Massachusetts Department of Conservation and Recreation

Division of Water Supply Protection, Office of Watershed Management

Forest Management Project Proposal Summary for Public Comment

Location, goals, and summary of proposed forest management.

Proposal Summary Item	Item Information/Description
Lot Proposal ID	**WA-26-222**
Fiscal Year	2026
Watershed	Wachusett
Town(s)	West Boylston
Forester	Greg Buzzell
Estimated Acres by Treatment Type	Up to 3 acres in regeneration patch cuts and about 28 acres of partial overstory removal to establish regeneration.
Total Proposal Acres	56
Block	n/a
Compartment and/or Working Unit	222
Location and Boundary Description	This area is bounded on the west side by Lancaster Street (Rt. 110) and on the north, east and south sides by internal woods roads that connect from Gate 30 to Gate 32.
Previous Proposal?	No
Project Goals and Summary Description	This 56-acre forest is in part land that was taken at the time of reservoir construction and partly land that was acquired in 1989 for the protection of water quality. Forests provide exceptional water quality protection and yield high-quality water. Active forest management can increase the resistance and resilience of these watershed protection forests to disturbance by deliberately diversifying forest age structure and species composition. The forest in this area is not sufficiently diverse, particularly in age structure with 58% greater than 80 years old and 3% less than 20 years old. This operation will result in no more than 2 acres or so of young forest due to the lack of adequate advance regeneration. These patches will be located in the limited areas where young seedlings and saplings of diverse species are already present. The primary focus of this operation will be to encourage the establishment of regeneration through the partial removal of the overstory.

Forest Cover Types and Acreages

Overstory Forest Types	Acres
Oak – hardwoods	18.2
Northern red oak	14.5
White pine - hardwoods	7.1

Understory Cover Types and Relative Importance

Understory Cover Type	**Relative area covered** (Dominant, Secondary, Minor, None)
Tree seedlings and saplings	Minor
Mountain laurel	None

Understory Cover Type	Relative area covered (Dominant, Secondary, Minor, None)
Mesic site - witch hazel, highbush blueberry	Dominant
Dry site -Huckleberry, blueberry	Minor
Mesic site - cinnamon fern, mixed hardwood	Minor
Hayscented fern	Minor
Invasive shrubs/vines	Minor
Other	

Forest Vegetation Description

Vegetation Topic	Description
General Description, Forest Composition, Stand History, and Harvest History	A sizable portion of this area was purchased in 1989 for the protection of the water supply. The remainder is part of the original properties that were acquired at the time of the construction of the reservoir. Much of the original property was described as "Chestnut 2"-6" in 1900. It was then "thinned" in 1901. A small area adjacent to Lancaster St. at Gate 32 was planted with white pine at a 6'x6' spacing in 1920. Today, the rest of the old property is primarily occupied by red oak, white oak and black oak. There are scattered chestnut saplings throughout which are the remnants of the chestnuts present in 1900 following the arrival of chestnut blight less than 20 years later. There's a younger patch of white pine, red maple, white oak and red oak that originated following some wind event approximately 40-50 years ago. The eastern portion nearer to Spring Brook also has many shagbark hickory, white ash and red maple. There are a few beech scattered throughout which are infected by beech leaf disease. The property acquired in 1989 has a different history. The eastern part originated in about 1938. The overstory is primarily red oak and white oak along with pignut and shagbark hickory and scattered white pine. The understory is dominated by witch-hazel. There were a fair number of large white pine saplings that have died due to lack of sufficient light although many survived in the south end of this part. Throughout, there are scattered large hickory saplings. The balance of this area to the west was farmed until more recently. Many of the stands originated in the 1950s and 1970s. Present in the overstory of these various stands are white pine, red oak, white oak, black oak, red maple and hickory. A few acres blew down in a severe thunderstorm in 1989 and is now occupied by a nice stand of red oak, white pine, red maple, sassafras and gray birch poles.
Advance Regeneration description	Sampling found adequate regeneration in just 6 of 98 plots taken (6%) in manageable areas. These are found in the far south end of the area and in the far north end near Lancaster St. There were marginally adequate levels of regeneration in another 21 plots (21%). These are found clustered throughout the area. The advance regeneration is primarily comprised of red maple and white pine along with shagbark and pignut hickory, red oak, white oak, black birch, sassafrass and American beech.
Terrestrial Invasive Plants description	Invasive species were found in 15% of the plots. All but one of these are in the wetland and abandoned field areas in the western part of this area. The species present are buckthorn, oriental bittersweet and multifora rose. Only one plot in the mature, manageable part of this area had any invasives and this was immediately adjacent to the heavily invade wetland.

Description of Wetland Resources Present

Resource Type	Description of resources present
Wetlands	There's wetland in the western part of the area near Gate 30 and another to the southeast.
Streams	There's a small intermittent stream in the western part of the area near Gate 30 that flows south and is a tributary of Lamson Brook. Another small intermittent stream flows into the wetland to the southeast and then out of that wetland, flowing northwest into the first-mentioned stream. In the northeast corner of this area is a short stretch of Spring Brook which flows to the north.
Vernal pools	Verified pools 307 and 308 are present in the south end of this area and are in or near the 6-acre shrub swamp.
Seeps	None known

Description of Soils by Hydric Class

Soil Hydric Classes	% of area	Soil series and any further comments
Excessively Drained	0	
Well-drained Thin	0	
Well-drained thick	64	Paxton fine sandy loam
Moderately well-drained	0	
Poorly to very poorly drained	34	Ridgebury fine sandy loam

Proposed Silvicultural Activities

Topic	Description
Site Selection and Silvicultural Objectives	This working unit was selected due both to the lack of age diversity in the forests of this subwatershed and in this working unit itself. Most of this area is within subwatershed #1 (Reservoir Shoreline North). Only 7% of the forest stands within this subwatershed are 20 years old or less. Within the 56 acres of this working unit, only 3% are 20 years old or less while 58% of the stands are more than 80 years old. The age structure of this working unit is as follows: 3%, 0-20 years old; 5%, 21- 40 years; 25%, 41-60 years; 9%, 61-80 years; 25%, 81-100 years; 33%, 100+ years old. The oldest stands date to about 1885 making them 140 years old. Given the lack of young stands in this area and given the general lack of adequate advance regeneration, the primary goal will be to encourage the establishment of regeneration comprised of species well suited to this site with the long-term goal of increasing the proportion of young forest stands in this area.
Silviculture Prescription	In the very limited areas where there is adequate advance regeneration, it will be released by the removal of the overstory in patches. These are unlikely to total more 3 acres. Otherwise, the overstory will be partially removed in an irregular pattern with up to 50% of the stocking removed. These areas of partial removal will be located where the species composition and quality of the trees in the overstory are the least desirable. This will occur on as much as half of the 56 acres in blocks up to about 5 acres in size. Particular attention will be paid to minimizing the presence of black birch as a seed source. After the operation, the age structure of the forest is estimated to be: 8%, 0-20 years old; 5%, 21-40 years; 25%, 41-60 years; 9%, 61-80 years, 25%, 81-100 years and 28%, 100+ years old.

Climate Change Considerations: DWSP has determined that the decision to implement this project is consistent with EEA climate goals and guidelines and agency land management objectives. Carbon and climate change considerations specific to the activities proposed for this project are discussed below.

Proposed Activity	Alignment of Activity with Climate Oriented Strategies and Recommendations
Partial and Variable Overstory Removal. Regeneration Establishment.	Partial cutting via single trees or small groups in a mature stand can advance a variety of management objectives as well as **climate-smart practices**. Single tree or very small group removals, if used exclusively and repeatedly, will perpetuate an **uneven-aged stand condition** with a species mix shifted towards higher shade tolerance. However, this type of harvest can also serve within an even-aged system to establish regeneration of species of lower shade tolerance under a partial canopy for subsequent release using larger group or patch cuts (irregular shelterwood) or complete-stand overstory removals. Advantages of partial overstory removals include, but not limited to: • Partial cutting **retains carbon on the landscape** for extended periods while regeneration develops. • Reducing competition for resources improves growth and **carbon sequestration** rates on residual trees. • Promotion of a diversity of age classes enhances overall forest **resiliency**. • Maintenance of continuous forest corridors provides for wildlife habitat. • As part of a regeneration system this method can be used to help guide species diversity towards more **future-adapted mixes**.

Proposed Activity	Alignment of Activity with Climate Oriented Strategies and Recommendations
Patch Regeneration Cut	Patch cutting is a regeneration technique that straddles the boundary between classic even-aged and uneven-aged forest management systems. Foresters select appropriate areas ('patches' or 'groups') covering a portion of the stand to harvest rather than removing the entire stand and then return periodically to repeat the process in other portions of the stand. In using patch cutting there is no final regeneration cut. Patch size and shape are determined by many different factors including overstory condition, desired species composition in the regeneration layer, other desirable herbaceous and woody vegetation, location, stand re-entry period, etc. Harvesting in patches aligns with many **climate-smart forestry practices**: • Increasing **structural diversity** improves resiliency by reducing the impact of age/size related disturbances. • Extending regeneration periods minimizes short term impacts to groundwater and nutrient cycling. • Partial stand overstory removals more closely align with **natural disturbance patterns**. • More **carbon is left on the landscape** for longer periods, and within-patch live tree, snag, and coarse debris retention allow for development of old forest characteristics. • Can also be used as opportunities to increase the stocking of **future climate adapted species, current climate imperiled species**, or other types of desirable vegetation.
General/other Climate Change Considerations	

Equipment and Access Constraints and Considerations

Constraint Topic	Description and Considerations
Proposed Equipment requirements	Forwarding and mechanized felling will be required. On the limited acreage where advance regeneration is present and overstory removal occurs, this equipment is the best option to minimize damage to the regeneration.
Proposed wetland or stream crossings	None
Further wetland comments	None
Vernal Pools	All restrictions regarding forest management in proximity to vernal pools as stated in the 2017 Land Management Plan will be followed.
Access improvements needed	None needed.
Other EQ issues	None
In-kind Services	None

Constraint Topic	Description and Considerations
Other Access Concerns (parking, trails, etc.)	None

Subwatershed Analysis

Sub-Watershed number/name	Total DCR-owned acres in this sub-watershed	Acres regenerated on DCR land in the last 10 years in this sub-watershed	Total DCR-owned acres remaining for regenerating up to the 25% per 10 year limit for this sub-watershed	Acres in this sub-watershed that are part of this proposed lot
1/Reservoir Shoreline North	1488	12	304	56

Additional comments on Subwatershed analysis:

Wildlife and Habitat Observations and Considerations

Wildlife/Habitat	Observations and Considerations
Natural Heritage Priority Habitats?	None
State Listed species present:	None known
Rare Natural Communities:	None known
General Wildlife Comments	This area is within the larger area directly around the Wachusett Reservoir where a high deer population was inhibiting the ability of the forest to regenerate. This led to a controlled hunt beginning in 2018 that has since transitioned to a general hunt under a 5-year permit. This operation will be the first to take place since the beginning of the efforts to control the deer population and will serve as a sort of test bed to help determine whether tree regeneration can become established under these new conditions. Trees with active raptor nests (several inactive nests are present) will be avoided during harvest.

Cultural Resources Description and proposed protection measures

Cultural Resource	Description and proposed protection measures
Historical features present; comments regarding protection	There are stone walls running north-south that essentially define the boundary between the stream and the area heavily infested with terrestrial invasive species to the west and the forest to the east. No crossings of these stone walls are planned.
Description of site characteristics in relation to Ancient sites modeling or other verified evidence	While nearly this entire area is less than 7% sloped, it is also very stony.

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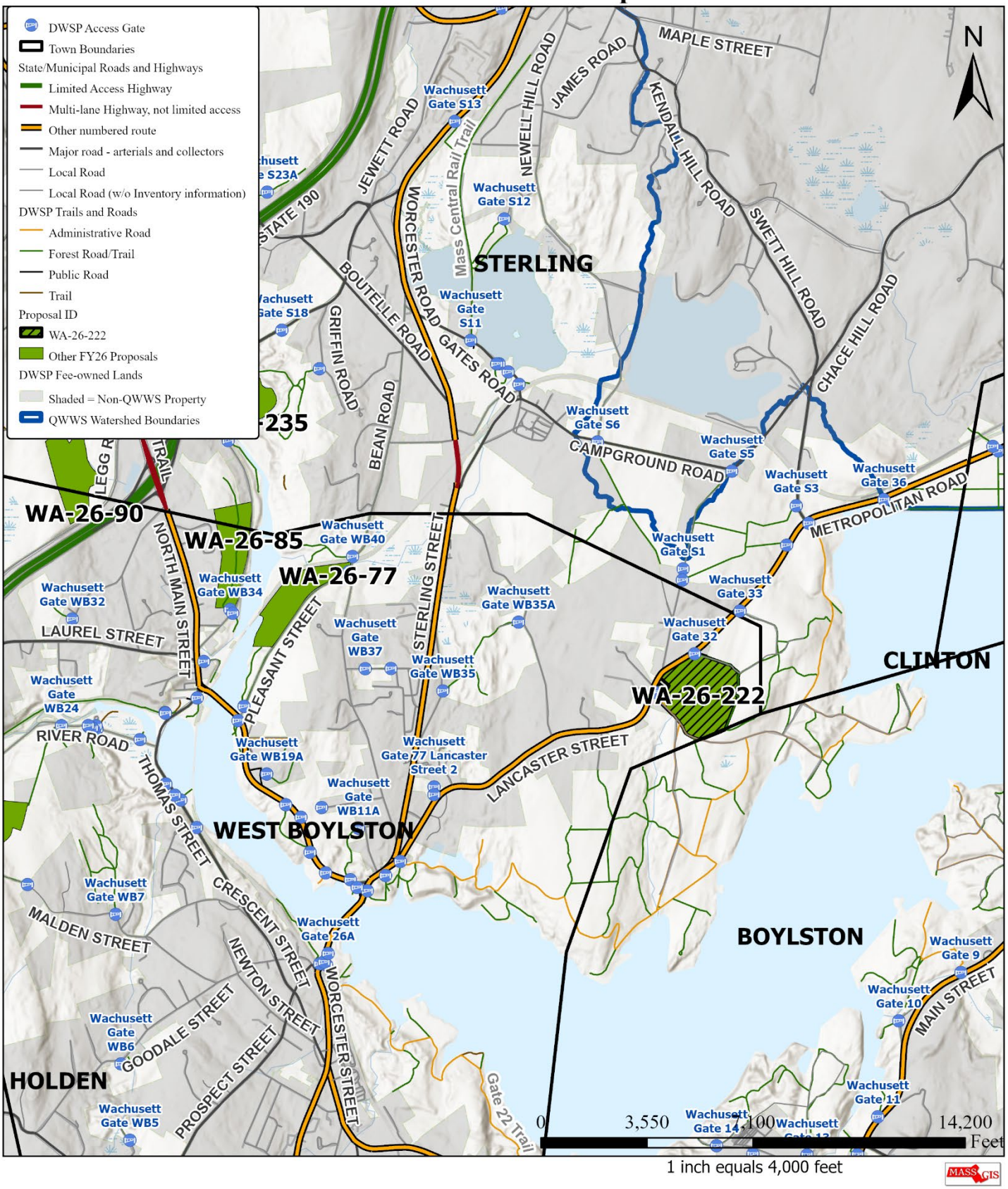
WA-26-222 -- Locus Map



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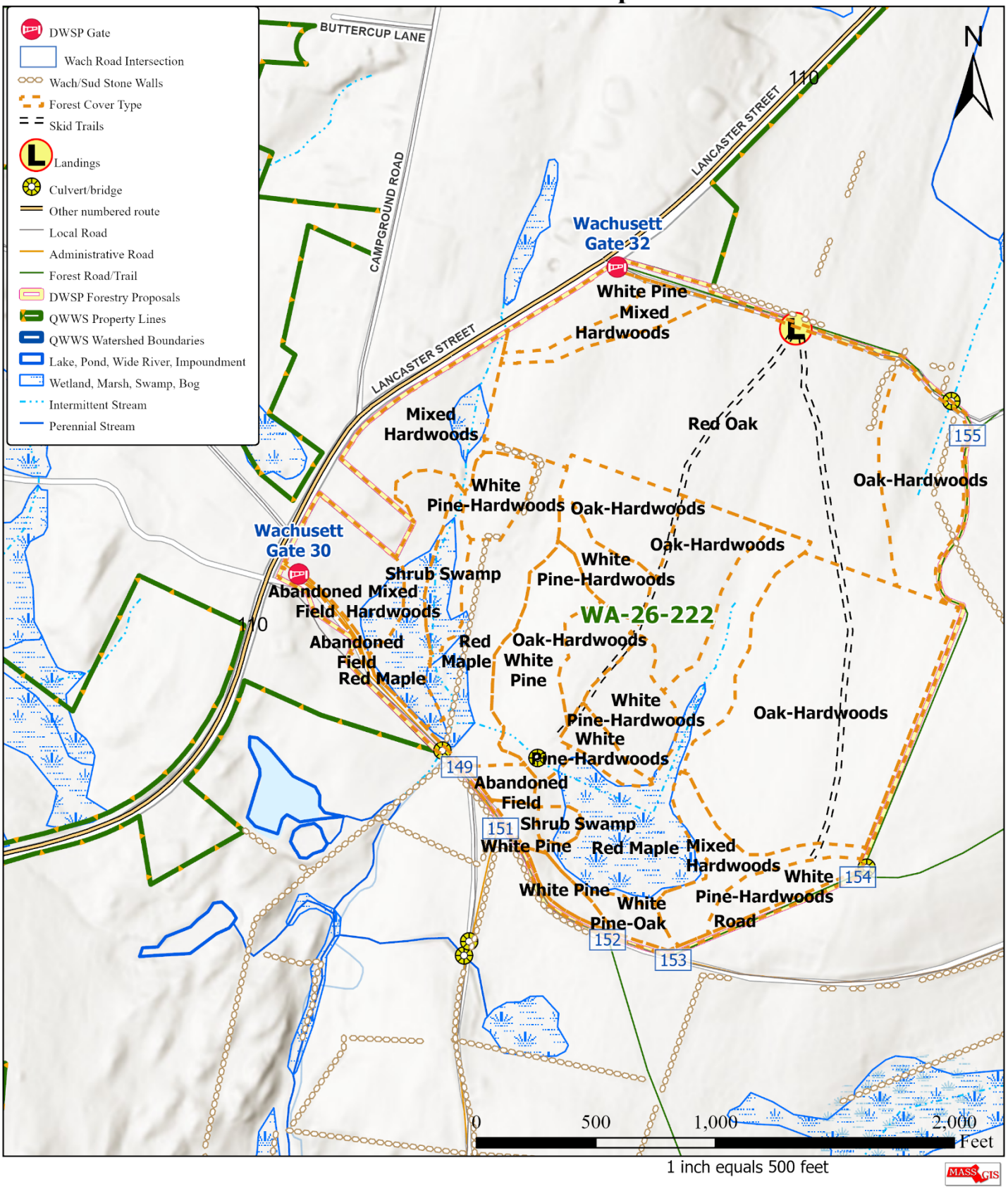
WA-26-222 -- Stand Map



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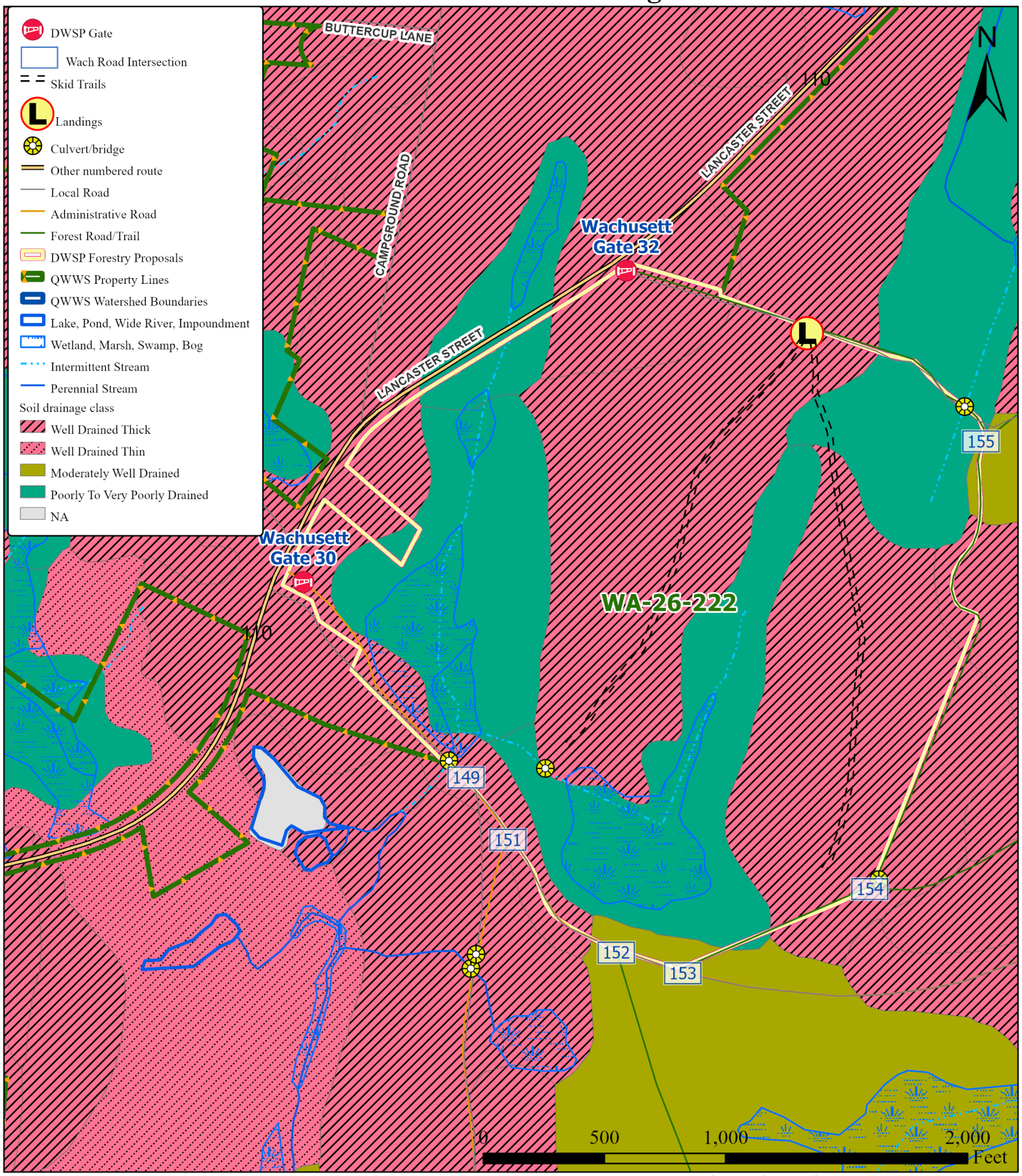
WA-26-222 -- Soil Drainage Classes



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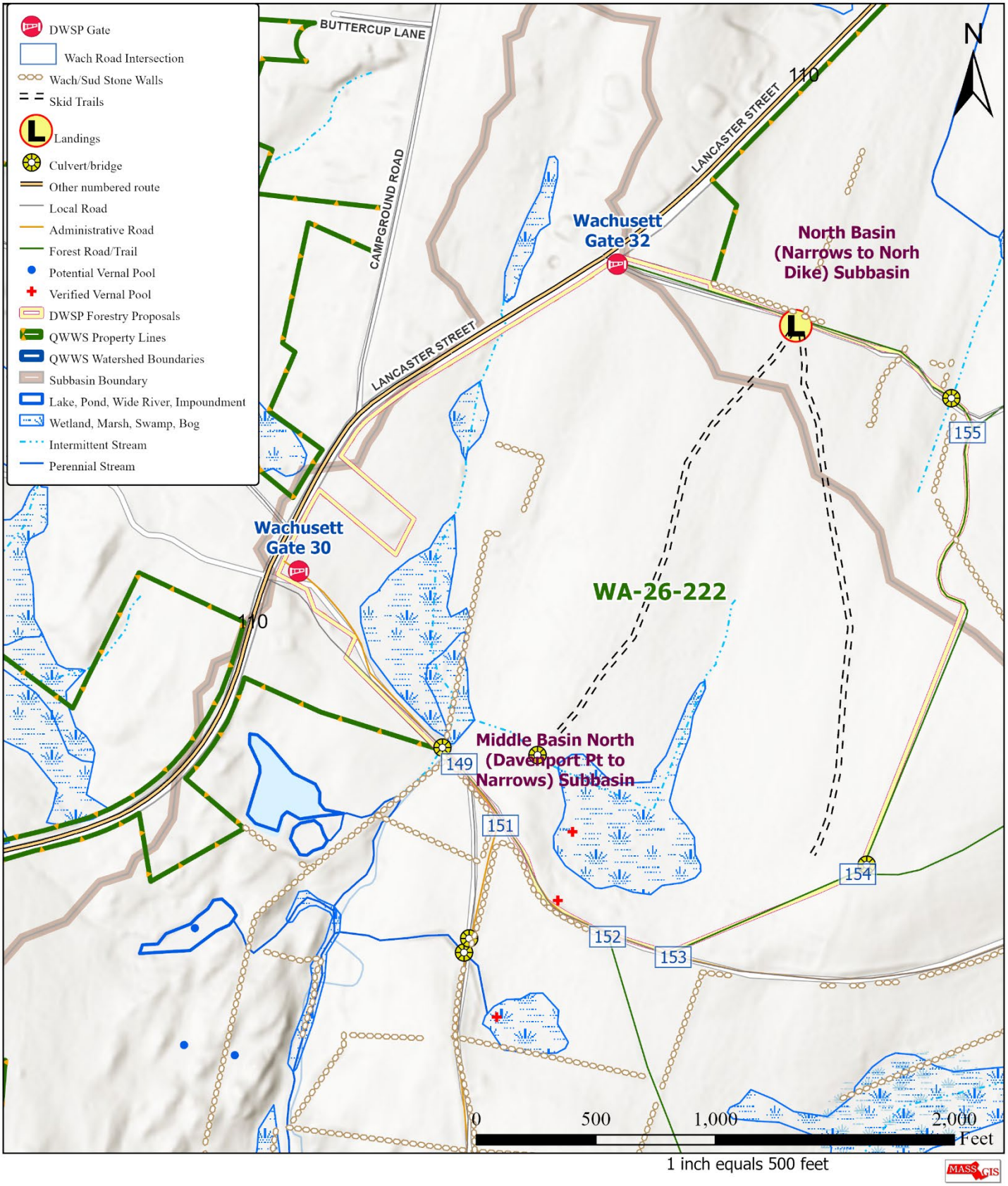
WA-26-222 -- Wetlands and Wildlife Resources



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WA-26-222 -- Cultural Resources and Landscape Characteristics