

ACIAL ICE-LAID DEPOSITS

- Thin Till
- Thick Till
- End Moraine deposits

ACIAL MELT-WATER DEPOSITS

Deposits

- Fines (very fine sand, silt, and clay)

Coarse Deposits

- Gravel
- Sand and Gravel
- Sand

Unsorted Coarse Deposits

- Gravel overlying Sand and Gravel
- Gravel overlying Sand
- Sand and Gravel overlying Sand
- Sand and Gravel overlying Sand overlying Sand and Gravel
- Sand overlying Gravel
- Sand overlying Sand and Gravel

Sorted Coarse Deposits Overlying Fine Deposits

- Gravel overlying Sand overlying Fines

POSTGLACIAL DEPOSITS

- Floodplain Alluvium
- Alluvium overlying undifferentiated Coarse deposits (g, s, s)
- Alluvium overlying Sand
- Alluvium overlying Fines
- Alluvium overlying undifferentiated Coarse deposits overlying Fine deposits
- Alluvium overlying undifferentiated Fine deposits overlying Coarse deposits
- Swamp deposits
- Swamp deposits overlying Sand
- Swamp deposits overlying Fines
- Swamp deposits overlying Sand overlying Fines
- Swamp deposits overlying Fines overlying Sand
- Salt-Marsh and Tidal-Marsh deposits
- Salt-Marsh and Tidal-Marsh deposits overlying Sand
- Salt-Marsh and Tidal-Marsh deposits overlying Fines
- Talus
- Beach deposits
- Artificial Fill

* Alluvium may be overlying any of the Coarse deposits (g, s, s)

Sand and Gravel overlying Sand overlying Fines
 Sand and Gravel overlying Fines
 Sand overlying Fines

Sorted Fine Deposits Overlying Coarse Deposits

Fines overlying Sand and Gravel
 Fines overlying Sand

GRAIN SIZE									
GRAIN SIZE									
GRAIN SIZE									
10	2.5	.16	.08	.04	.02	.01	.005	.0025	.0015
in									
256	64	4	2	1	.5	.25	.125	.068	.004
mm									
Boulders	Cobbles	Pebbles	Granules	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt
									Clay
GRAVEL PARTICLES			SAND PARTICLES				FINE PARTICLES		

Grain-size classification (modified from Wentworth, 1922)

Unconsolidated glacial and postglacial deposits, that range from a few feet to several hundred feet in thickness, overlie the bedrock surface. Connecticut (see Block Diagram) maps portray the distribution of these extensive materials. They are the primary focus of this paper. The map legend is designed to highlight the relationship between the depositional origins and the character of the materials portrayed. Most of Connecticut's surficial material is glacially derived, and can be divided into two broad depositional categories: Glacial Ice-Land deposits (tills and moraine) which are generally exposed in the upland areas of the state, and Glacial Water-Land deposits (stratified deposits); which are most commonly concentrated in valleys and lowlands. A mapping emphasis is placed on stratified meltwater deposits (glacial outwash and varve) which are historically influenced development patterns throughout the state.

For a complete description of surficial materials map units, and further information concerning their thickness and modes of occurrence, please refer to the published Surficial Materials Map of Connecticut and the companion Quaternary Geologic Map of Connecticut and Long Island Sound Basin (see Data Sources).

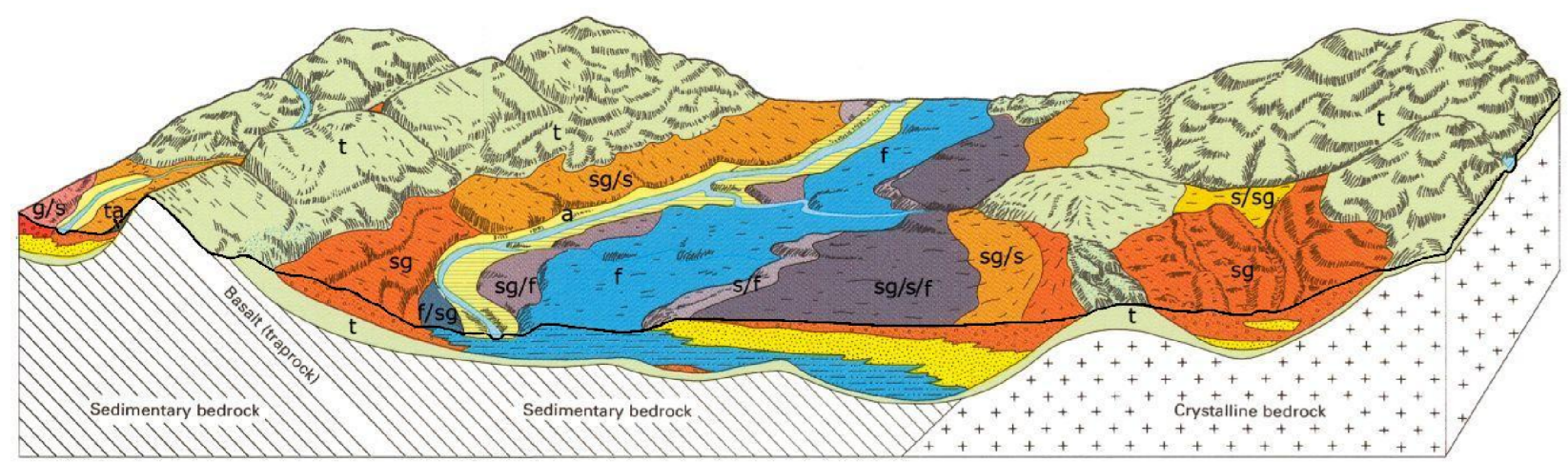
Glacial Ice-Laid Deposits (tilts and moraine) were derived directly during the ice contact and consist of nonsorted, generally nonstratified, unconsolidated, and unconsolidated deposits. The composition of most tills is predominantly sand and silt and boulders can be locally abundant. The moraine deposits are composed of sand and gravel and occasionally masses of laminated fine-grained sediment. The lack of sorting and stratification typical of ice-laid deposits is a result of the rapid deposition of the material in a low, mediant, source of groundwater and unsuitable for septic systems. The moraine deposits are typically composed of sand and gravel and commonly underlie stratified moraine deposits (see Figure B). End moraine deposits (primarily ablation till) occur in the area of the moraine and are typically composed of sand and gravel.

Glacial Meltwater deposits (stratified deposits) were laid down in glacial streams, lakes and ponds which occupied the valleys and lowlands of Connecticut as the last ice sheet melted away to the north. They are often composed of layers of well-to-poorly sorted sands, gravels, silts and clays with few to no boulders, and owing to their water-related depositional origins they have many

characteristics that are favorable for development. Because water is a better sorting agent than ice, glacial meltwater deposits are commonly better sorted, more permeable, and better aquifers than ice-laid deposits. They can be good sources of construction aggregate, and are relatively easy to excavate and build highways and buildings on.

Melward deposits are depicted using four basic texturally-based map units: gravel, sand and gravel, sand, and fines. To the extent that it is known or can be inferred, the subsurface texture and thickness of the melward deposits is also indicated by the thickness. In many places similar conditions persisted for the entire time that a melward deposit was being laid down, and a single map unit (e.g. s-sand) is sufficient to describe the entire melward sequence. Areal and vertical texture variability can occur within the melward sequence, and is indicated by the use of the 'a' and 's' sediment varies with each melward setting (stream, delta, lake, etc.), and settings can change over time. High-energy depositional environments near glacial margins (proximal) tend to favor deposition of coarse material but as time passes, and the glacial meltwater retreats, the depositional environment changes, and the deposits can become predominant. Where more proximal, stratigraphic relationships existed because of changing conditions during deposition, "stacked" map units are used to characterize the melward sequence, such as s-sand and gravel overlying sand overlying fines. Where lateral depositional changes occur, the facies relationship is also shown (e.g. a/s - alluvial sand overlying sand).

Postglacial Sediments (primarily floodplain alluvium and swamp deposits) are less widely distributed and are typically thinner than the glacial deposits that they overlie, but they are locally important ecological, agricultural, commercial, and recreational resources. Talus, a result of rockfall at the base of steep bedrock (primarily trap rock) cliffs, provides a cool damp ecological niche. Beach, marsh and swamp deposits are key ecological elements of coastal and poorly drained inland settings. Deposits of floodplain alluvium are largely composed of sands, gravels and silts that have been reworked from glacial deposits and mixed with organic matter which increases their fertility. Despite their flood-prone nature, low, flat, fertile floodplains have historically been attractive for agricultural uses and development related to water-dependent commerce.



SURFICIAL MATERIALS DATA – Surficial Materials shown on this map are from the Surficial Material Poly dataset which contains polygon data intended to be used at 1:24,000 scale. Based on the Connecticut State Study of the Geologic Record, 1995, by the Connecticut Department of Environmental Protection, in cooperation with the U.S. Geological Survey. These data were digitized from the 1:24,000-scale compilation sheets prepared for the Connecticut State Study of the Geologic Record, 1995, by J.P. Schafer, J.P., London, E.H. and Thompson, W.B., 1992, U.S. Geological Survey special map, 2 sheets, scale 1:125,000.

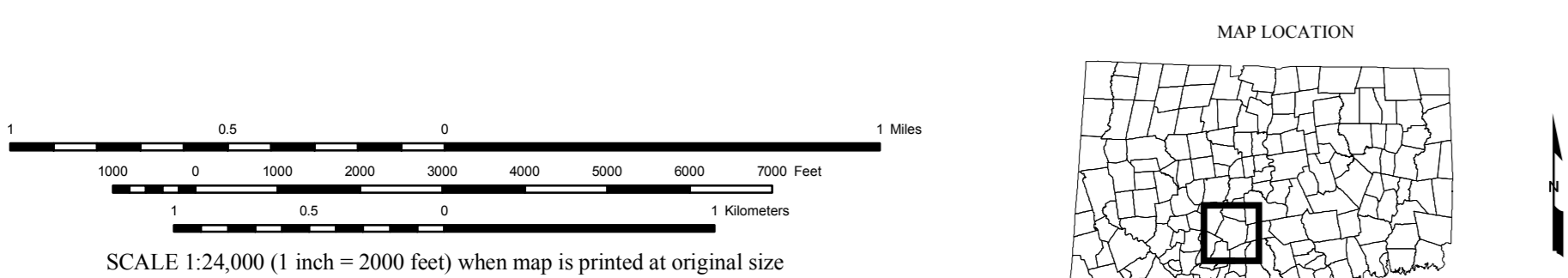
BASE MAP DATA - Based on data originally from 1:24,000-scale USGS 7.5 minute topographic quadrangle maps published between 1969 and 1992. It includes political boundaries, railroads, airports, hydrography, geographic names and geographic places. Streets and street names are from Tele Atlas® copyrighted data. Base map information is neither current nor complete.

RELATED INFORMATION
This map is intended to be printed at its original dimensions in order to maintain the 1:24,000 scale (1 inch = 2000 feet).

QUATERNARY GEOLOGY AND SURFICIAL MATERIALS. DATA - 1:24,000-scale digital spatial data of Connecticut Quaternary Geology and Surficial Materials combined into one dataset, published by the Connecticut Department of Environmental Protection, in cooperation with the U.S. Geological Survey. These data were digitized from the 1:24,000-scale compilation sheets prepared for both the Surficial Materials Map of Connecticut, Stone and others, 1992, 1:125,000 and the Quaternary Geologic Map of Connecticut and Long Island Sound Basin, Stone and others, 2005, 1:125,000.

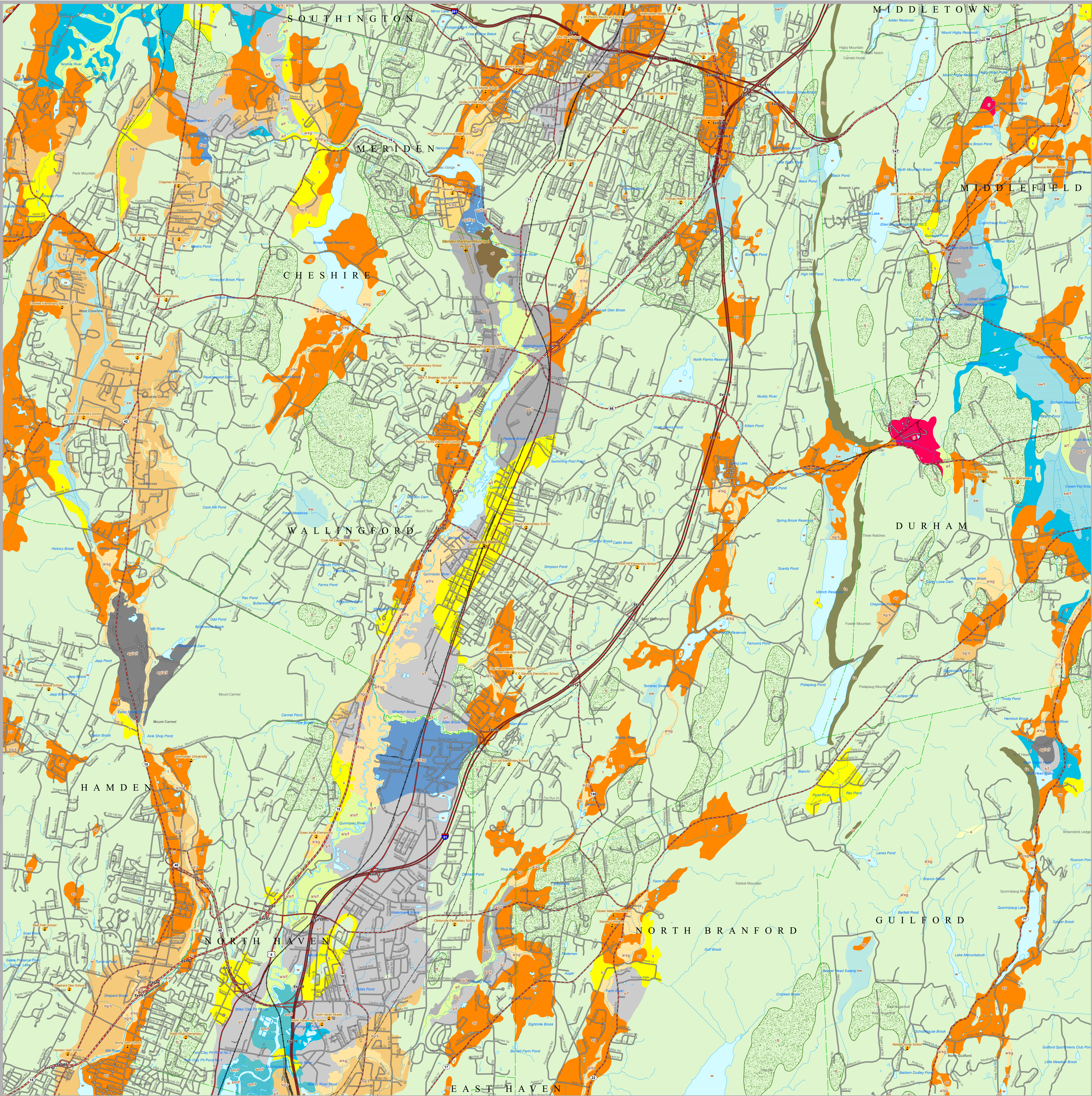
OTHER GEOLOGIC MAPS - This map is also available for individual USGS topographic quadrangles of Connecticut. Other bedrock, surficial, and quaternary (glacial) geology quadrangle maps and reports published by the Connecticut Geological and Natural History Survey, USGS, and others are also available from CT DEP.

MAPS AND DIGITAL DATA - Go to the CT ECO website for this map and a variety of others. Go to the CT DEP website for the digital spatial data shown on this map.



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79 Elm Street
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