



Historic Wagon Roads in Bluestone Wild Forest: Historic bluestone quarries in Bluestone Wild Forest, dating back to about 190 years, were integrated via a tributary wagon road network. Until recently, 19th century bluestone quarries were viewed in isolation within the forest. However, all quarries were connected along a road network on which heavily laden horse drawn wagons transported stone to docks in Wilbur. The attached GIS map depicts reconstruction of this relict wagon road network, over 20 miles to date. Reconnaissance, field mapping, and topographic analysis were used to identify roads and numerous quarries. Metal rimmed wagon wheels wore grooves in roads still visible today, some deeply cut into bedrock (to 1.2 feet). At least three of these old wagon roads project into the proposed 850 Route 28 development property. Many of these old wagon roads have become trails used today.



Deep wagon wheel ruts in bedrock.

Quarry Types: Geologic assessment of quarries in Bluestone Wild Forest reveals four distinct types ranging from most to least productive. Foremost are long cliff quarries ranging from those with sandstone from the ground surface downward to those with a thick crumbly shale overburden “top” requiring removal prior to reaching marketable underlying sandstone beds. Two of the very best examples of no overburden vs. shale overburden are found in the Hemlock (left photo below) and Oak (middle photo) cliff quarries, respectively. Sandstone was also exploited from open pit quarries, long and short trenches (right photo), and from boulders either excavated from within glacial deposits or found loose on the ground surface. Numerous small excavations might be termed “wildcat quarries” as they were exploratory in nature and are generally located close to wagon roads. Most expansive quarries are preferentially oriented along prominent fracture directions.



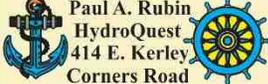
Wagon Road Engineering: Quarry workers went to great effort to engineer roadbeds suitable for heavy wagon traffic. A discerning eye will notice short and long road sections filled, graded, or entirely constructed with quarry rubble (to 250⁺ feet), ramps crossing low wetlands and grading to quarry exposures (right), notched hillslopes, and loops constructed to connect quarries and direct wagon flow.



Laid stone pillar alongside a water-filled pit quarry

Relict Artifacts: Artifacts found within this historic quarry district include wagon roads, quarries, vast rubble piles, building foundations, laid stone pillars, cut dimension stones, wagon wheel parts, and a 46-inch long, flat-bladed, pry bar used to split bluestone along bedding plane partings (see header above). In addition, this road network linked stone wall enclosed pastures, an 1800s bluestone house, and an historic railway station. Clearly, wagon roads and quarries extend throughout the proposed development site and beyond, requiring broad oversight by a quarry master or lessee.



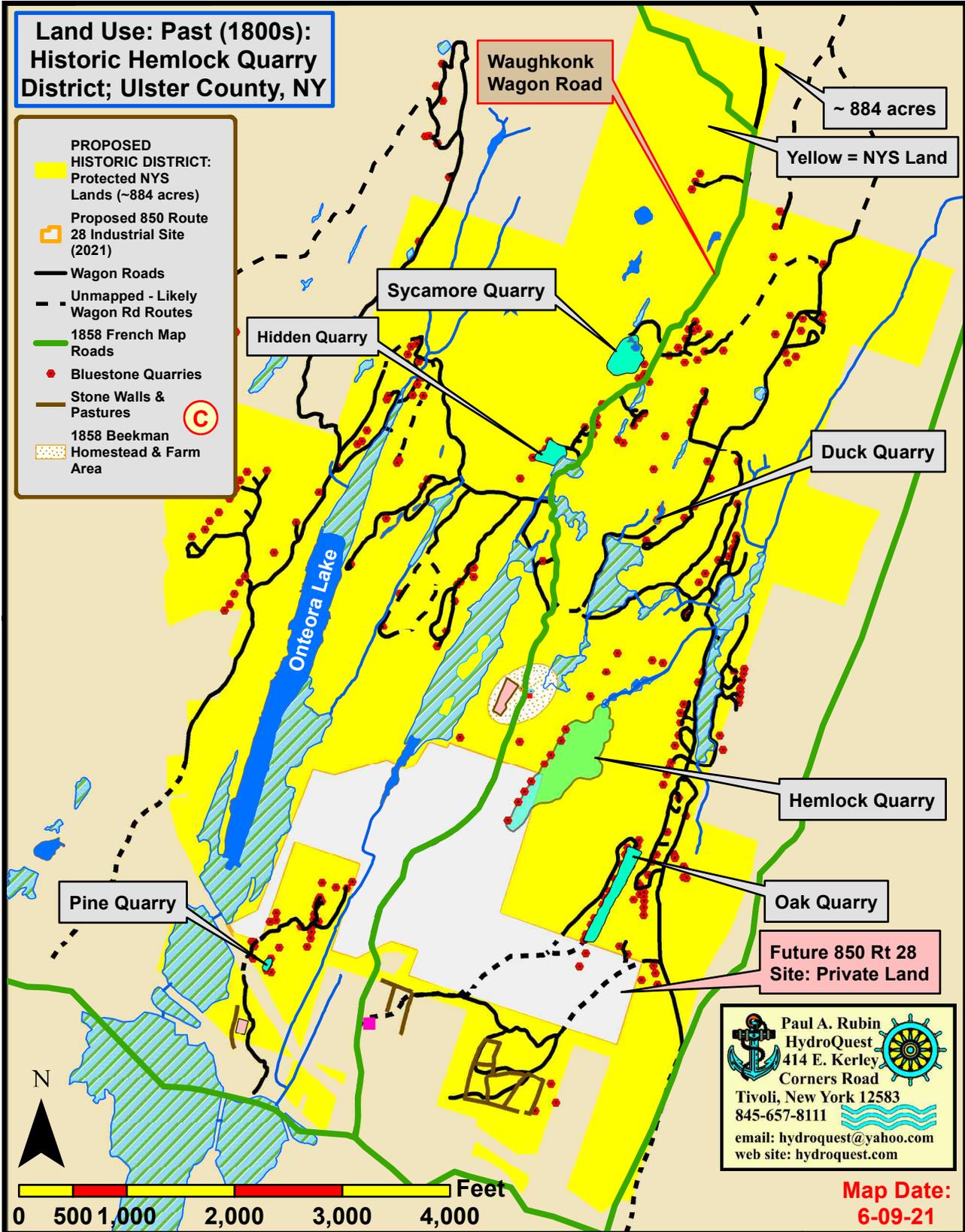


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**Land Use: Past (1800s):
Historic Hemlock Quarry
District; Ulster County, NY**

-  PROPOSED HISTORIC DISTRICT: Protected NYS Lands (~884 acres)
-  Proposed 850 Route 28 Industrial Site (2021)
-  Wagon Roads
-  Unmapped - Likely Wagon Rd Routes
-  1858 French Map Roads
-  Bluestone Quarries
-  Stone Walls & Pastures
-  1858 Beekman Homestead & Farm Area



Waughkonk Wagon Road

~ 884 acres
Yellow = NYS Land

Sycamore Quarry

Hidden Quarry

Duck Quarry

Hemlock Quarry

Oak Quarry

Pine Quarry

Future 850 Rt 28 Site: Private Land

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**Map Date:
6-09-21**