New York State Geological Survey New York State Museum Mark Schaming, Director North American Datum of 1983 Geologic mapping by D. Pair, B. Bird and K. Backhaus, 2001, 2010, 2015 & 2021 Hygrology, and planimetry layers from the 0 KILOMETERS 1 New York State DOT Raster Quadrangle separates for Cayuga, Cortland Digital data and cartography, K. Schoenenberger, J. Manchester, B. Bird and K. Backhaus, 2010, 2011 & 2021 (https://gis.ny.gov/gisdata/inventories/member.cfm? Organization ID=108).Geographic data layers from 2019 TIGER/Line shapes for transportation and hydrograpghy (https://www.census.gov/cgi-bin/geo/shapefiles/index.php) Shaded relief from Onondaga 2003-2012 County 3-meter, NYS 10m DEM, and 2008 Cayuga County 1-meter Lidar data sets (http://gis.ny.gov/elevation/index.cfm) Magnetic declination from the NOAA online Declination Calculator: CONTOUR INTERVAL: 10 FEET UTM GRID AND 2019 MAGNETIC NORTH http://www.ngdc.noaa.gov/geomag-web/#declination DECLINATION AT CENTER OF SHEET

SURFICIAL GEOLOGY OF THE SPAFFORD 7.5-MINUTE QUADRANGLE, CAYUGA, CORTLAND, AND ONONDAGA COUNTIES, NEW YORK

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*prepared by*Brian C. Bird and Karl J. Backhaus

Supported in part by the U.S Geological Survey's National Cooperative Agreement Number 00HQAG0052 Geologic Mapping Program (STATEMAP)

DESCRIPTION OF MAP UNITS

Holocene	
Af	Artifical Fill (Af) Surficial sediment composed of coarse/fine and or crushed rock anthropogenically transported and used for construction purposes.
На	Stratified silt, sand and gravel (Ha) Sorted and stratified silt, sand, and gravel, deposited by rivers and streams. May include cobbles and boulders. Inferred as post-glacial alluvium and includes modern channel, over-bank and fan deposits
Hw	Wetland Deposit (Hw) Peat, muck, marl, silt, clay or sand deposited in association with wetland environments. Various sediments can be present at transitional boundaries from one facies to another
Hdc	Diamict Colluvium (Hdc) Unsorted and unstratified deposit of gravel, sand, silt, clay, with boulders/cobbles possible. Described as a mass-wasting deposit at the base of steep hillslopes and cliffs as part of a slump or hillslope failure.
Pleistocene	
Plsc	Silt and Clay (Psc) Stratified, fine-grained sediment consisting of fine sand, silt and clay size particles. Inferred to be deposited in mid shore to deepwater settings of glacial lakes. May include marl, rythmites, and varves.
Pics	Cobbles to Sand (Pics) Stratified ice contacted deposits, variable coarse-grained sediment consisting of boulders to sand size particles. Inferred to be deposited along an ice-margin. May include, interbedded coarse lenses of gravel and clast supported diamictons (flow tills).
Psg	Stratified sand and gravel (Psg) Well-sorted and stratified sand and gravel. May include cobbles and boulders. Inferred to be delta, fan or lag deposits in glacial channels or near former ice margins.

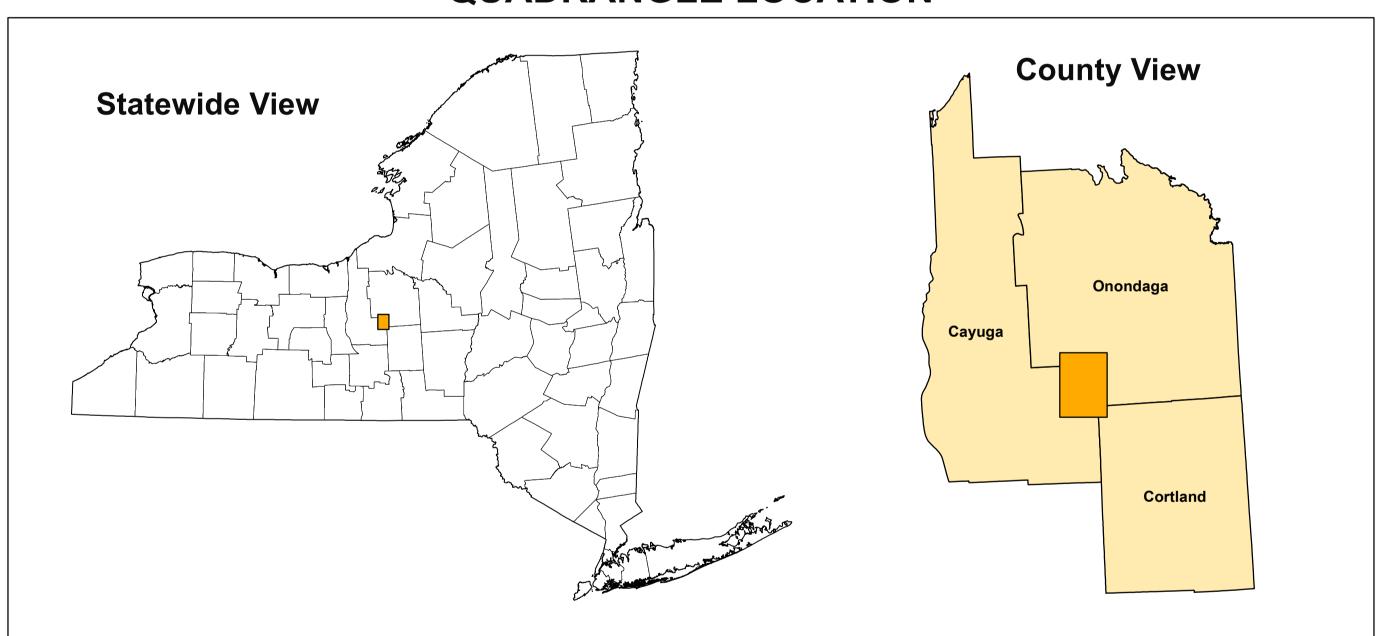
Pre-Pleistocene

in areas marked as Br.

Non-glacially derived, hard rock, pre-pleistocene in age. May be covered up to a meter in diamicton, sand and gravel, or sand and clay

QUADRANGLE LOCATION

An admixture of unsorted sediment ranging from clay to boulders. Generally matrix supported, massive and clast-rich.



ADJOINING QUADRANGLES

SYMBOLS LARFALL Eskers Streams 。°°°°_{°°°°} Ice Margins County Lines Meltwater Channels NYSDOT Boring Location Meltwater Direction Spillways

NOTICE

1:75,000 scale; 2x vertical exaggeration Feet-amsl Shaded relief generated from 2008 Cayuga

QUADRANGLE ELEVATION

This geologic map was funded in part by the USGS National Cooperative Geologic Mapping Program STATEMAP Award number 00HQAG0052 in the year 2001.

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New York State Museum Map & Chart No. 57 ISSN:0097-3793 ; ISBN:978-1-55557-259-6

County 1-meter, 2003-12 Onondaga County 3-

meter and the New York State 10-meter lidar data