



**NYSERDA**

# **Field Sampling and Dose Assessment in Support of the 2014 Aerial Radiation Survey**

**November 18, 2015**

## Overview

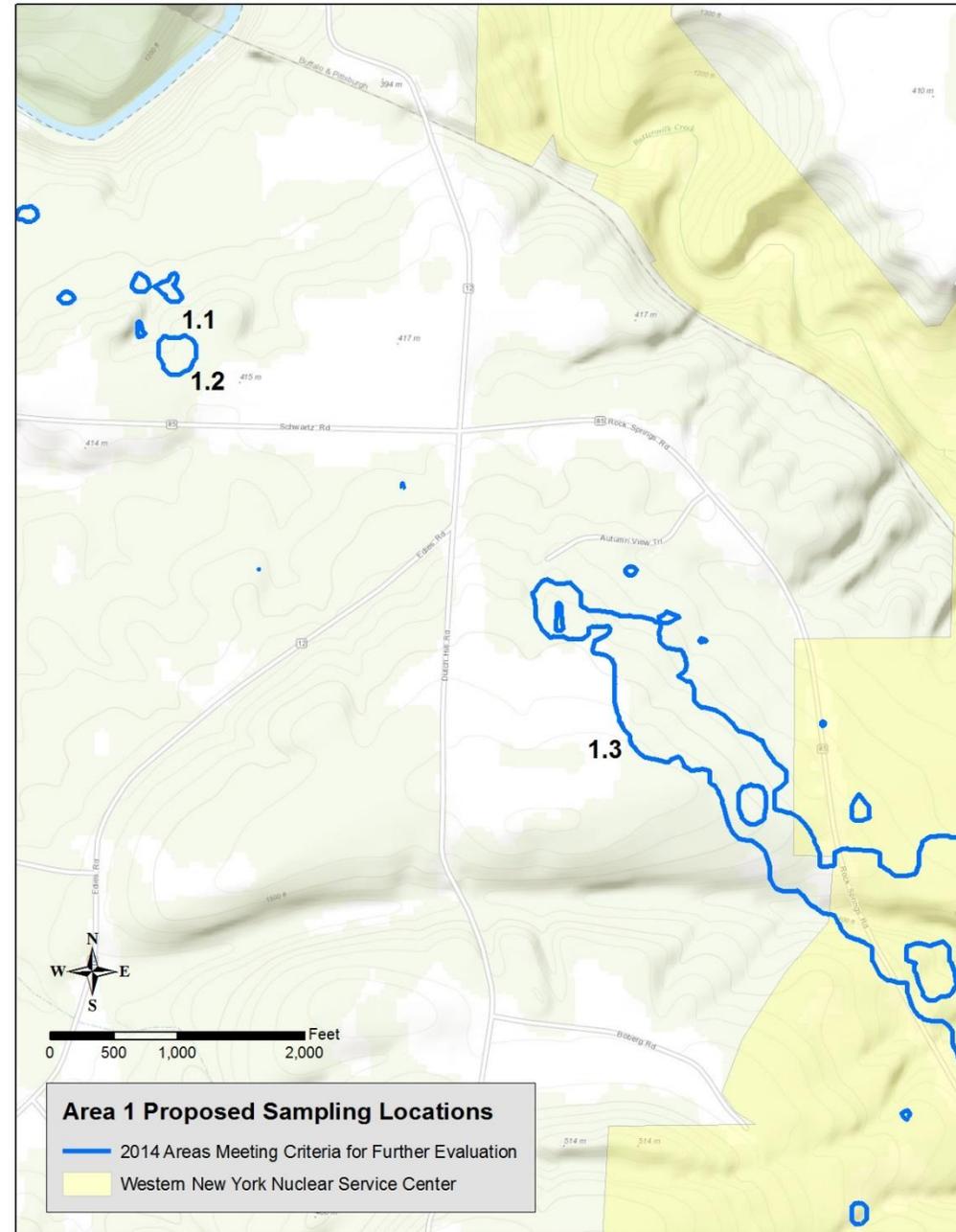
- **RSL's presentation this evening identified the four criteria (or filters) used to identify areas where follow-up ground surveys and soil sampling activities were recommended.**
- **Based on the four criteria, there were five Off-Center areas identified for follow-up ground surveys and soil sampling.**
- **Two of the areas were identified in previous aerial surveys; two of the three new locations were in areas where there was no historic aerial radiation data available.**

## Property Owner Outreach Process

- **NYSERDA met with property owners to seek permission to enter their property to conduct follow-up survey and sampling activities. NYSERDA also provided the property owners with additional information detailing the proposed sampling activities.**
- **Two property owners declined NYSERDA's request. On November 14, NYSERDA received permission from the Seneca Nation of Indians to enter the Cattaraugus Territory to complete surveys and sampling of Areas 4 and 5.**
- **Land use surveys were completed by interviewing the property owners.**

## Map of Area 1 Sampling Locations

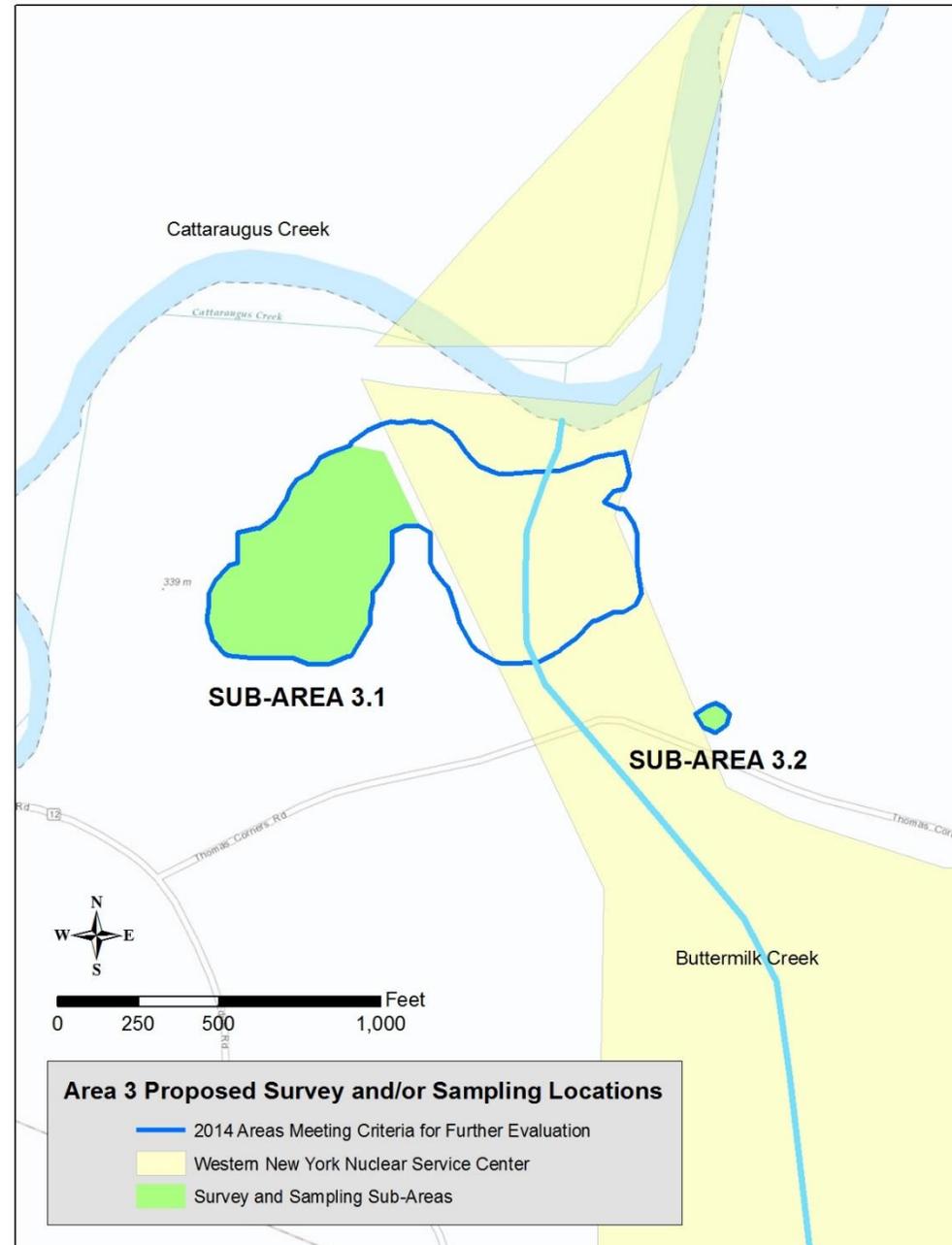
- Area 1 is adjacent to the WNYNSC site and is an area known as the Cesium Prong.
- From an air deposition event in the 1960s. This was identified in previous aerial radiation surveys. Extensively characterized in the 1990s.
- Because of the prior characterization work, samples collected here will be compared to existing data.





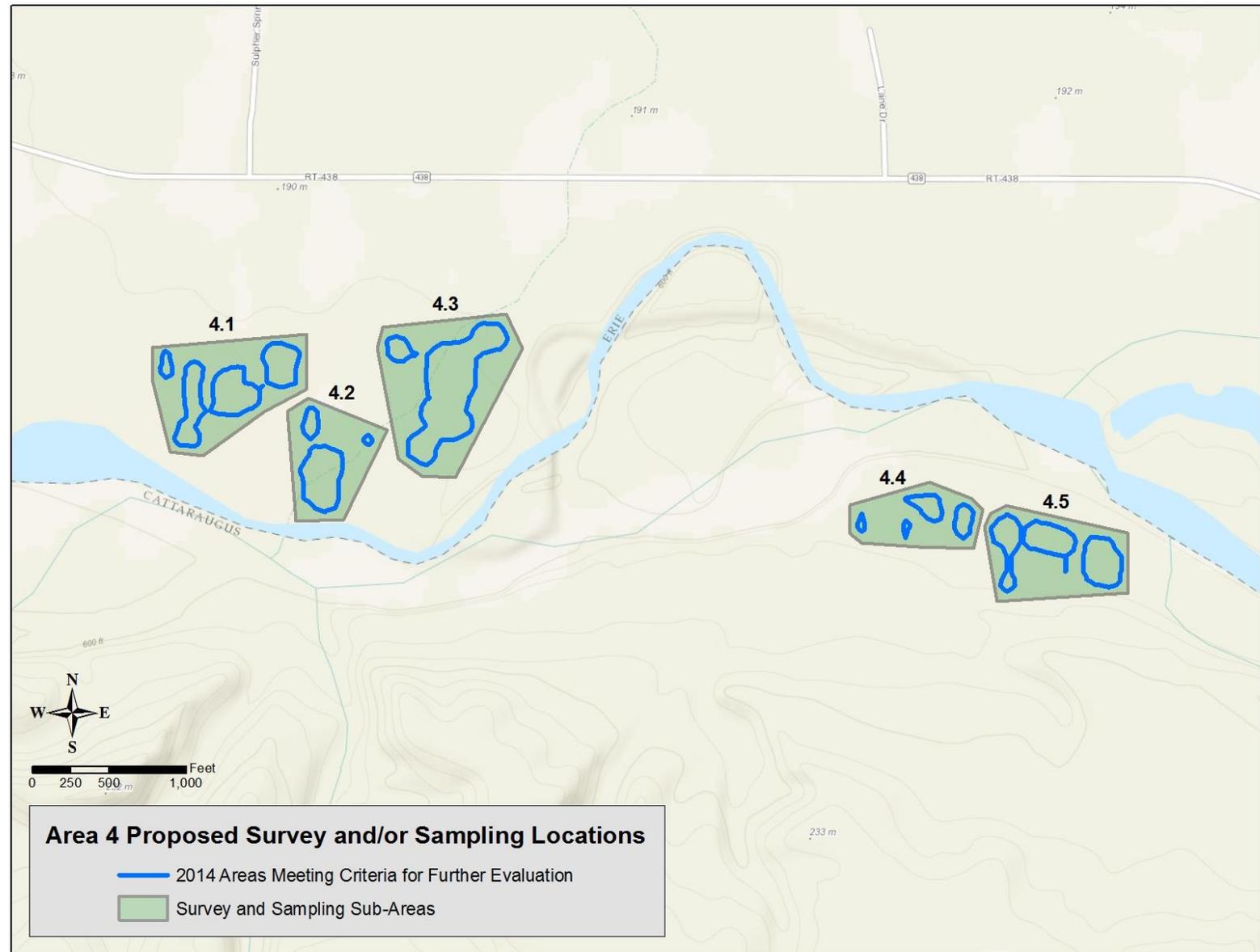
## Map of Area 3 Sampling Locations

- **Area 3 is located in the floodplain near the confluence of Buttermilk and Cattaraugus Creeks.**
- **Identified in previous aerial radiation surveys.**
- **Surveys and samples were conducted in Sub-Areas 3.1 and 3.2.**



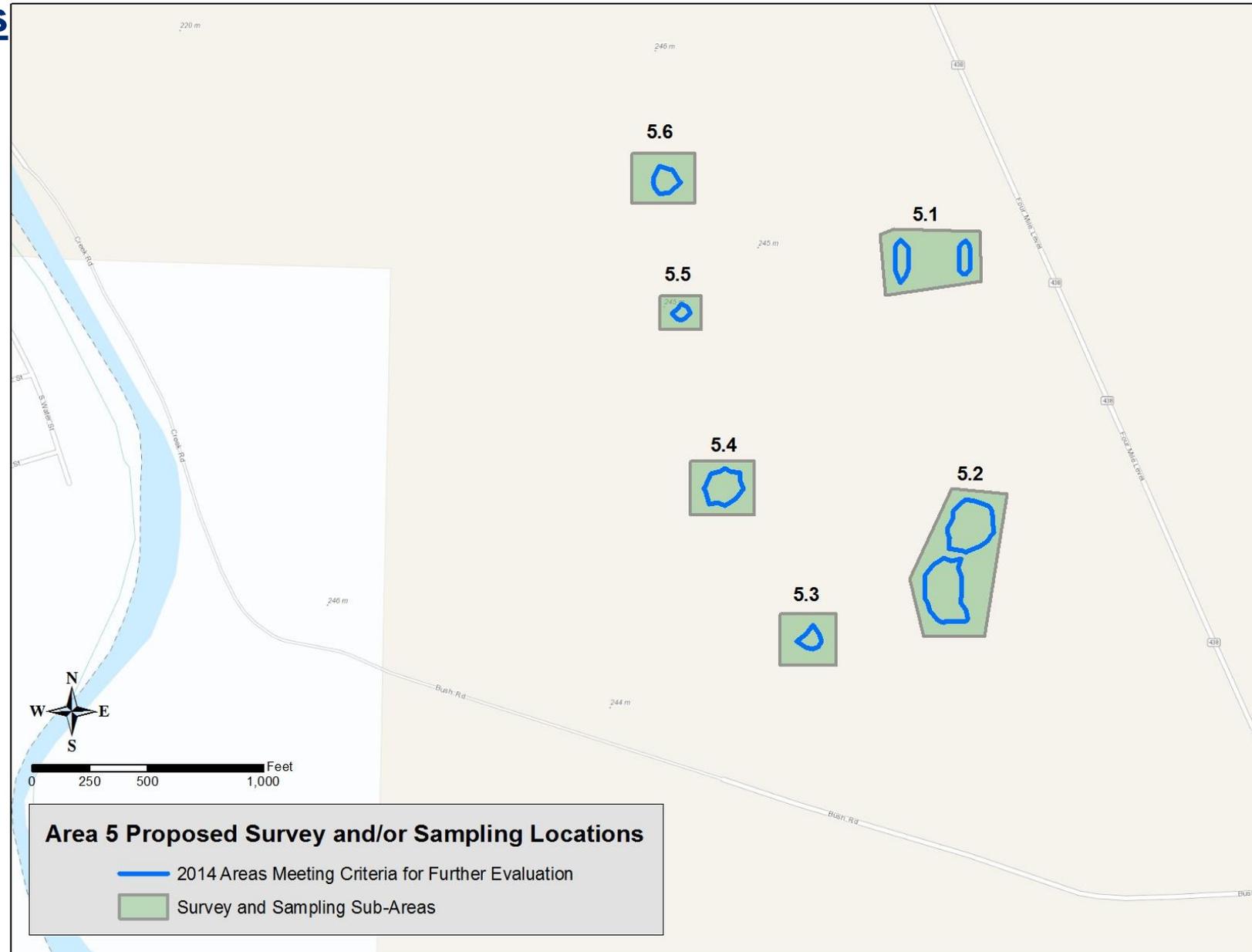
## Map of Area 4 Sampling Locations

- **Area 4 is located on the Cattaraugus Territory of the Seneca Nation of Indians.**
- **No previous aerial radiation survey data exists for this area.**
- **This area is located with the floodplain of Cattaraugus Creek.**
- **Surveys and sampling are proposed for all five sub-areas shown.**



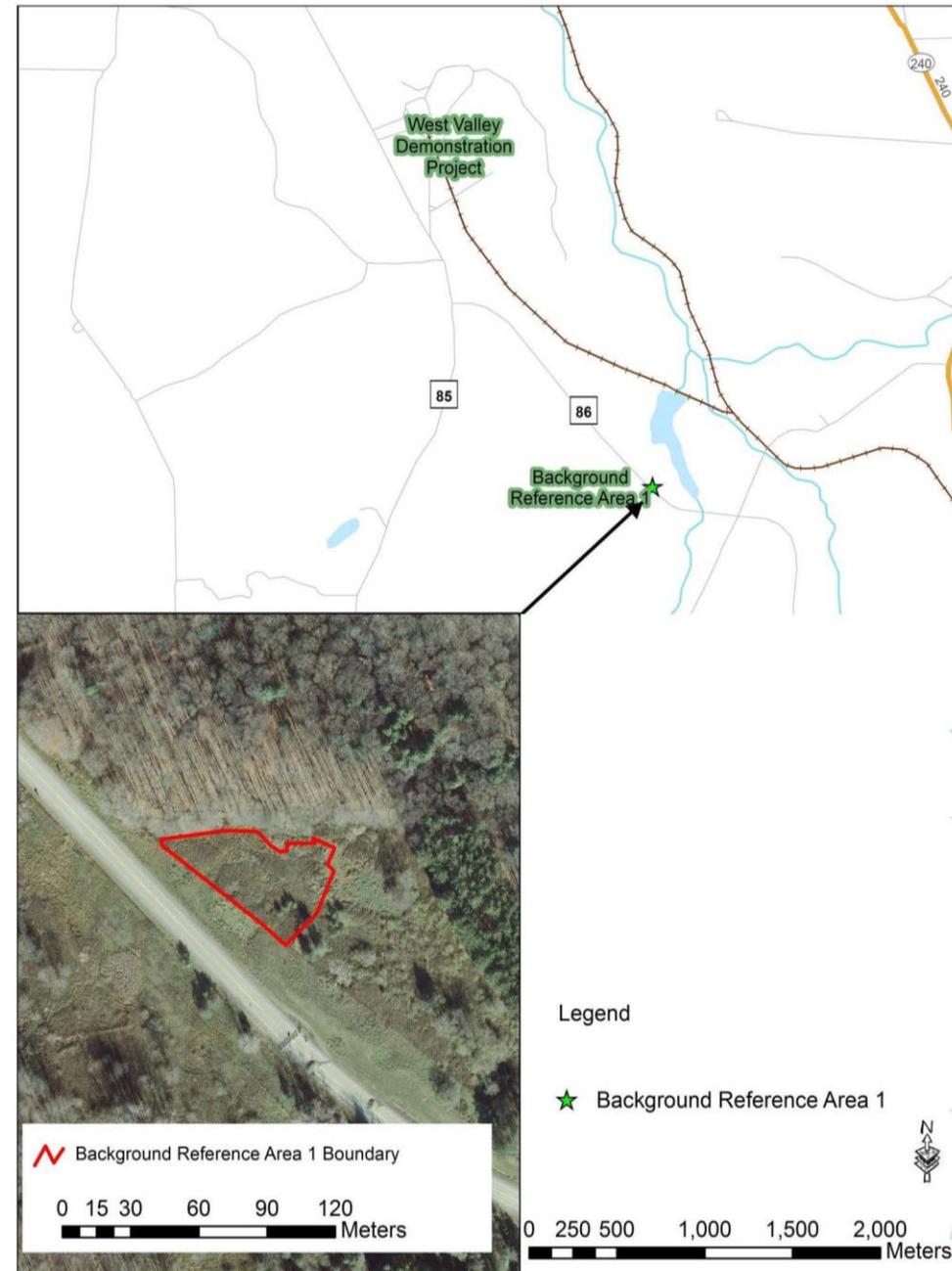
## Map of Area 5 Sampling Locations

- Area 5 is located on the Cattaraugus Territory of the Seneca Nation of Indians.
- No previous aerial radiation survey data exists for this area.
- Area is not within the floodplain of Cattaraugus Creek.
- Surveys and sampling are proposed for all six sub-areas shown.



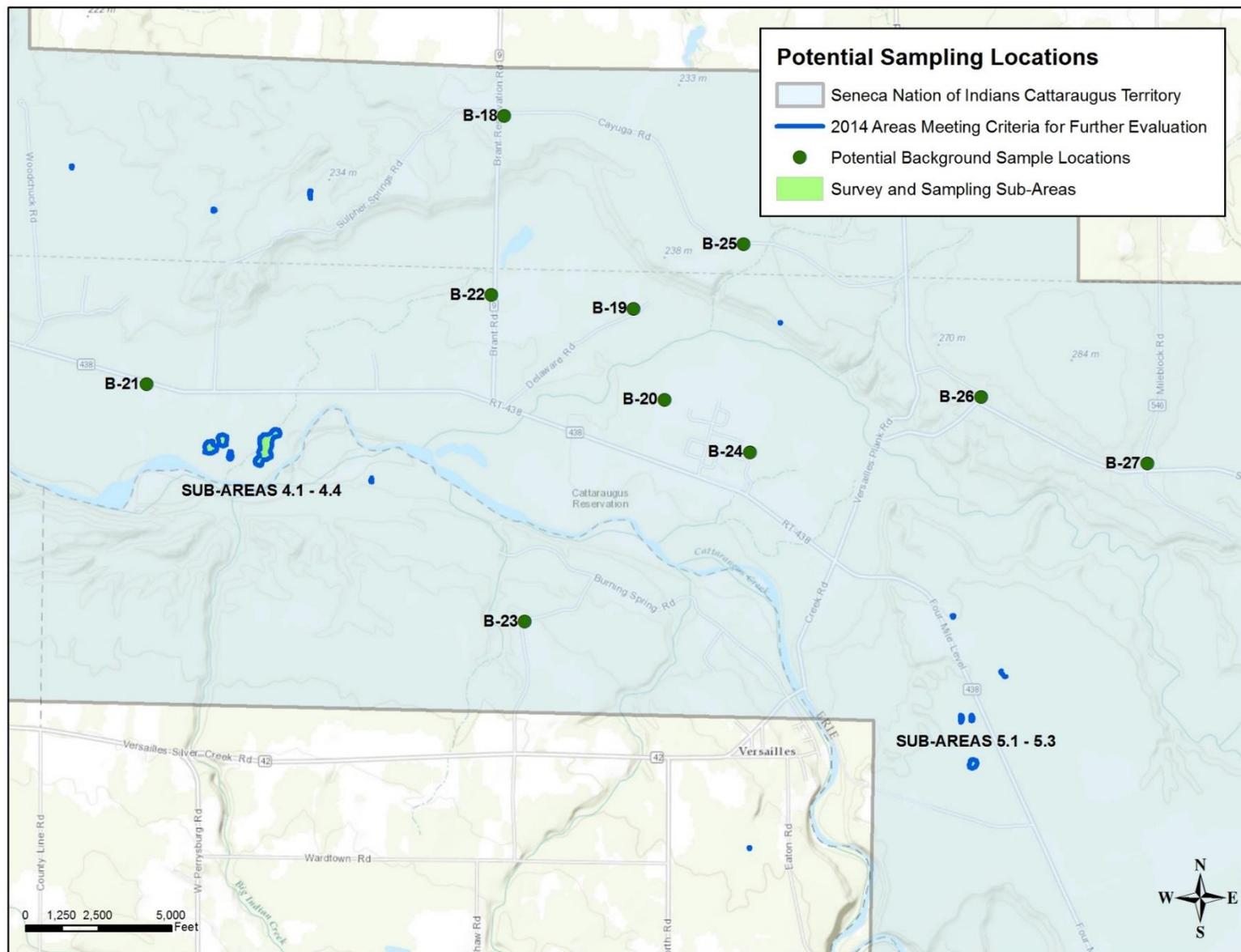
## Background Locations for Center and Near Center Locations

- Because all soil has naturally occurring radioactivity, the sample results will be compared to samples collected from “background areas.”
- For this evaluation, NYSERDA will use the background data collected by the DOE (WVDP Terrestrial Background Study, July 2014).
- This is the background location for Areas 1, 2 and 3, along with the On-Center locations.



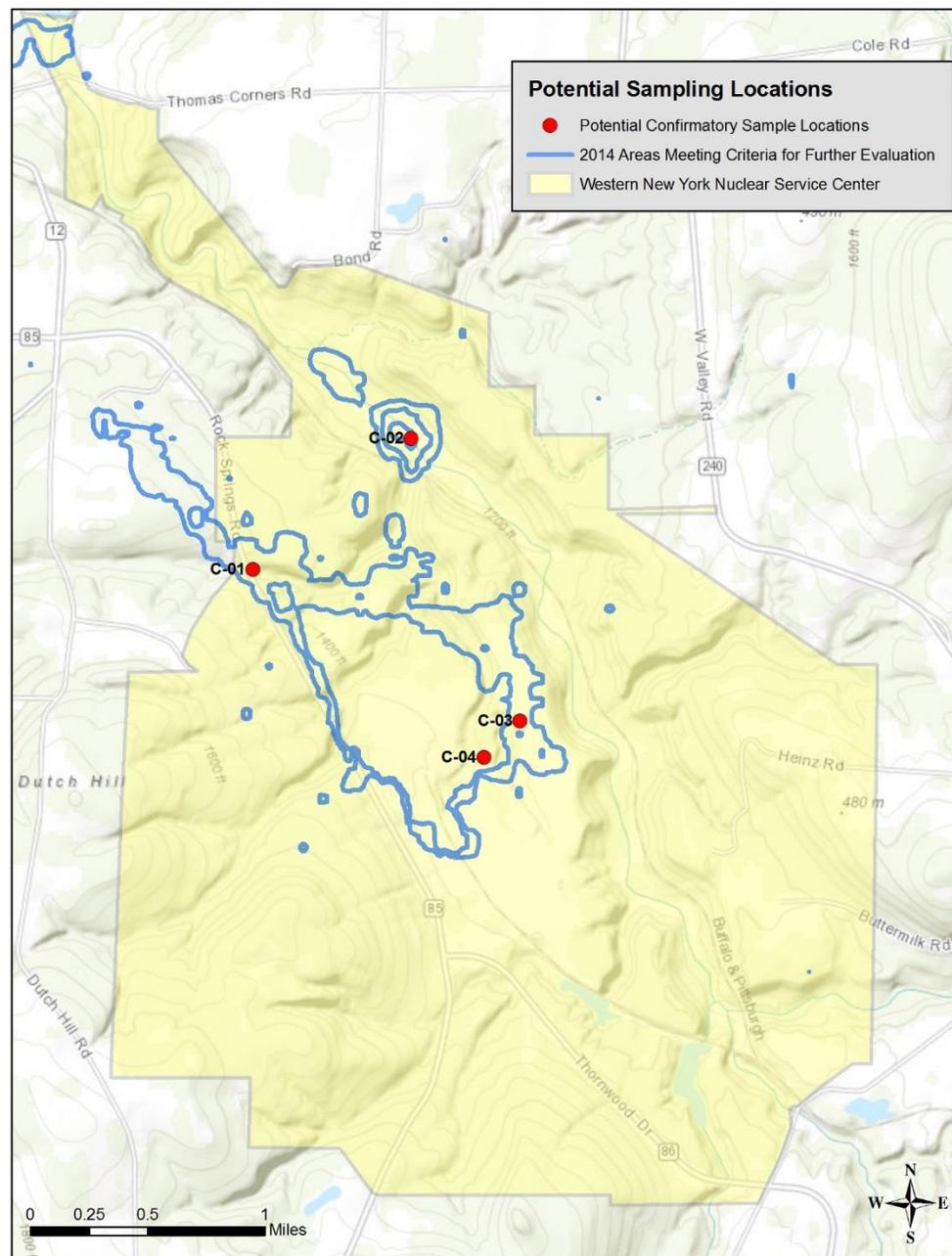
## Background Locations on the Cattaraugus Territory of the Seneca Nation of Indians

- **Five of these locations are located within the Cattaraugus Creek floodplain and five locations are outside of the creek floodplain area.**
- **NYSDERDA is considering additional sampling of soil and sediment along Clear Creek to account for natural uranium concentrations in the black shales in this area.**



## WNYNSC Locations

- Four “On Center” locations were also sampled.



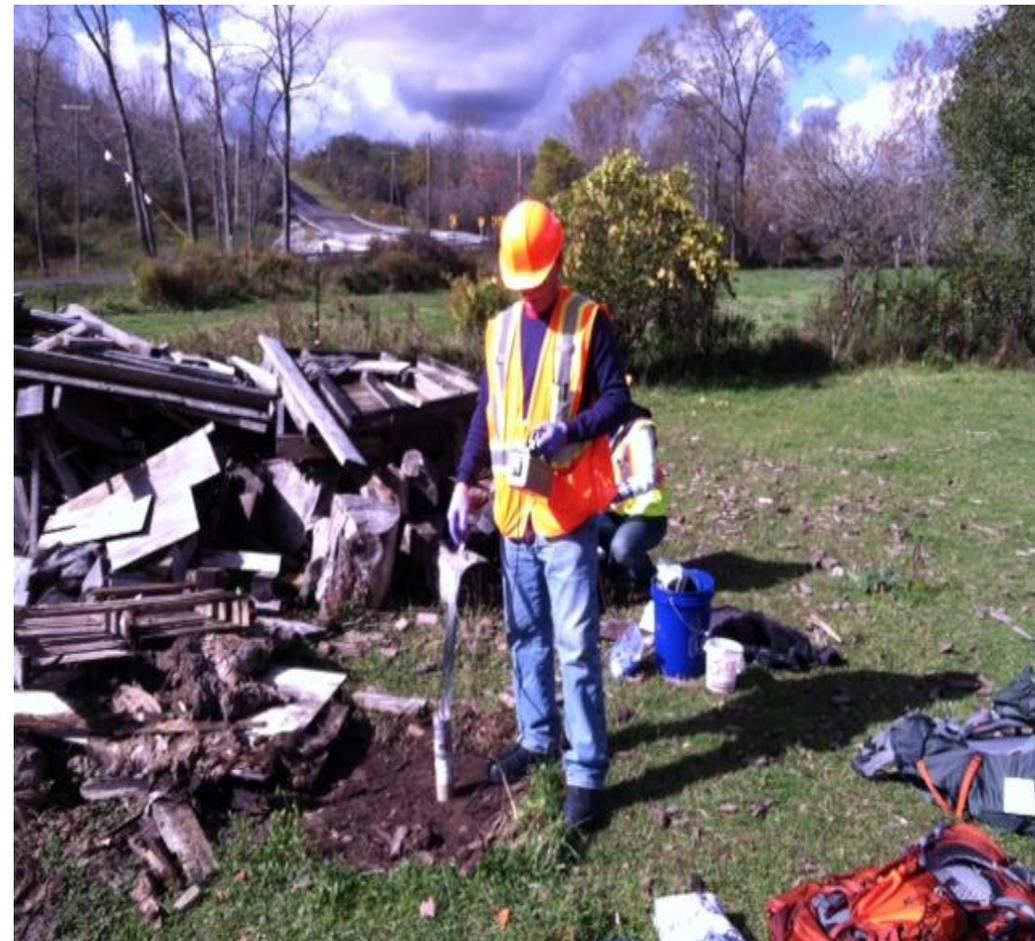
## Implementation

- **NYSERDA worked with our current radiological support contractor to develop a Field Sampling and Dose Assessment Plan for completing the surveys, sampling and dose assessments.**
- **NYSERDA submitted the draft plan to NRC, EPA, NYSDEC, and NYSDOH for their review and comment in September 2015.**
- **NYSERDA submitted a revised plan incorporating the regulators' comments on October 1, 2015.**
- **NYSERDA's radiological support contractor began the surveying and sampling activities on October 14, 2015.**



## Implementation

- **For the WNYNSC location and Areas 1, 2 and 3:**
  - **Walkover surveys were conducted to identify whether elevated readings could be identified in the field.**
  - **Any elevated areas identified through the walkover survey were sampled.**
  - **If no elevated areas were identified, random sample locations were selected.**
  - **The total number of sample locations (elevated or random) were determined for each sub-area based on the size of the sub-area.**



## Implementation

- **For the WNYNSC location and Areas 1, 2 and 3:**
  - **43 separate locations have been sampled:**
    - **At the 43 locations, 112 separate soil samples were collected at various depths with 49 sent for analysis (all others were archived for future analysis, if warranted).**
  - **16 quality control duplicate samples were sent for analysis.**



## Next Steps

- **For any areas with above-background soil concentrations, a dose assessment will be conducted using the soil sampling results and land use survey information for the property.**
- **When the validated sample results are received and dose assessment work is completed, NYSERDA will meet with each property owner to discuss the results of the surveys and sampling activities.**
- **All results will be provided to the regulatory agencies for their review.**
- **Results will be presented at the February 25, 2016 QPM.**