

# SANDY CREEKS 9 ELEMENT WATERSHED PLAN



## Sampling and data analysis



### LAB ANALYSIS

Individual water samples (85) were collected across 14 sites throughout the Sandy Creeks watershed in 2023. Samples were analyzed at Upstate Freshwater Institute's (UFI) ELAP-certified lab and NYS DEC approved the use of the data. UFI then applied the data to a widely used computerized watershed model.

The watershed model uses real-world data and known equations and values, such as runoff coefficients, to calculate nutrient levels based on local weather patterns. Default model inputs are adjusted by the watershed modeler so that nutrient levels predicted align with known levels from sampling events during model calibration.

### NEXT STEPS

Now that this baseline watershed model is calibrated, modelers can begin work on the scenarios discussed at the March 2024 stakeholder meeting. Models are run at the HUC12 scale and will focus on evaluating total phosphorous (TP) as it is the limiting nutrient in freshwater systems.

#### Scenario #1: Climate change

*How would a 10% increase in precipitation by 2050 impact TP loading from each watershed?*

Based on climate change projection of maximum greenhouse gas emissions before 2050, with decline and stabilization by 2100 (as predicted by the RCP4.5 climate model)

#### Scenario #2: NY Phosphorus Index 2.0

*How would a reduction in manure spreading in flood-prone areas of HUC12s impact TP loading from each watershed?*

NY Phosphorus Index 2.0 is a field-based evaluation tool to determine manure spreading feasibility - scenario evaluates a reduction in manure spreading in 17% of ag land for each HUC12 sub-watershed.

#### Scenario #3: Increased watershed development

*How might an increase in low-density, mixed-use development influence TP loading from each watershed?*

Includes the conversion of 20% ag land to low-density development (solar farms, housing, etc.) in watersheds that are >50% ag OR a 20% conversion of forested land in forest-dominated watersheds.

#### Scenario #4: Septic system mitigation

*How would a community sewer system in the North Sandy Pond area impact TP loading from sub-watersheds?*

Scenario would evaluate removal of septic systems from the HUC 12 sub-watershed draining North Sandy Pond, resulting in ability to calculate and evaluate per-system TP reduction rates.

#### Scenario #5: Reforestation of ag land

*How would the conversion of existing ag land to forests influence TP loading from each watershed?*

Utilizes the ag land retirement Best Management Practice (BMP) to convert 10% of total ag land (5% hay/pasture, 5% cropland) to forestland.

### NEXT STEPS

#### Modeling Scenarios

- Increased precipitation due to climate change
- Reduced manure spreading
- Increased development
- Impacts of sewer system installation (Sandy Pond subwatershed only)
- Conversion of fallow ag land to forest

#### Write 9E Plan

- Results of modeling scenarios will provide recommendations
- Draft 9E released for public comment

#### Submit plan to NYS DEC

- Goal: March 2026

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