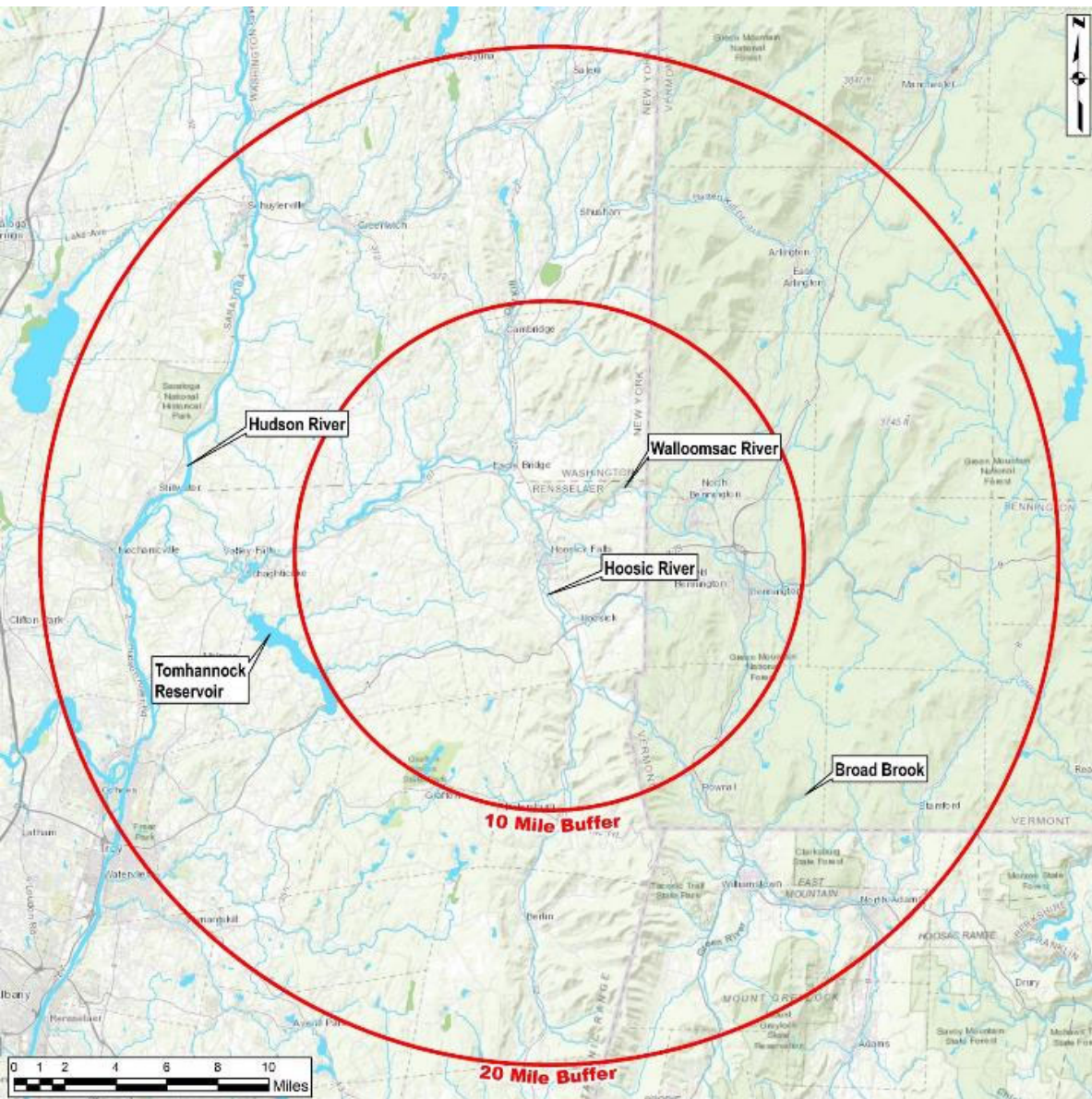


- Two new groundwater production wells
- Infrastructure needed
  - Water transmission line to the Village's Water Treatment Plant (WTP)
  - Maintenance of well #7
- Local treatment of naturally occurring substances
- Maintain existing Granulated Active Carbon (GAC) treatment system
- PFOA detected at ND – 38 ppt
- PFAS detected at ND – 83 ppt



# **OPTION 1: NEW GROUNDWATER SOURCE ROUTE**



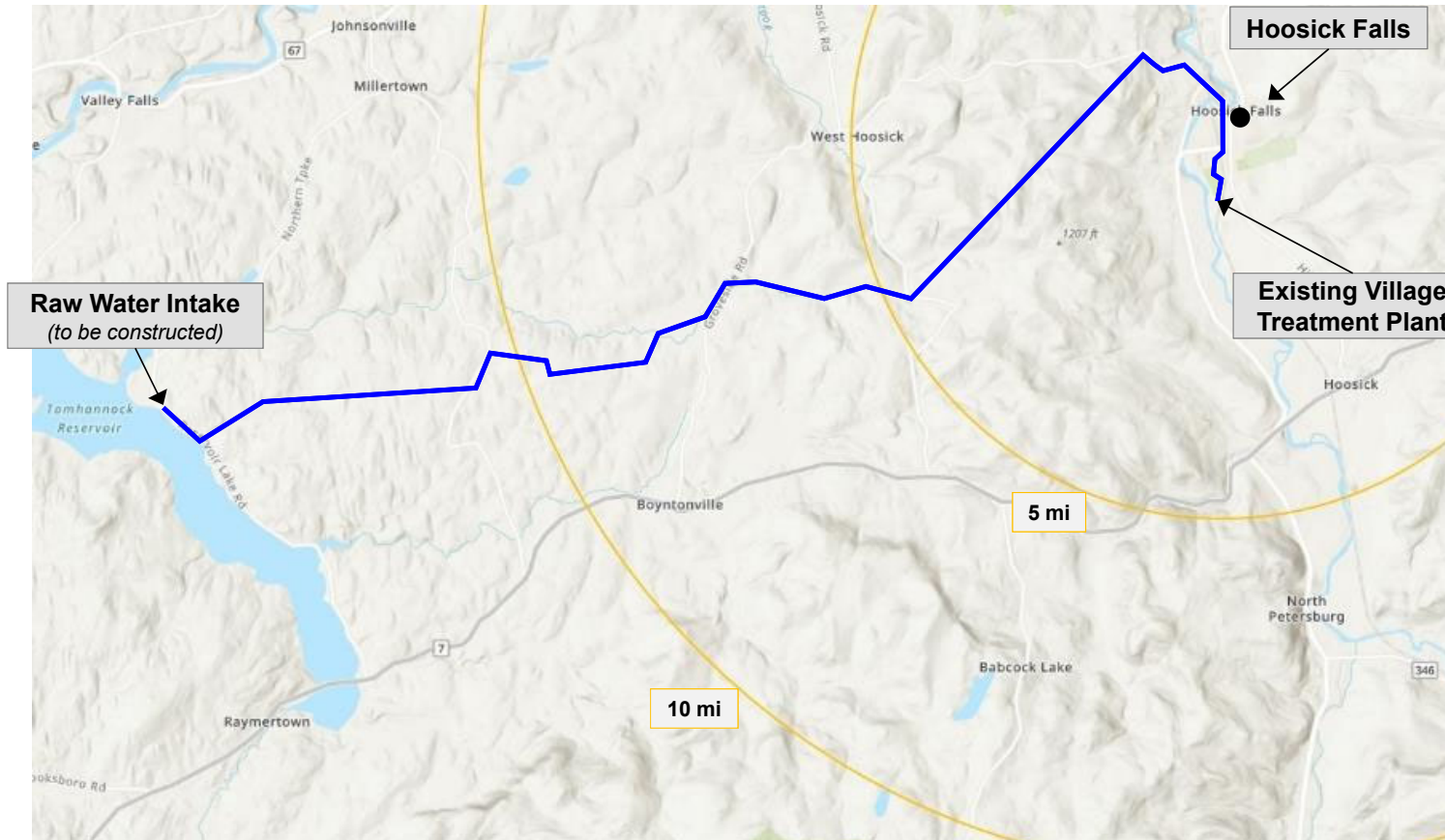


## 2. NEW SURFACE WATER SOURCE



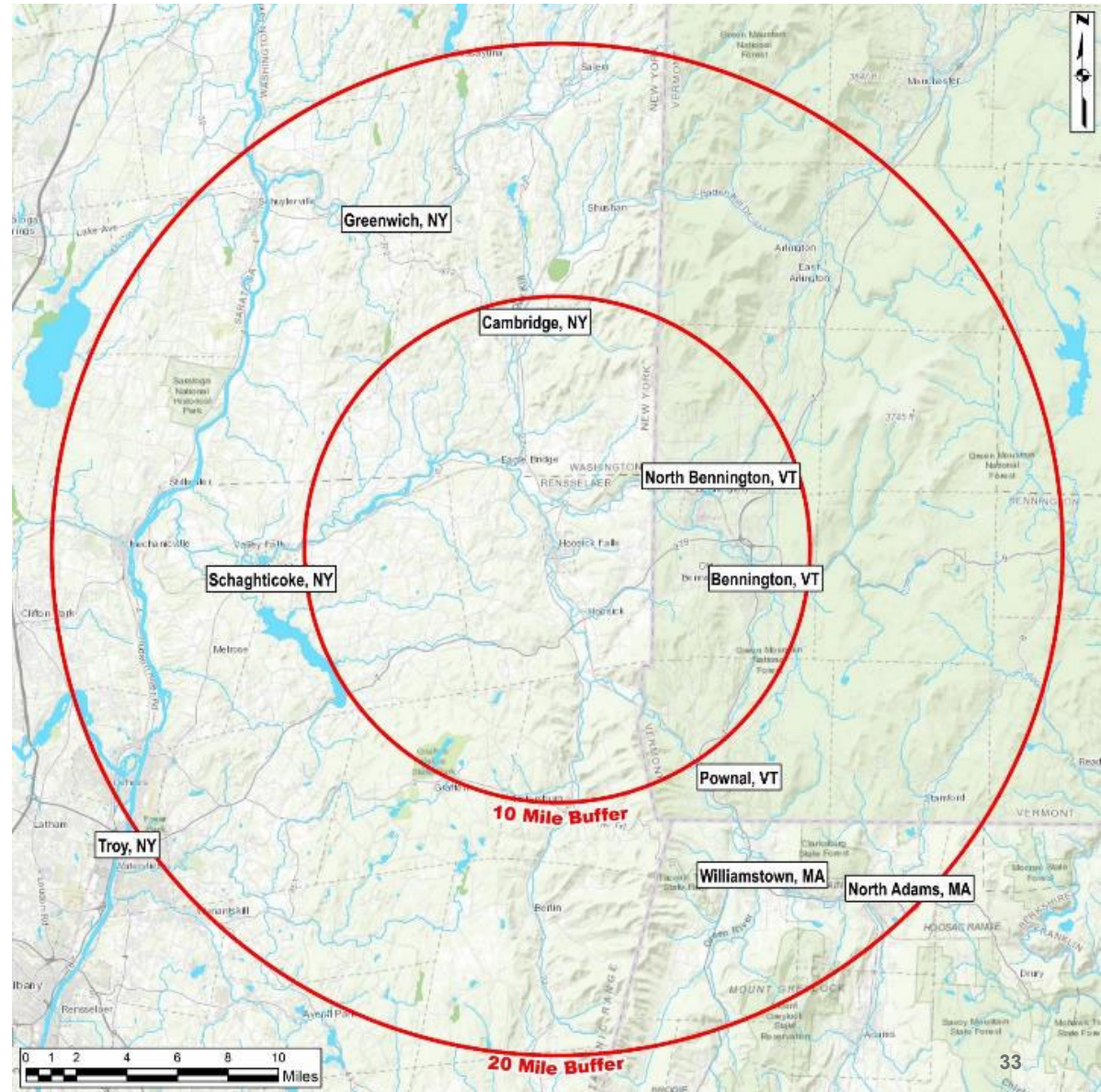
# OPTION 2: TOMHANNOCK ANTICIPATED TRANSMISSION LINE ROUTE

13.4 Miles

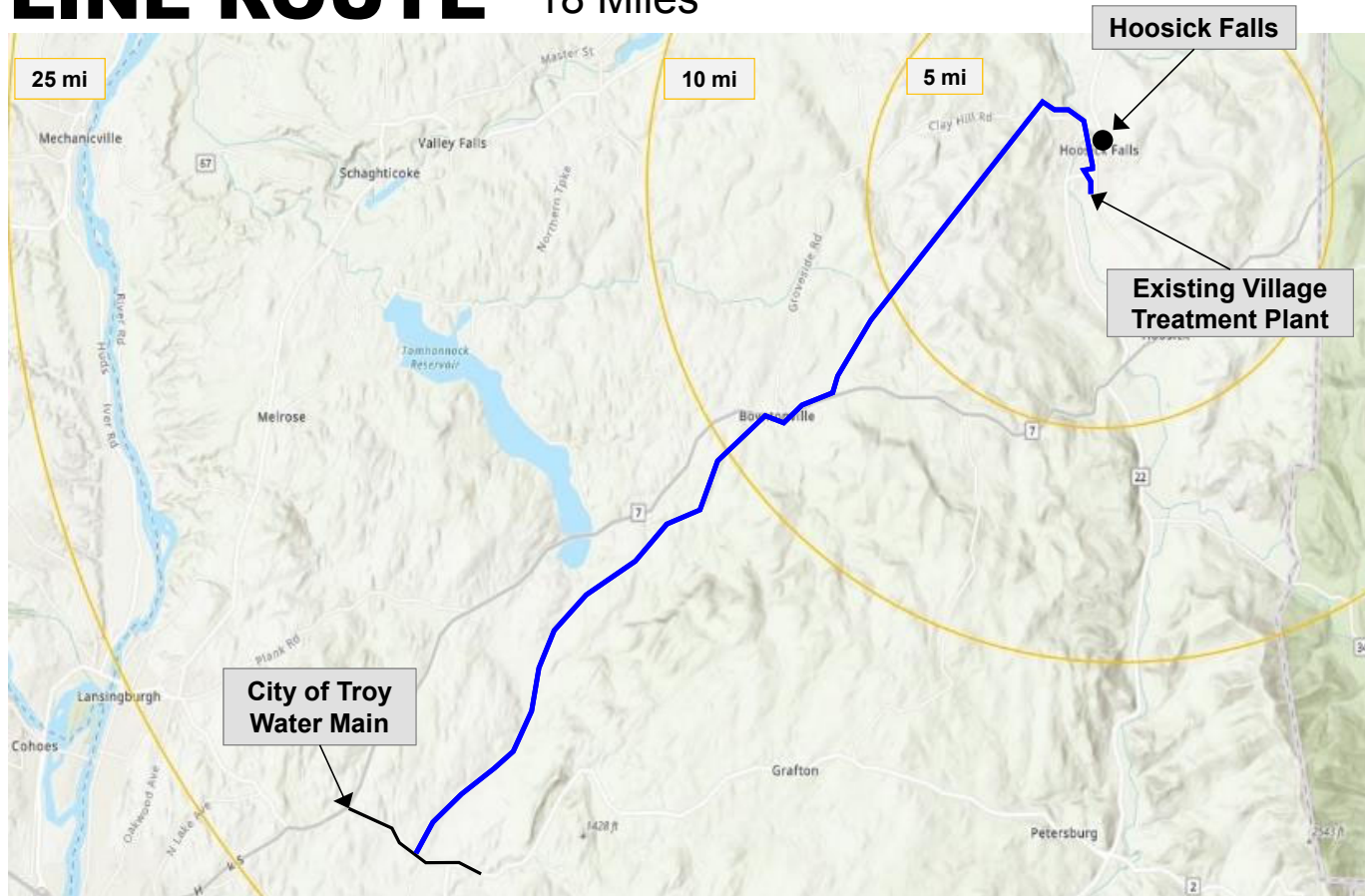


- Potential sources evaluated
  - Hoosic River
  - Walloomsac River
  - Tomhannock Reservoir
  - Hudson River
  - Broad Brook (MA)
- Tomhannock & Hudson have sufficient capacity
- Tomhannock is closer; therefore retained for further evaluation
- Detections
  - PFOA at 1.6 – 2.5 ppt
  - PFAS at 3.7 – 37.4 ppt

### 3. INTERCONNECT WITH EXISTING WATER SUPPLY



# OPTION 3: TROY ANTICIPATED TRANSMISSION LINE ROUTE 18 Miles



- 14 sources evaluated
  - From Hudson River to nearest communities in Vermont and Massachusetts
- Most too small to serve Village needs
- City of Troy retained for further evaluation





## **4. CONTINUED USE OF SUPPLY WELLS WITH TREATMENT BY FULL CAPACITY GAC SYSTEM**

## 5. OPTION 4 PLUS PFOA REMEDIATION

Includes Option 4, plus  
McCaffrey Street IRM that:

- Pumps groundwater from two extraction wells
- Treats that water with GAC and discharges it to Hoosic River
- Captures groundwater in eastern and southern portions of McCaffrey Street site



# COST AND ESTIMATED CONSTRUCTION TIME

Options	Title	Estimated Cost	Estimated Construction (years)
1	New Groundwater Source	\$ 6.9 M	2 - 3
2	New Surface Water Source	\$ 34.4 M	4 - 5
3	Interconnection with an Existing Public Water Supply	\$ 48.5 M	5 - 6
4	Continued Use of Public Supply Wells #3 and #7 with Treatment through Full Capacity GAC System	\$ 6.3 M*	0
5	Continued Use of Public Supply Wells #3 and #7 with Treatment through Full Capacity GAC System and PFOA Remediation through the McCaffrey Street IRM	\$ 10.1M*	0

*\*systems already constructed*



# SUMMARY

**NYSDEC's process includes evaluation against eight criteria**

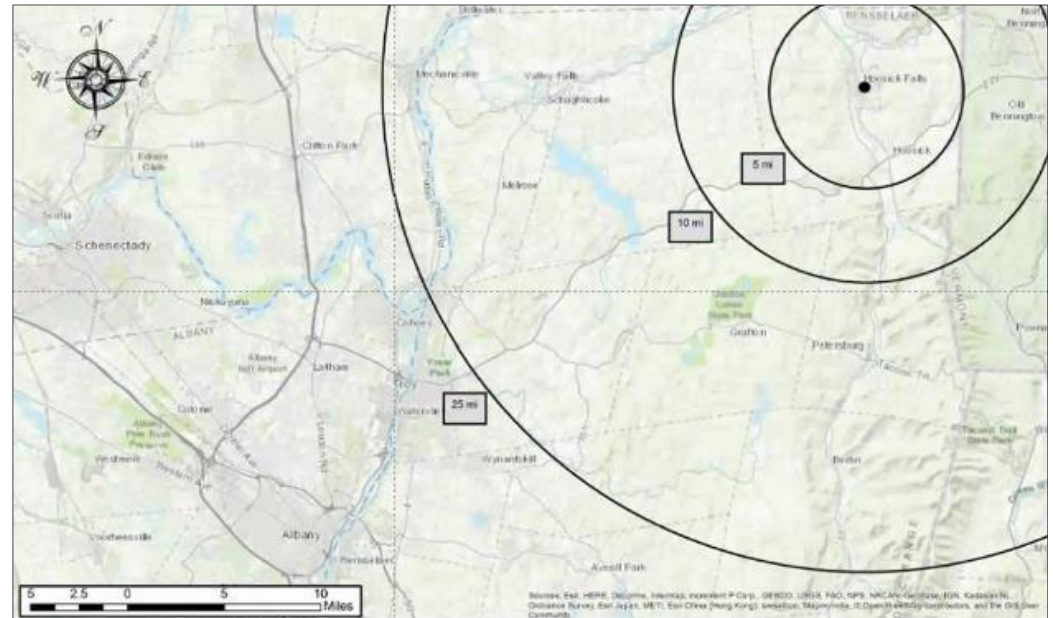
**All options satisfy threshold criteria**

- Compliance with applicable standards, criteria, and guidance

**Options vary with respect to “balancing” criteria**

**Community acceptance to be evaluated by NYSDEC**

**Comparative analysis of options to inform NYSDEC proposed option**



## NEXT STEPS

- Receive comments through November 18th
- DEC to provide technical comments to the RPs
- DEC will evaluate all comments to determine the appropriate next steps leading to a final decision

***No option will be selected by the State without soliciting additional input from the community***



Department of  
Environmental  
Conservation



## Contact Us

**Municipal Water Supply Study Comments:**

**[HoosickWaterSupply@dec.ny.gov](mailto:HoosickWaterSupply@dec.ny.gov)**



**Department of  
Environmental  
Conservation**