

5: BEDROCK GEOLOGY

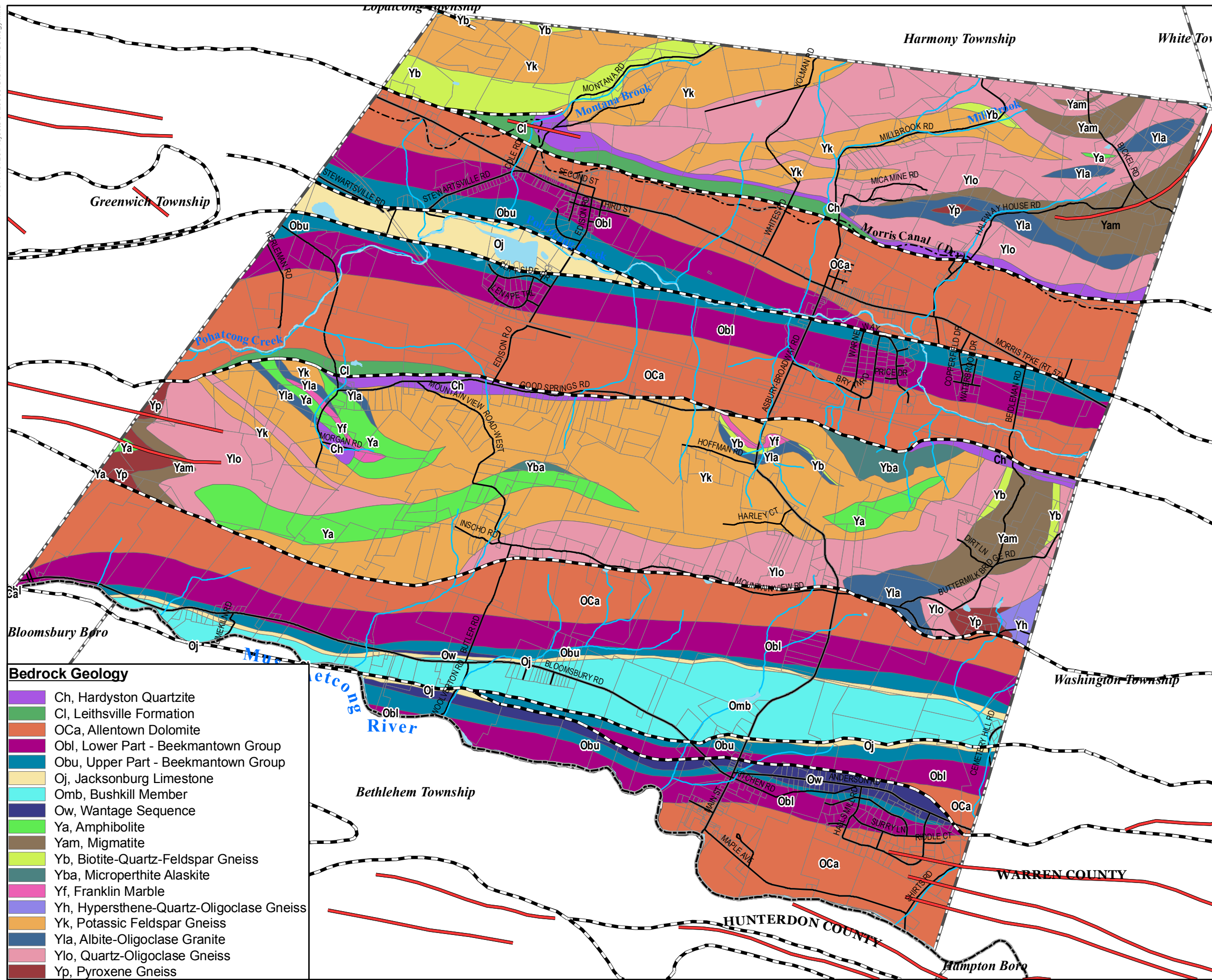
Franklin Township is located entirely within and near the southern margin of the Highlands physiographic province (a geologic unit) ([Figure 5](#)). The Highlands province consists of rocks of Precambrian and Early Paleozoic metamorphic and igneous rocks throughout portions of northern New Jersey, Southern New York, and most of Connecticut. The Highlands province is highly fractured and faulted with intrusional suites and tectonic faulting zones.

Within the Highlands province, Franklin Township falls within the Reading Prong region. The Reading Prong is a series of geologic materials that are unique to the Highlands of New Jersey, New York, and Pennsylvania. These formations can be traced through New Jersey north to New England and south through Pennsylvania to the Blue Ridge Mountains. These rocks are generally resistant to erosion and result in steep, tall relief including many escarpments, sheer vertical rock faces, and deeply entrenched river valleys. These severe slopes are accentuated by the extensive faulting and folding of the materials, likely a result of tectonic plate motion. The Reading Prong has also been referred to as the Byram Intrusive Suite and the Lake Hopatcong Intrusive Suite.

Ambient radon concentration is a concern in New Jersey because radon concentrations can be naturally high in the native rock. Evidence suggests that sustained radon exposure can increase cancer rates. Geology is a prime determinant of radon concentration. USEPA and USGS designate Warren County as a Zone 1 radon area, the designation of highest priority. This zone has the potential for radon concentrations to exceed 4pCi/L. The EPA characterization solely represents potential, not actual, concentrations which can only be determined by onsite testing. Radon resistant features for structures include basement and slab vents and basement windows, which promote air exchange.

The bedrock figure enclosed herein is general and depicts overall constituents of the rock formation. As with any natural system, there are “gray areas”, and investigations should be conducted to determine the mineralogical constituents and physical properties of the underlying rock and the propensity for materials to form solution cavities. For large developments, geotechnical engineers should determine the stability of bedrock to support structures and determine the effects of the underlying geology.

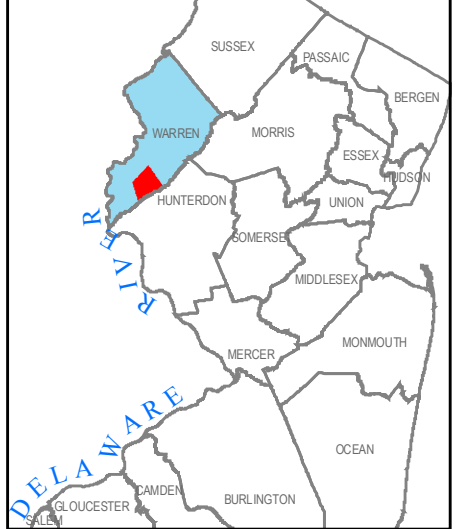
Two geological formations are observed in Franklin Township: the intrusive suite of hard metamorphic and igneous rocks (collectively known as crystalline geology) and the ferrous-rich formation of sedimentary rocks that supported the iron mines of the region in the 19th Century. Reading Prong geology includes 42.48% of the Township; lithology (rock composition) includes gneiss, and amphibolite, but is dominated by Potassic Feldspar Gneiss. The low-lying sedimentary formation accounts for 57.52% of Township land and is associated with the Musconetcong River and Pohatcong Creek river valleys. Lithology of this formation includes limestone, shale, and sandstone, and is dominated by Allentown Dolomite. Sinkholes are a common feature of this type of karst geology, which is defined by the dissolution of the soluble lithology.



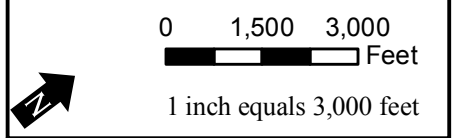
Bedrock Geology

Ch	Hardyston Quartzite
Cl	Leithsville Formation
OCa	Allentown Dolomite
Obl	Lower Part - Beekmantown Group
Obu	Upper Part - Beekmantown Group
Oj	Jacksonburg Limestone
Omb	Bushkill Member
Ow	Wantage Sequence
Ya	Amphibolite
Yam	Migmatite
Yb	Biotite-Quartz-Feldspar Gneiss
Yba	Microperthite Alaskite
Yf	Franklin Marble
Yh	Hypersthene-Quartz-Oligoclase Gneiss
Yk	Potassic Feldspar Gneiss
Yla	Albite-Oligoclase Granite
Ylo	Quartz-Oligoclase Gneiss
Yp	Pyroxene Gneiss

NEW JERSEY COUNTY MAP



PRINCETON HYDRO, LLC.
 1108 OLD YORK ROAD, SUITE 1
 RINGOES, NEW JERSEY, 08551



- SOURCES:**
- Parcel, roads and the Franklin Township Boundary data obtained from Warren County Planning Dept. "This map was developed using the Warren County New Jersey, Geographic Information System digital data, but this secondary product has not been verified by Warren County and is not county-authorized."
 - Surface water data obtained from the NJDEP, Division of GIS.
 - Bedrock Geology data obtained from the New Jersey Geological Survey.

**FIGURE 5
 BEDROCK GEOLOGY**

NATURAL RESOURCE INVENTORY
 FRANKLIN TOWNSHIP
 WARREN COUNTY, NEW JERSEY

Legend

	Folds
	Faults
	County Boundary
	Municipal Boundaries
	Ponds/Lakes
Streams	
	Streams
	Morris Canal (Dry)
	Roads
	Parcels

Princeton Hydro