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-26-78**
Fiscal Year	2026
Watershed	Wachusett
Town(s)	West Boylston and Boylston
Forester	Greg Buzzell
Estimated Acres by Treatment Type	11 acres in regeneration patch cuts and 10 acres of thinning.
Total Proposal Acres	32.8
Block	n/a
Compartment and/or Working Unit	78
Location and Boundary Description	Off Hartwell St. and Temple St. along the West Boylston-Boylston town line. It is bound on the west side by power line; on the north side Muddy Brook and Temple St.; on the east side by a line through the woods along the very top of steep, east-facing slopes and on the south side by a stone wall.
Previous Proposal?	No
Project Goals and Summary Description	Most of this 32-acre forest was acquired in the 1990s 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 75% greater than 80 years old and 0% less than 20 years old. With plenty of young trees in the understory, this operation will result in up to 10 acres of young forest through the removal of the older overstory in patches. These patches will range in size up to 2 acres and will be located throughout the area taking advantage of where young seedlings and saplings of diverse species are already present.

Forest Cover Types and Acreages

Overstory Forest Types	Acres
Red Oak	18.0
Oak-Mixed	9.8
Oak – hardwoods	6.0
Mixed pine-Oak, White pine, Mixed Hardwood	7.9

Understory Cover Types and Relative Importance

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

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

Forest Vegetation Description

Vegetation Topic	Description
General Description, Forest Composition, Stand History, and Harvest History	Only a couple acres of land adjacent to Muddy Brook is older property that was acquired at the time of reservoir construction and were planted to white pine in 1904. The rest of the area was acquired in two parcels, one in 1990 and the other in 1995. All of this area has received forest management operations in the past. All of it was thinned in the 1990s with the goal of encouraging the establishment of regeneration and much of the regeneration that is present today dates to this time period. Then, the entirety of this area was treated over two operations by the Asian longhorned beetle eradication program in 2010 and 2012. These operations focused on the removal of host species of the Asian longhorned beetle. In this area these would have primarily been red maple and black birch which were a minor component of all of these stands. The 18 acres of red oak stand on either side of Hartwell St. are almost entirely comprised of red oak in the overstory. There was nothing more than scattered mortality to the oak from the spongy moth infestation of 2019. The understory is dense, large sapling white pines along with some oak, red maple, black cherry, black birch, hickory and beech. There is little shrub layer except for the part of this area north of Hartwell St. on the west slope near Muddy Brook where there is witch-hazel. The stands in the south end of the area are comprised primarily of white pine, red oak, pitch pine and scarlet oak. There is excellent regeneration in these stands as well comprised of white pine, red oak, red maple, black birch, white oak and hickory. The shrub layer is primarily huckleberry with a few scattered scrub oak.
Advance Regeneration description	Sampling found adequate regeneration in 72% of the plots along with marginal regeneration in another 25% of the plots. It is dominated by white pine along with red oak, red maple, black birch, white oak, black cherry, hickory and beech.
Terrestrial Invasive Plants description	Sampling found invasives present in 5% of the plots. Most of these are north of Hartwell St. in the wetter areas near Muddy Brook and a small intermittent stream along the edge of the power line. In all cases, oriental bittersweet is the invasive that is present.

Description of Wetland Resources Present

Resource Type	Description of resources present
Wetlands	None.
Streams	None.

Resource Type	Description of resources present
Vernal pools	None known.
Seeps	None known.

Description of Soils by Hydric Class

Soil Hydric Classes	% of area	Soil series and any further comments
Excessively Drained	17	Hinckley and Windsor sandy loams
Well-drained Thin	7	Chatfield-Hollis-Rock outcrop complex
Well-drained thick	69	Paxton fine sandy loam
Moderately well-drained	7	Woodbridge and Sudbury fine sandy loams
Poorly to very poorly drained	0	

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 these subwatersheds and in this working unit itself. Within sub-watershed #2 (Reservoir Shoreline South), only 12% of the forest stands are 20 years old or less. Within sub-watershed #8 (Muddy Brook), 0% of the forest stands are 20 years old or less. Within the 32.8 acres of this working unit, 0% are 20 years old or less while 75% of the stands are more than 80 years old with 52% greater than 100 years old. The age structure of this working unit is as follows: 0%, 0-20 years old; 4%, 21- 40 years; 9%, 41-60 years; 12%, 61-80 years; 23%, 81-100 years; 52%, 100+ years old. The oldest stands date to 1900 making them 125 years old. Given the lack of young stands in this area and given the presence of good advance regeneration comprised of species well suited to this site, the primary goal will be to increase the proportion of young forest stands in this area.
Silviculture Prescription	With so much advance regeneration present throughout this area, there should be no difficulty in achieving the goal of creating a new age class on 1/3rd of the area. This will be accomplished by the removal of the overstory in patches that average about 1 acre with a maximum size of 2 acres. These will total as much as 11 acres. They will be distributed throughout the proposed area while generally avoiding the limited areas where bittersweet is present. Partial cutting will occur between openings on up to 10 acres and will be focused on the areas where it will benefit the pitch pine and scrub oak through the removal of much of the white pine in the overstory. After the operation, the age structure of the forest is estimated to be: 28%, 0-20 years old; 4%, 21-40 years; 9%, 41-60 years; 12%, 61-80 years, 15%, 81-100 years and 32%, 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
Patch Regeneration Cut **(see page 3, Silvicultural Prescription)**	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	This silvicultural approach prioritizes forest resilience by addressing the significant age-class imbalance and promoting climate-adapted species regeneration. With over 75% of the working unit over 80 years old (including more than half older than 100 years) the creation of a younger age class is critical for long-term ecological stability. This approach supports forest resilience by introducing structural and compositional diversity- key factors for withstanding climate stressors like increased storm intensity, drought, and pest outbreaks. Patch cutting mimics natural disturbance, retains carbon in uncut areas, and fosters regeneration without full overstory removal. The reliance on regeneration composed of climate-resilient species such as red oak, hickory, and white pine enhances adaptive capacity. Selective thinning to support pitch pine and scrub oak also promotes fire-adapted, drought-tolerant species that may gain ecological importance under future climate scenarios.

Equipment and Access Constraints and Considerations

Constraint Topic	Description and Considerations
Proposed Equipment requirements	Forwarding and mechanized felling will be required. This gives the best chance to adequately protect as much of the advance regeneration as possible which will be especially challenging given the large size of much of it.

Constraint Topic	Description and Considerations
Proposed wetland or stream crossings	None planned.
Further wetland comments	None.
Vernal Pools	None.
Access improvements needed	None.
Other EQ issues	None.
In-kind Services	None.
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
2/Reservoir Shoreline South	538	20	114.5	21.3
8/Muddy Brook	124	2	29	11.5

Additional comments on Subwatershed analysis:

Wildlife and Habitat Observations and Considerations

Wildlife/Habitat	Observations and Considerations
Natural Heritage Priority Habitats?	The entirety of this area is within the NHESP Priority Habitat of Rare Species polygon #1373.
State Listed species present:	NHESP has determined that certain state-listed sensitive species or habitats may exist within the lot proposal area. To protect them from unnecessary disturbance, detailed information regarding affected species and their locations is not included in this report. DWSP will coordinate with NHESP and follow recommendations to protect these species during the proposed activity.
Rare Natural Communities:	None known.
General Wildlife Comments	No unusual wildlife sightings were recorded during the site visits. Release of advanced deciduous regeneration will benefit wildlife species in this area by diversifying the forest structure and composition. Early successional species such as Eastern Towhee and Chestnut-sided Warbler will benefit. These openings also provide benefits to foraging bats. The retention of mature stands of diverse composition in between patch cuts will continue to benefit existing wildlife species of the area. Tree cavities of various sizes exist within the area. Active stick nests will be avoided during logging activities.

Cultural Resources Description and proposed protection measures

Cultural Resource	Description and proposed protection measures
Historical features present; comments regarding protection	1.There's a cellar hole and raised pad made of rock and mortar near the power line south of Hartwell St. 2. Just south of Gate WB1 at the end of Hartwell St. there's an odd cluster of 4 wells that are all within 60' of each other. 3. There is a cellar hole made from large blocks of stone immediately adjacent to Muddy Brook. Presumably this was a mill. A saw mill on Muddy Brook is shown on Aaron Sawyer's 1795 map of Boylston that may be at this location. All of these features will be avoided to protect them from damage unless it is recommended that trees be removed from the immediate vicinity of any of them in order to provide protection from potential damage from tree roots.
Description of site characteristics in relation to Ancient sites modeling or other verified evidence	Very little of this area is less than 7% sloped. There is not a lot of surface stone except along the eastern side where there are significant bedrock outcrops.

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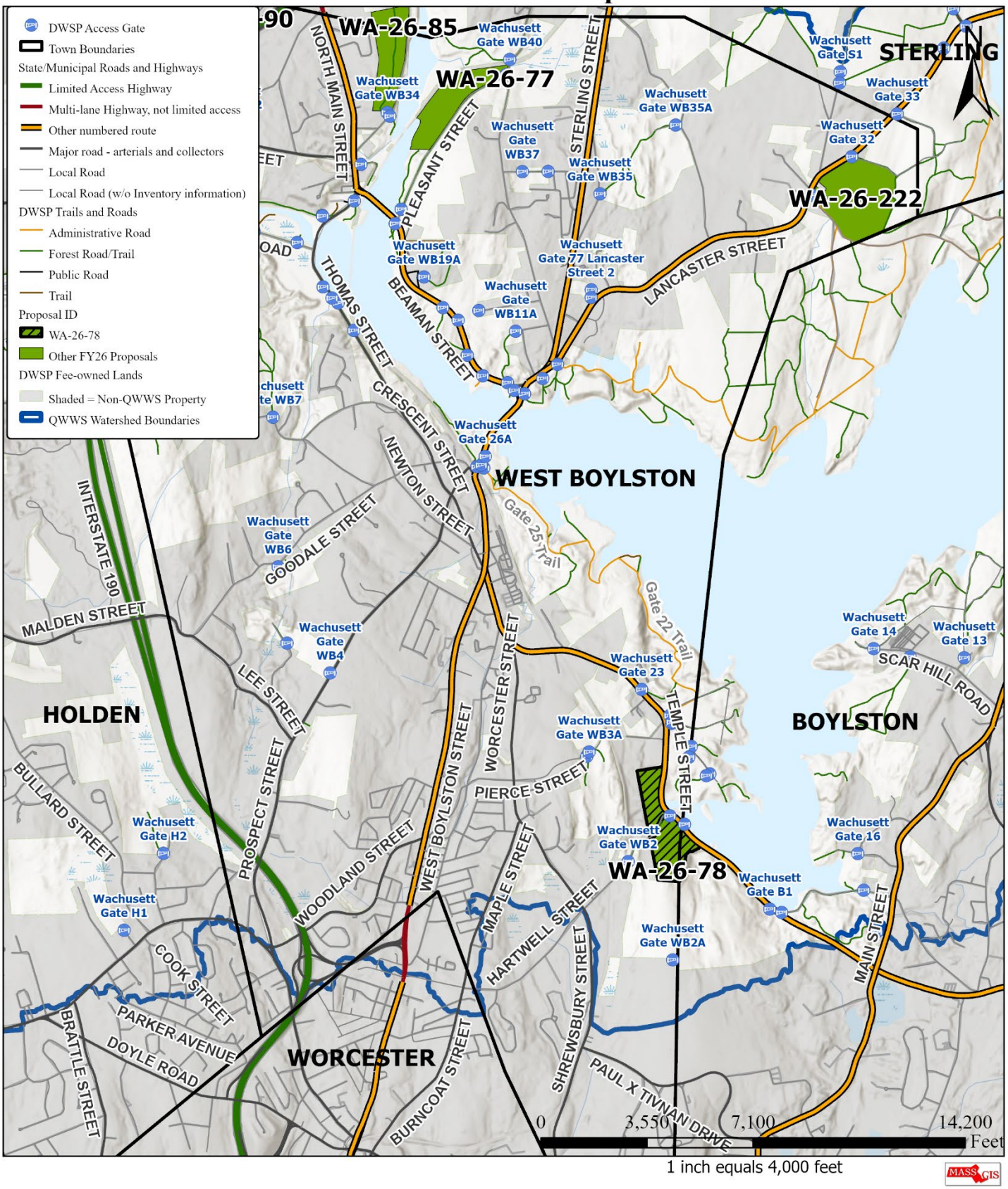
WA-26-78 -- Locus Map



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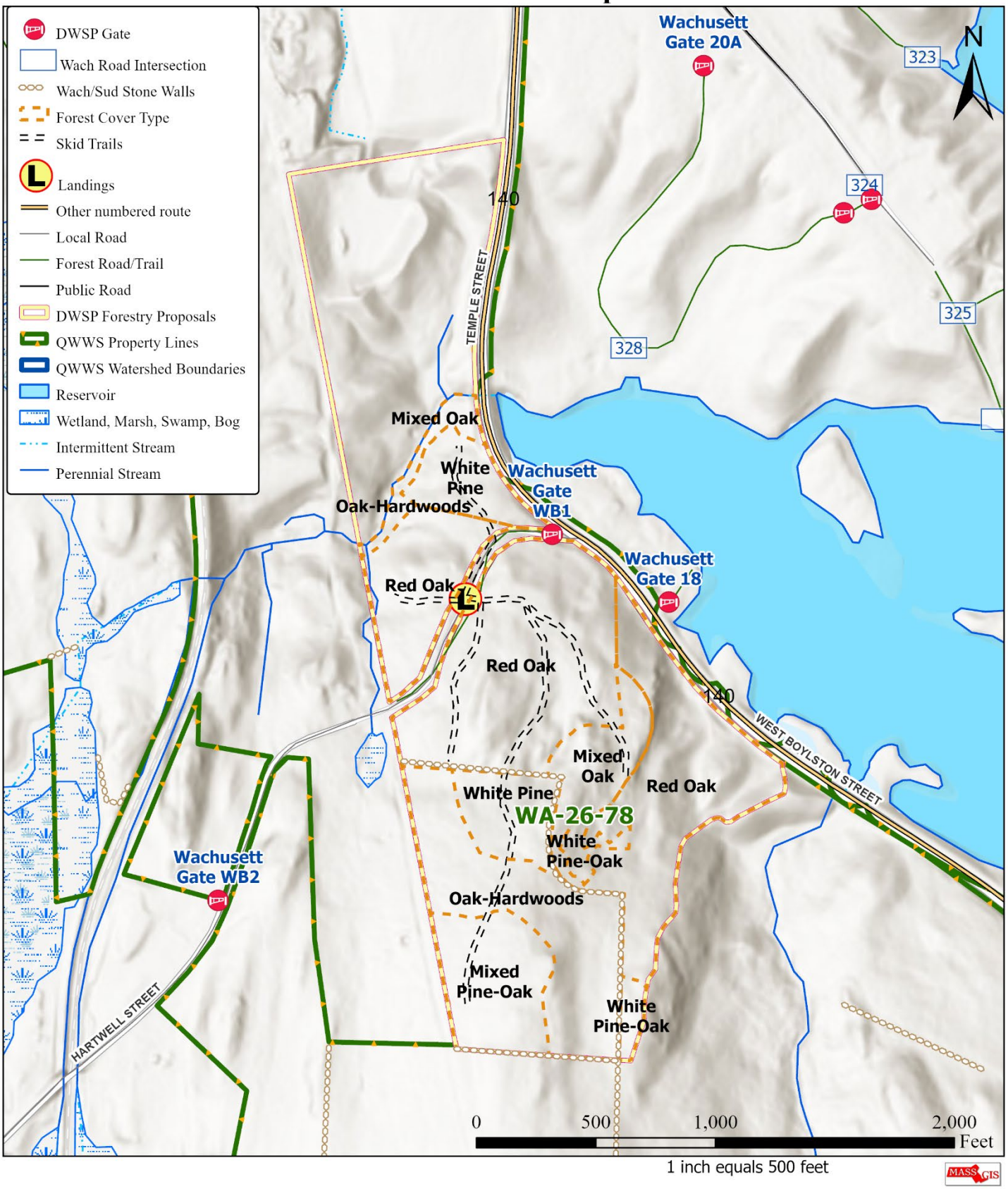
WA-26-78 -- Stand Map



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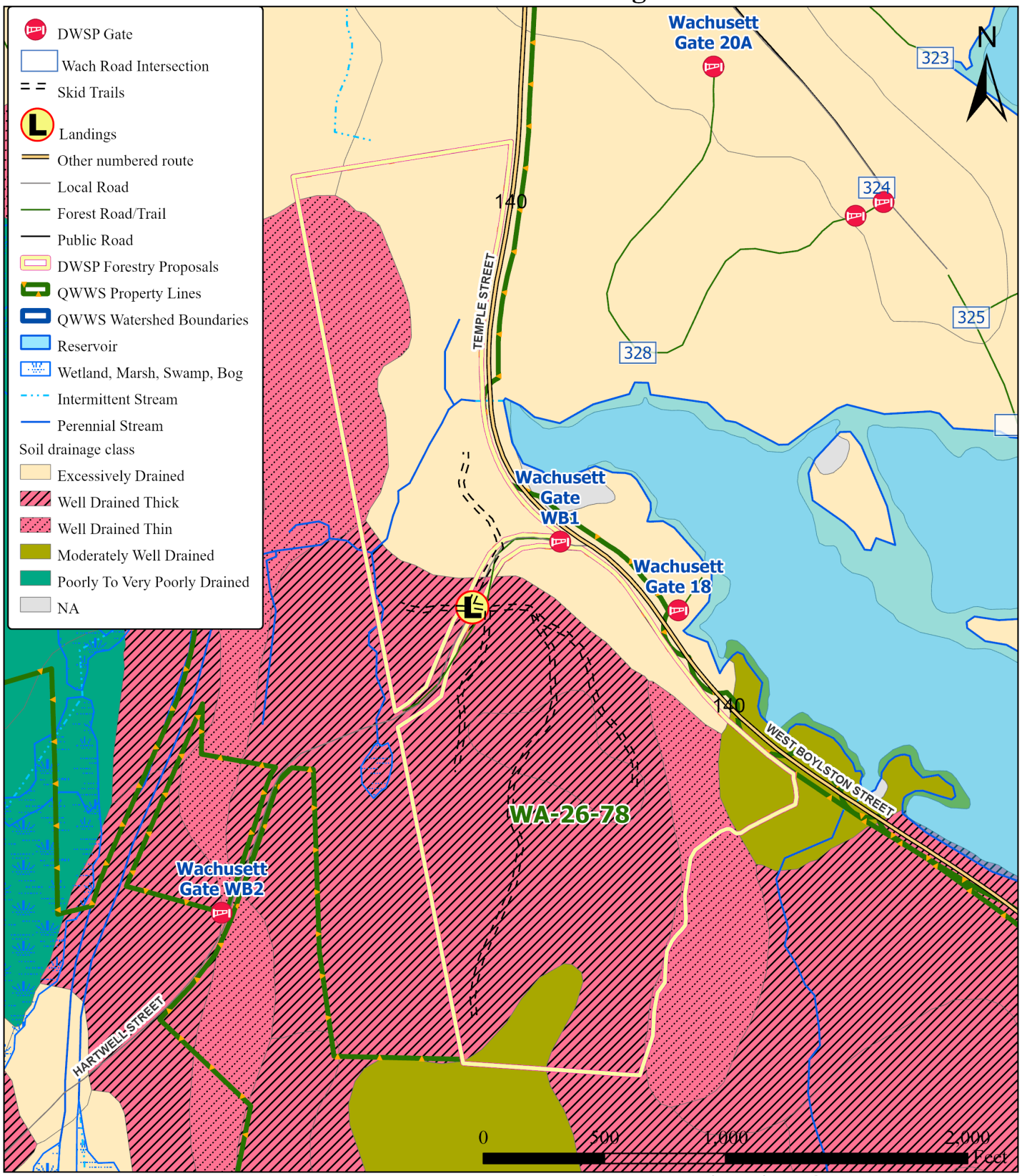
WA-26-78 -- Soil Drainage Classes



1 inch equals 500 feet

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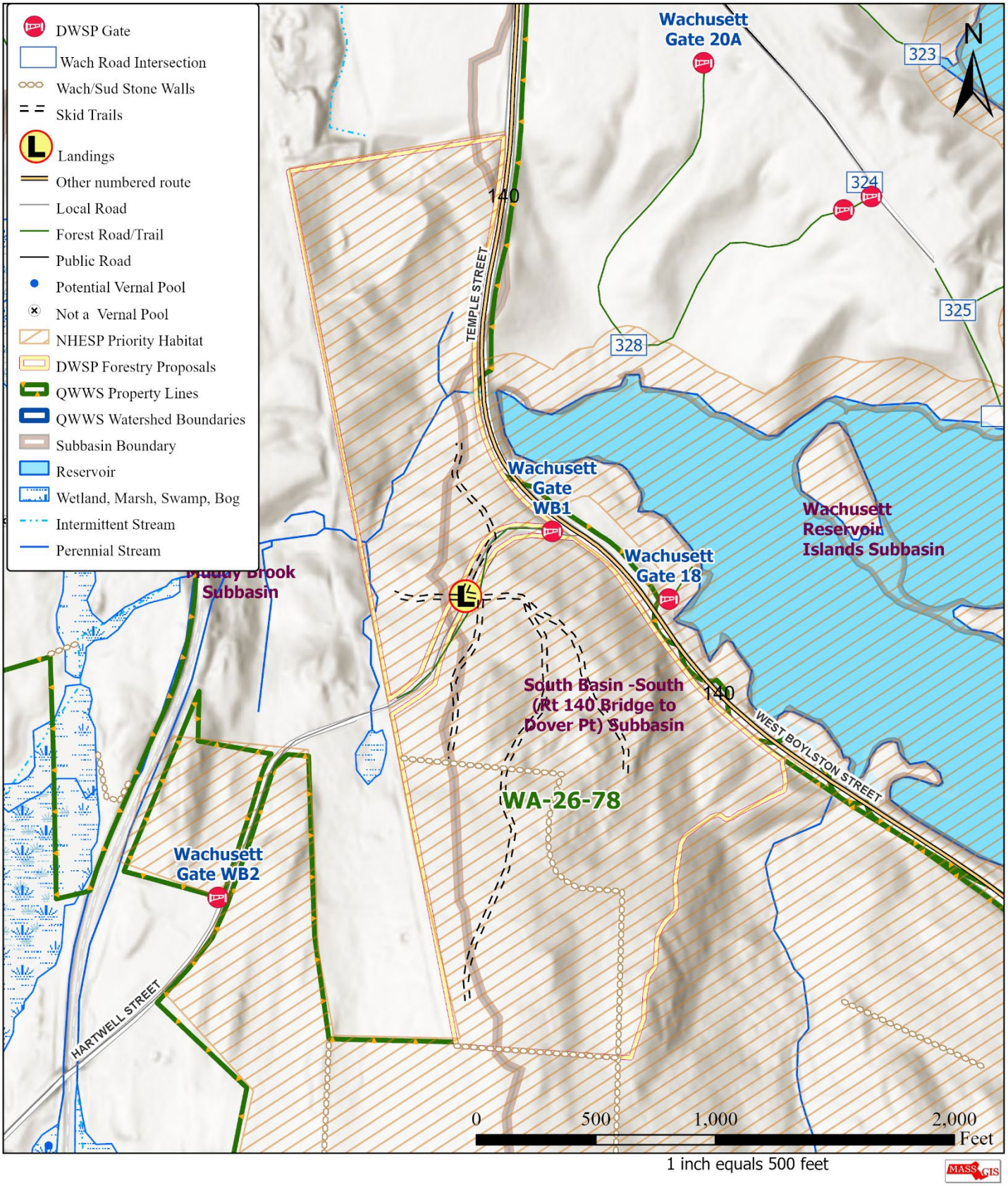
WA-26-78 -- Wetlands and Wildlife Resources



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WA-26-78 -- Cultural Resources and Landscape Characteristics