New York State Geological Survey New York State Museum & Science Service Mark Schaming, Director Dr. Andrew L. Kozlowski, Mapping Program Director Richard A. Frieman 2024 Introduction Lake Erie resources), and environmental studies. Methodology and subsequently resampled to a cell size/resolution of 1m x 1m. **Explanation** Bedrock elevations were calculated at each location by subtracting the depth-to-bedrock from the ground surface elevation. Bedrock elevation contours generated by ArcMap at a 50-foot interval were manually refined through a multi-step quality control process to 50ft Bedrock Elevation Contour resolve any interpolation errors. The finalized contours were converted into a 1-meter raster, using the "Topo to Raster" tool, the 100ft Bedrock Elevation Contour product of which is the county-wide bedrock topography map. Chautauqua County Line Summary The New York State Museum – Geological Survey has developed a New York State Line detailed Bedrock Topography Map for Chautauqua County. This map represents a compilation of various surficial and subsurface Adjacent County bedrock data sources, analytical methods, and quality control procedures. The resulting bedrock elevations reveal a range of distinct geological features including a variety of Paleozoic bedrock **Bedrock Topography** erosional profiles, and evidence of past glaciation. These characteristics are likely the result of a variety of functions including Feet-amsl bedrock stratigraphy, structural deformation, and erosional processes such as past glaciation and fluvial geomorphology. This map is significant for applications in geological research, engineering, natural resource management, and environmental studies. Continued research and work on subsurface geology will provide additional data and insight and enhance the geologic framework of bedrock geology throughout New York State. 1,000 - 1,100 1,100 - 1,200 1,200 - 1,300 1,300 - 1,400 1,400 - 1,500 1,500 - 1,600 **COUNTY LOCATION** 1,700 - 1,800 SCALE1:100,000 1,900 - 2,000 Digital Data and Cartography by R. Frieman and K. Backhaus, 2022-24 2,000 - 2,100 Universal Transverse Mercator, Zone 18 N North American Datum of 1983 EDT) makes no representation or warranty, expressed or implied, with respect to its accuracy, completeness, or usefulness for any particular purpose c ED assumes no liability for damages resulting from the use of any information, apparatus, method, or process disclosed in this map and text, an andent site-specific verification of the information contained herein. Any use of trade, product, or firm names is for descriptive purposes only and displayments that NYSED. Geographic and hydrography data obtained from the NYSGIS Clearinghouse: 2,100 - 2,200

BEDROCK TOPOGRAPHY OF CHAUTAUQUA COUNTY, NEW YORK

Beginning in 2019, under the guidance and funding provided by the United States Geological Survey - Great Lakes Geological Mapping Coalition (award G20AC00401), the New York State Museum - Geological Survey began a statewide effort to conduct geologic mapping of bedrock elevations throughout New York. Chautauqua County, of Western New York, is bound to the west and the south by the Pennsylvania border, to the east by Cattaraugus County, to the north by Erie County and Lake Erie to the northwest. Surficial and subsurface bedrock point data and maps were compiled from publicly available sources, vetted, and organized into a comprehensive geospatial database. A technical workflow was developed to categorize the overall geology and differentiate between the underlying bedrock and overlying unconsolidated sediments. The resulting bedrock elevation map provides a detailed representation of bedrock topography across Chautauqua County. This map is useful for various applications, including geological studies, engineering and construction, natural resource management (such as water or mineral

A total of 3,718 bedrock control points were used to delineate bedrock topography in Chautauqua County. These points consisted of 3,013 water wells, 325 bedrock outcrops, 318 engineering boreholes and 62 waterfall locations. These data were compiled from a variety of public sources and imported into ESRI's ArcMap 10.8 software platform. Ground surface elevations for all control points were extracted from the highest available resolution LIDAR DEM data available

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