



Description of Map Units

- Holocene Deposits**
- af** Artificial Fill. Artificially-emplaced material along road beds, embankments and in developed areas. Material varies from natural sand, gravel, or till to various artificial waste materials. Thickness varies.
 - Ha** Alluvium. Silt, sand, and gravel deposited by modern streams. Includes stream channel, bar, and floodplain deposits. Wetland deposits are common within these areas and are not distinguished. Thickness in tributary valleys is typically less than 3 meters, although the depth may be much greater in the valleys of the larger streams.
 - Hat** Alluvial Terrace Deposits. Silt, sand, and gravel deposited on terraces above the modern floodplains of streams. They are composed of a variety of channel, bar, and floodplain deposits. Generally less than 5 meters thick.
 - Haf** Alluvial Fan Deposits. Boulder, pebble, and cobble gravel and pebbly sand deposited at sites where steep, stream gradients are sharply reduced. Common at the mouths of steep tributaries where they meet the main stream. Generally less than 5 meters thick.
 - Hw** Wetland Deposits. Accumulations of organic matter and/or clastic sediment in low-lying areas. Includes a wide variety of wetland types. Commonly overlying other deposits such as alluvium, lacustrine sediment, or till. Only larger deposits are shown.
- Pleistocene Deposits**
- Paf** Alluvial Fan Deposits. Boulder, pebble, and cobble gravel and pebbly sand deposited at sites where steep, stream gradients are sharply reduced. Common at the mouths of steep tributaries where they meet the main stream. Generally less than 5 meters thick. Includes fans of probable Pleistocene age deposited on undissected glacial lake bottoms soon after drainage of the lakes.
 - Plc** Lacustrine Deposits, Coarse-grained. Well-sorted sand, pebbly sand and/or sandy gravel deposited in shoreline, shallow water, or lake bottom environments of a glacial lake.
 - Pif** Lacustrine Deposits, Fine-grained. Clay, silt, and very fine to fine sand deposited in deeper waters. Commonly laminated. Deposited in distal lake bottom environment of a glacial lake.
 - Pldro** Lacustrine Deposits, Delta. Well-sorted sand and gravel deposited into glacial Lake Roxbury at the mouth of a tributary stream. Includes topset and foreset beds.
 - Pi** Ice-contact Deposits, Undifferentiated. Unsorted to poorly-sorted stratified sand, gravel, and silt deposited in contact with glacial ice. Surface may contain scattered kettle holes formed by melting of buried ice blocks or be a highly complex kame and kettle.
 - Pidro** Ice-contact Deposits, Delta. Well-sorted sand and gravel deposited directly out into glacial Lake Roxbury at the mouth of a tributary stream. Includes topset and foreset beds.
 - Pie** Esker Deposits. Elongate ridge of ice-contact stratified sand and gravel deposited by glacial meltwater streams in tunnels within or beneath the glacial ice. Eskers are found south of the Dog River in Northfield (near the Roxbury town line) and west of Open Meadow Brook in Roxbury just west of the Brookfield town line.
 - Pik** Kame Terrace Deposits. Composed primarily of stratified sand and gravel, deposited between an ice-sheet and the adjacent side of the valley. Sediment is derived primarily from meltwater, with variable contributions from the valley sides. May include subaqueous grain flows and debris flows. Materials may be some combination of lacustrine and fluvial deposits.
 - Pt** Till. Very dense to loose, unsorted to very poorly sorted material deposited directly from glacial ice. Contains a wide range of grain sizes, from clay or silt up to large boulders. Throughout much of the quadrangle the matrix is commonly dominated by silt. Surface boulders are common. Thickness is highly variable, from less than 3 meters to greater than 30 meters. Areas near the tops of hills that are mapped as till may include colluvium and talus deposits and/or have less than one meter to bedrock.
- Older Deposits**
- rk** Area of extensive bedrock exposures.

Map Symbols

- ▲ Surficial Field Station
- Bedrock Outcrop
- ◆ Glacial Lake Threshold
- ↑ Glacial Striation
- Well
- × Sand and Gravel Pits
- Esker
- Line of Cross Section
- Glacial Lake Winooski
- Glacial Lake Roxbury
- Glacial Lake Hitchcock
- Quadrangle
- Index Contours (100 foot)
- Contours (20 foot)

Coordinate System: Vermont State Plane, FIPS 4400, NAD 83. Geographic coordinates shown at topo corners are in NAD 83. Grid overlay on map is UTM, Zone 18N, NAD83. Base map data from the Vermont Center for Geographic Information (VCGI). Contours and shaded relief layer derived from 0.7 m lidar DEM, downloaded as a 5.0 m DEM from VCGI. Digital cartography by George Springston, Norwich University, Dept. Earth and Environmental Sciences, May, 2021.

Additional bedrock outcrops are derived from the Vermont Geological Survey layer "Bedrock Outcrops" hosted by VCGI.

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Surficial Geologic Map of the Roxbury 7 1/2 Minute Quadrangle, Vermont

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