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-26-85**
Fiscal Year	2026
Watershed	Wachusett
Town(s)	West Boylston
Forester	Greg Buzzell
Estimated Acres by Treatment Type	12 acres in regeneration patch cuts
Total Proposal Acres	38.2
Block	n/a
Compartment and/or Working Unit	85
Location and Boundary Description	The south and west side are bound by property boundary line; the north side by an internal stone wall and partially by property boundary line and the east side by Waushacum Street.
Previous Proposal?	No
Project Goals and Summary Description	This 38-acre forest is part of the original lands that were acquired when the reservoir was constructed. 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 primarily red oak forest in this area is not sufficiently diverse, particularly in age structure with 100% greater than 80 years old. This operation will result in up to 12 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
White Pine - Oak	2.8
Northern red oak	32.7
White pine	1.5

Understory Cover Types and Relative Importance

Understory Cover Type	**Relative area covered** (Dominant, Secondary, Minor, None)
Tree seedlings and saplings	Dominant
Mountain laurel	None
Mesic site - witch hazel, highbush blueberry	Secondary

Understory Cover Type	Relative area covered (Dominant, Secondary, Minor, None)
Dry site -Huckleberry, blueberry	None
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	At the time of reservoir construction around 1900, this area was described as oak and chestnut sproutland. Prior to that, it was presumably a pasture given the stone walls and hilly character. In the far southwest corner, three small areas were planted, each less than an acre in size. One was planted with white pine in 1918. The second with Norway spruce in 1923 and the third with white pine and Scots pine in 1943. In the far northeast corner on a small flat area at the base of the hill adjacent to John Dee Rd., a tree nursery was established following the closing of the Lamson nursery in Boylston. These nurseries were where over 4.5 million seedlings were grown and planted throughout the properties that were first acquired at the time of reservoir construction. White pines were planted here in 1931 after the nursery was abandoned. Today, the forest in these 38 acres is almost completely comprised of red oak, black oak and white oak along with far lesser numbers of pignut hickory, red maple, black birch and sugar maple. There are significant numbers of white pine in the northwest corner of this area. A forest management operation took place on these same 38 acres in 1982. It was a fairly heavy partial removal of the overstory designed to encourage the establishment of regeneration. It may have also been, in part, a salvage of dead oaks resulting from the historic spongy moth infestation of 1981. This was followed in 1989 by a severe thunderstorm that did scattered damage, blowing down and snapping off mature trees. This damage is heavier in the north end with progressively less farther south. The result of these disturbances is an understory and midstory of a variety of primarily hardwood species throughout much of this area. Present are red maple, red oak, black birch, black oak, hickory (both shagbark and pignut), white pine, white oak, sugar maple, sassafras and black cherry. In the south end, there is a lot of spruce regeneration due to the small Norway spruce plantation. In an area particularly heavily cut in 1982 there's a lot of paper birch and gray birch as well. Otherwise, the understory is dominated by witch-hazel and hazelnut with a little mountain laurel. An unfortunate result of the 1982 harvest is the presence of many basal wounds on overstory trees caused by careless skidding. These wounds were so severe that most have not healed after 43 years and have led to rot in the butt logs of many of these trees.
Advance Regeneration description	Sampling found that there is adequate regeneration in 44% of the plots and these are well distributed throughout the area. Marginally adequate regeneration was found in 30% of the plots. Present are red maple, red oak, black birch, black oak, hickory (both shagbark and pignut), white pine, white oak, sugar maple, sassafras, black cherry, paper birch, gray birch and spruce.
Terrestrial Invasive Plants description	Sampling found no invasives however oriental bittersweet was observed in the area of the old nursery.

Description of Wetland Resources Present

Resource Type	Description of resources present
Wetlands	None
Streams	None
Vernal pools	None
Seeps	None

Description of Soils by Hydric Class

Soil Hydric Classes	% of area	Soil series and any further comments
Excessively Drained	7	Merrimac and Hinckley sandy loams
Well-drained Thin	0	
Well-drained thick	93	Canton fine sandy loam
Moderately well-drained	0	
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 this subwatershed and in this working unit itself. Most of this area is within subwatershed #4 (Thomas, Quinapoxet and Stillwater Basins). Only 10% of the forest stands within this subwatershed are 20 years old or less. Within the 38 acres of this working unit, none are 20 years old or less while 100% of the stands are more than 80 years old with 96% more than 100 years old. The age structure of this working unit is as follows: 0%, 0-20 years old; 0%, 21- 40 years; 0%, 41-60 years; 0%, 61-80 years; 4%, 81-100 years; 96%, 100+ years old. The oldest stands date to about 1895 making them 130 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 the goal of having a forest with a diverse age structure with at least 3 age-classes distributed throughout both the subwatershed and within this specific area, the older overstory will be removed in patches. These patches may total as many as 12 acres which would be 1/3rd of the 38.2 acres manageable acres in this area. They will range in size from as small as 1/5th acre up to a maximum of about 2 acres. These will be as well distributed throughout the working unit as possible, taking advantage of where the advance regeneration is present. The Norway spruce, though non-native, provides some unique conifer cover and will be retained. After the operation, the age structure of the forest is estimated to be: 33%, 0-20 years old; 0%, 21-40 years; 0%, 41-60 years; 0%, 61-80 years, 4%, 81-100 years and 63%, 100+ years old.

General Climate Change Considerations:

This silvicultural approach focuses on enhancing forest resilience through age-class diversification and regeneration of climate-adapted native species. With 96% of the forest over 100 years old and no stands under 80 years, the management unit is structurally vulnerable to disturbances like pests, storms, and droughts, particularly under a changing climate. The proposed patch cuts mimic the natural disturbance pattern of these past disturbances by selectively removing overstory to take advantage of areas with advance regeneration in a planned, strategic manner. The advance regeneration includes species well-suited to warmer and more variable future climates, such as red oak, hickory, black birch, and white pine. The inclusion of pioneer species like paper and gray birch further improves adaptive capacity and rapid canopy closure, helping to stabilize microclimates and reduce erosion.

DWSP has determined that the decision to implement this project is consistent with EEA climate goals and guidelines and agency land management objectives. 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: Silviculture 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.
Additional Comments	

Equipment and Access Constraints and Considerations

Constraint Topic	Description and Considerations
Proposed Equipment requirements	Mechanized felling and forwarding will be required.

Constraint Topic	Description and Considerations
Proposed wetland or stream crossings	None needed.
Further wetland comments	None
Vernal Pools	None present
Access improvements needed	None needed
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
4/Stillwater Basin	599	19	150	38

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	No unusual wildlife sightings were recorded during the site visits. Tree cavities of various sizes were observed throughout the lot and will benefit nesting birds or denning mammals. Dead snags and live trees with large cavities or loose bark will be retained to the extent possible for wildlife value. A few raptor stick nests were observed though none appeared to be active.

Cultural Resources Description and proposed protection measures

Cultural Resource	Description and proposed protection measures
Historical features present; comments regarding protection	There's a stone wall in the north end of this area. It is not anticipated that this wall will need to be crossed.

Cultural Resource	Description and proposed protection measures
Description of site characteristics in relation to Ancient sites modeling or other verified evidence	Nearly this entire site is greater than 7% sloped and much of it is more than 15% sloped. There is significant microtopography due to both the stony nature of the soil and numerous pit-and-mounds resulting from the storm of 1989.

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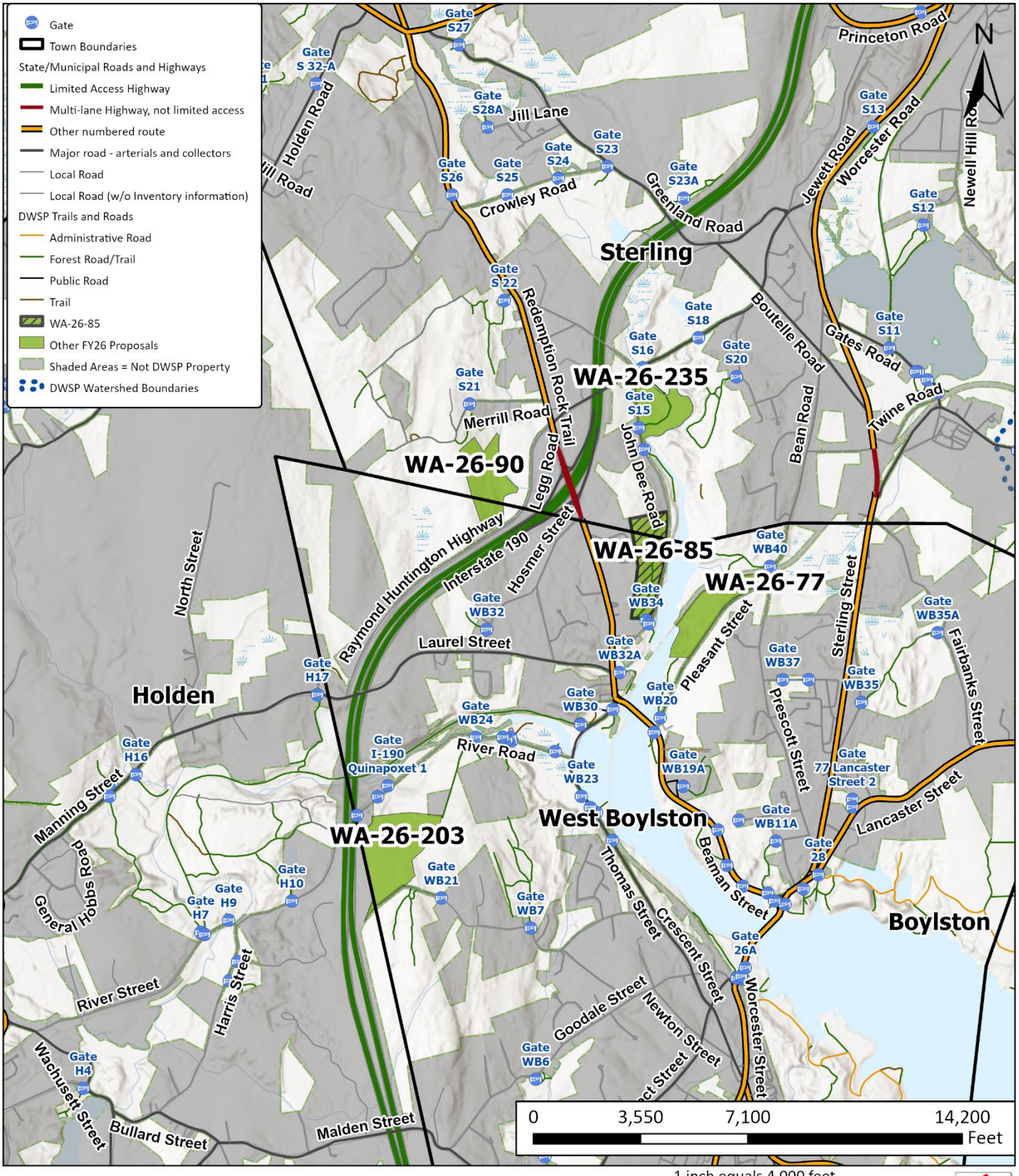
WA-26-85 -- Locus Map



1 inch equals 4,000 feet

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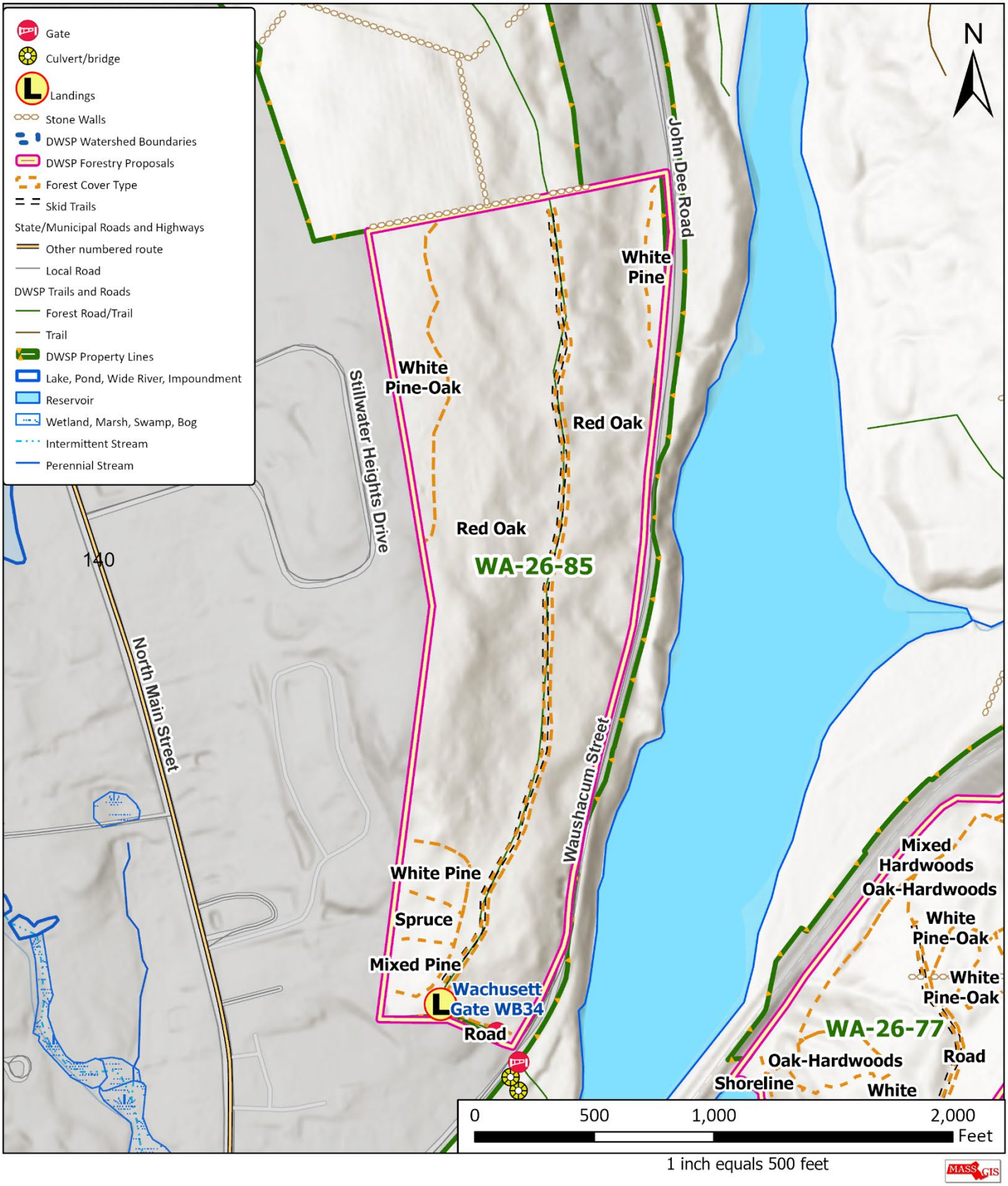
WA-26-85 -- Stand Map



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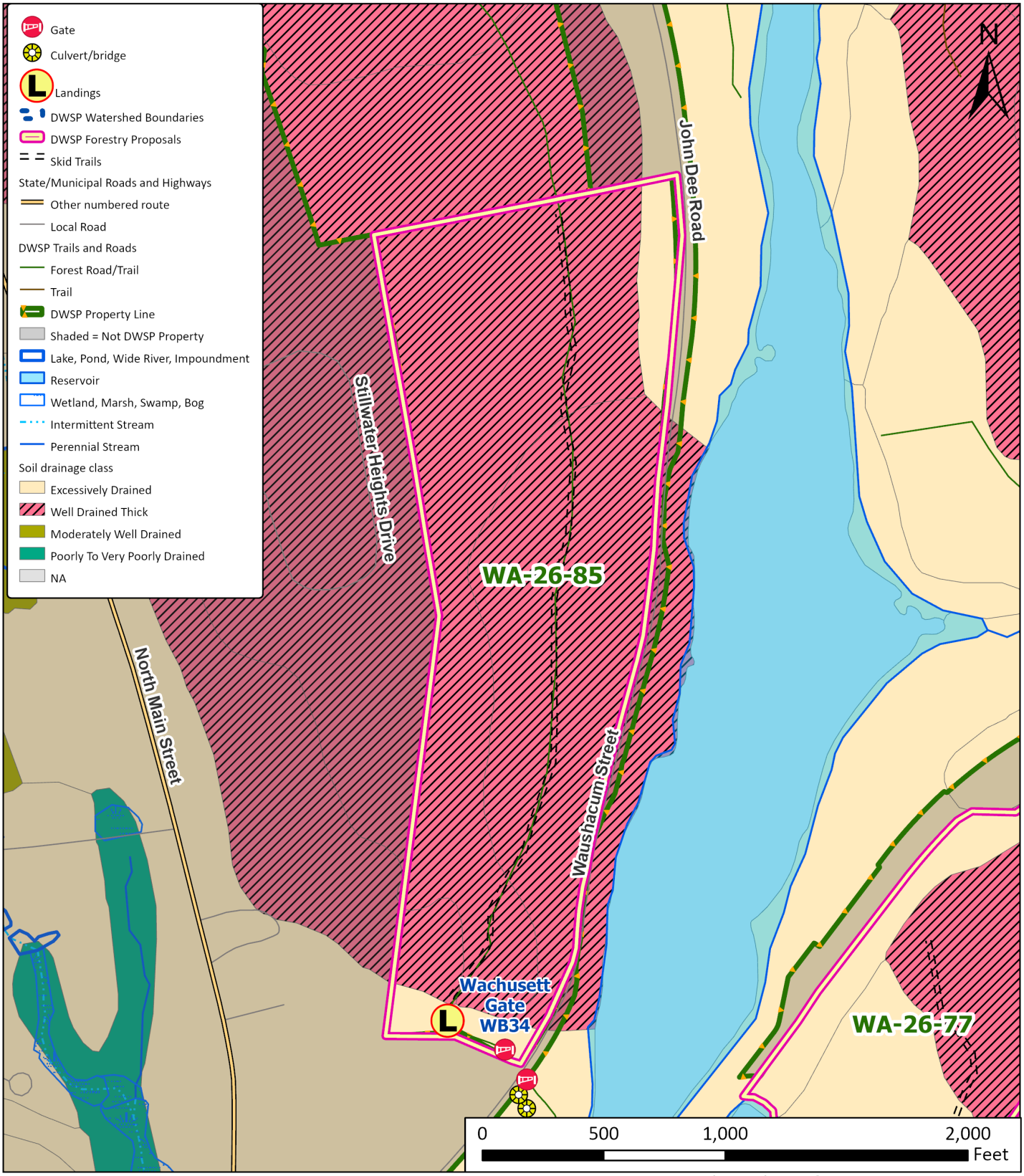
WA-26-85 -- Soil Drainage Classes



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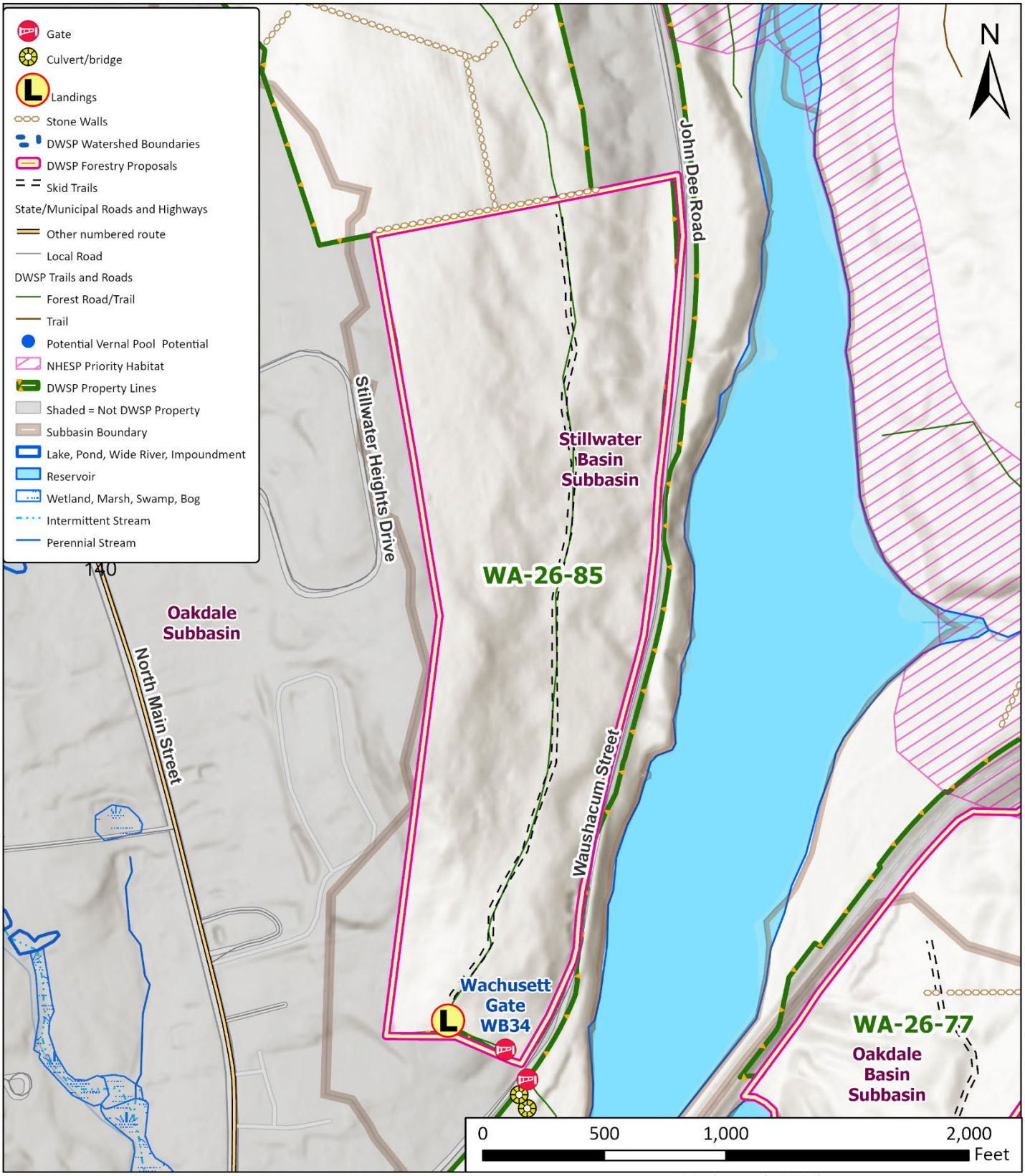
WA-26-85 -- Wetlands and Wildlife Resources



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WA-26-85 -- Cultural Resources and Landscape Characteristics