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-26-90**
Fiscal Year	2026
Watershed	Wachusett
Town(s)	Sterling
Forester	Greg Buzzell
Estimated Acres by Treatment Type	11 acres in regeneration patch cuts.
Total Proposal Acres	34.3
Block	n/a
Compartment and/or Working Unit	90
Location and Boundary Description	On the Sterling/West Boylston town line on the north side of Raymond Huntington Highway. This area is bound on the south side by Raymond Huntington Highway; on the west and north sides by internal stone walls and on the east side by a large wetland.
Previous Proposal?	No
Project Goals and Summary Description	This 34-acre forest is part of a larger parcel that was acquired in 1999 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, while diverse in species, is not sufficiently diverse in age structure with 68% greater than 80 years old and 0% less than 20 years old. This operation will result in up to 11 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. Mature trees will be retained within nearly all of the patches, particularly those larger than ½-acre in size. This retention provides habitat diversity, ensuring the availability of snags, den trees and future downed woody debris for a variety of wildlife while more closely mimicking natural disturbance patterns than the complete removal of the forest overstory. It has the additional benefit of improving the visual aesthetics of the recently regenerated patches. An emphasis will be placed on maintaining as much of the unusually large component of pignut hickory in the forest. Not only is there a lot of hickory in the overstory but there is unusual and welcomed amount of hickory regeneration.

Forest Cover Types and Acreages

Overstory Forest Types	Acres
Oak – hardwood	12

Overstory Forest Types	Acres
White pine – oak	7.6
Mixed hardwoods	7.2

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
Dry site -Huckleberry, blueberry	None
Mesic site - cinnamon fern, mixed hardwood	Secondary
Hayscented fern	None
Invasive shrubs/vines	Secondary
Other	None

Forest Vegetation Description

Vegetation Topic	Description
General Description, Forest Composition, Stand History, and Harvest History	This property was acquired by DCR in 1999. Heavy logging occurred in about 1984 on 9.5 acres resulting in two stands of now 40-year-old hardwood forest. This logging appears to have been a salvage operation following some severe windstorm as there are numerous pit-and-mounds in these areas. The stand in the northwest corner is dominated by red maple along with black cherry, hickory, white oak and red oak. The other stand lower on the slope has more oak in it but also has some oriental bittersweet on this damp soil. Partial cutting occurred throughout the rest of the area presumably in 1984 as well. The southern end of this area is dominated by red oak, white oak and black oak with scattered red maples and white pines. The upper half of the slope also has a significant component of pignut hickory. The partial logging led to the establishment of a good understory of advance regeneration comprised of hickory, red oak, red maple, white oak, white pine and sugar maple. There are also a large number of one-year old white pine seedlings throughout the entire area resulting from the extreme pine cone crop of 2023. Otherwise, the understory contains lowbush blueberry, wintergreen, striped maple, witch-hazel and maple-leaved viburnum. The central part of this area has a higher component of white pine along with red oak and red maple in the overstory. The generally excellent advance regeneration is comprised of hickory, red oak, red maple, white oak white pine and even some black gum near the bottom of the hill nearer to the wetland.
Advance Regeneration description	Sampling found adequate advance regeneration in 38% of the plots in the mature, manageable stands and marginally adequate regeneration also in 38% of the plots. There is an excellent amount of hickory in the understory along with red oak, white oak, red maple, black cherry, white pine, sugar maple and black gum.
Terrestrial Invasive Plants description	Sampling found that invasives were present in 8 of the 73 plots taken (11%). All of these are in the northeast corner of the area at low elevation adjacent to the wetland. Oriental bittersweet is the most common species along with multiflora rose.

Description of Wetland Resources Present

Resource Type	Description of resources present
Wetlands	There's a large wetland that forms the eastern boundary of this area.
Streams	None
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	6	Merrimac sandy loam in the far south end.
Well-drained Thin	0	
Well-drained thick	88	Paxton fine sandy loam
Moderately well-drained	0	
Poorly to very poorly drained	6	Freetown muck and Walpole sandy loam along the eastern edge associated with the large wetland.

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 #17 (South Stillwater Basin). Only 4% of the forest stands within this subwatershed are 20 years old or less. There are no stands within the 34.3 acres of this working unit that are 20 years old or less while 68% of the stands are more than 80 years old. The age structure of this working unit is as follows: 0%, 0-20 years old; 28%, 21- 40 years; 4%, 41-60 years; 0%, 61-80 years; 35%, 81-100 years; 33%, 100+ years old. The oldest stands date to about 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 the overall goal of having a forest with a diverse age structure with at least 3 age-classes distributed throughout both the subwatershed and the 34.3 acres within this specific area, the older overstory will be removed in patches. These patches may total as many as 11 acres which would be 1/3rd of the 34 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. They will be as well distributed throughout the working unit as possible, taking advantage of where the advance regeneration is present. It may not be possible to actually make 11 acres of regeneration openings given that most of the good advance regeneration is located in the 18 acres in the southern half of the area. This area has an unusually large component of hickory and so there is a conflict between the desire to maintain the majority of this hickory while also releasing as many hickory and other hardwoods in the understory as possible. After the operation, the age structure of the forest is estimated to be: 33%, 0-20 years old; 28%, 21-40 years; 4%, 41-60 years; 0%, 61-80 years, 17%, 81-100 years and 18%, 100+ years old.

General Climate Change Considerations:

This silvicultural approach focuses on increasing forest resilience by diversifying age structure and maintaining species richness by creating young forest through small overstory patch removals. By promoting drought-tolerant species like oaks and hickory and managing for structural diversity that buffers against windthrow and heat stress, the strategy anticipates shifting conditions. The retention of mature trees and snags within patches also helps moderate microclimate, which can be critical for seedling survival under hotter, drier summers. With low invasive species presence and a legacy of disturbances that have already diversified species and age composition in parts of the forest, this silvicultural plan builds on existing ecological processes to create a more resilient and climate-adapted forest.

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	Forwarding and mechanized felling will be required.

Constraint Topic	Description and Considerations
Proposed wetland or stream crossings	None
Further wetland comments	No comments
Vernal Pools	No comments
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
17/South Stillwater	1245	62	234	34.3

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 are numerous stone walls within this area associated with an identified historical agricultural site. Wells, farm structures, and other cultural resources will be avoided and stone walls will be protected from excessive damage at crossing sites.

Cultural Resource	Description and proposed protection measures
Description of site characteristics in relation to Ancient sites modeling or other verified evidence	Surface stone is prevalent. Microtopography is pronounced in large part due to the pit-and-mounds resulting from the presumed wind storm around 1984. Nearly the entirety of this area is more than 7% sloped.

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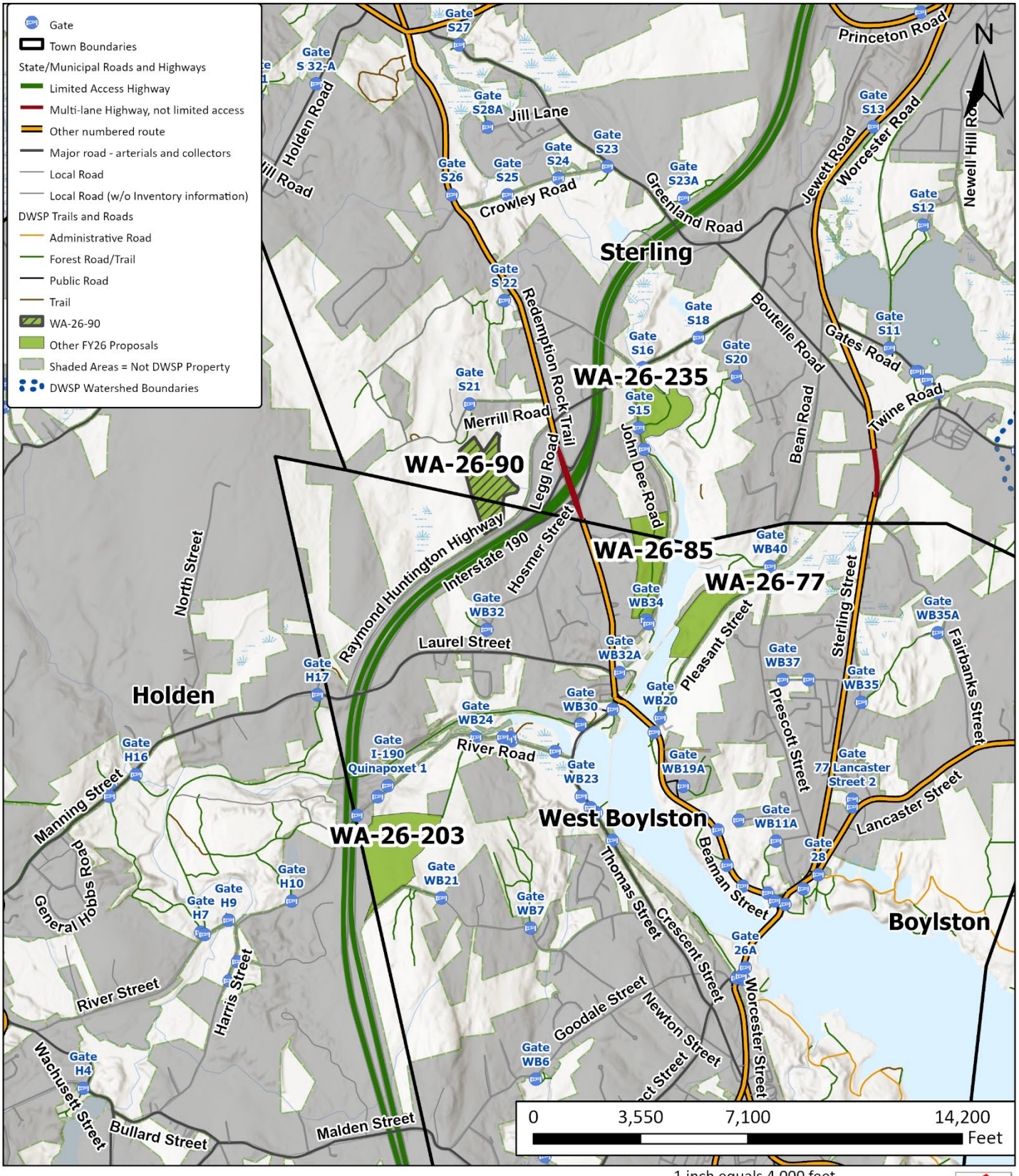
WA-26-90 -- Locus Map



1 inch equals 4,000 feet

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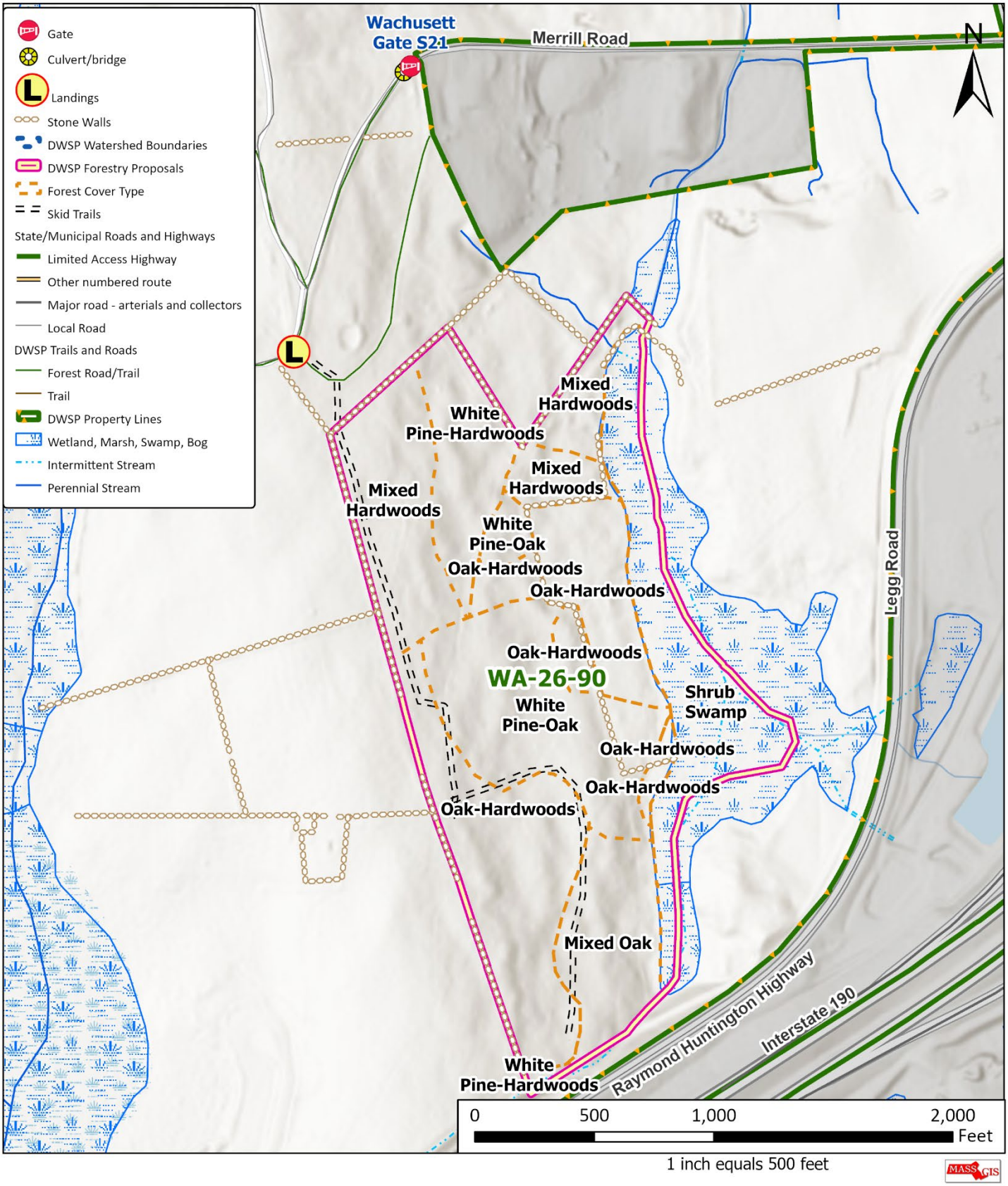
WA-26-90 -- Stand Map



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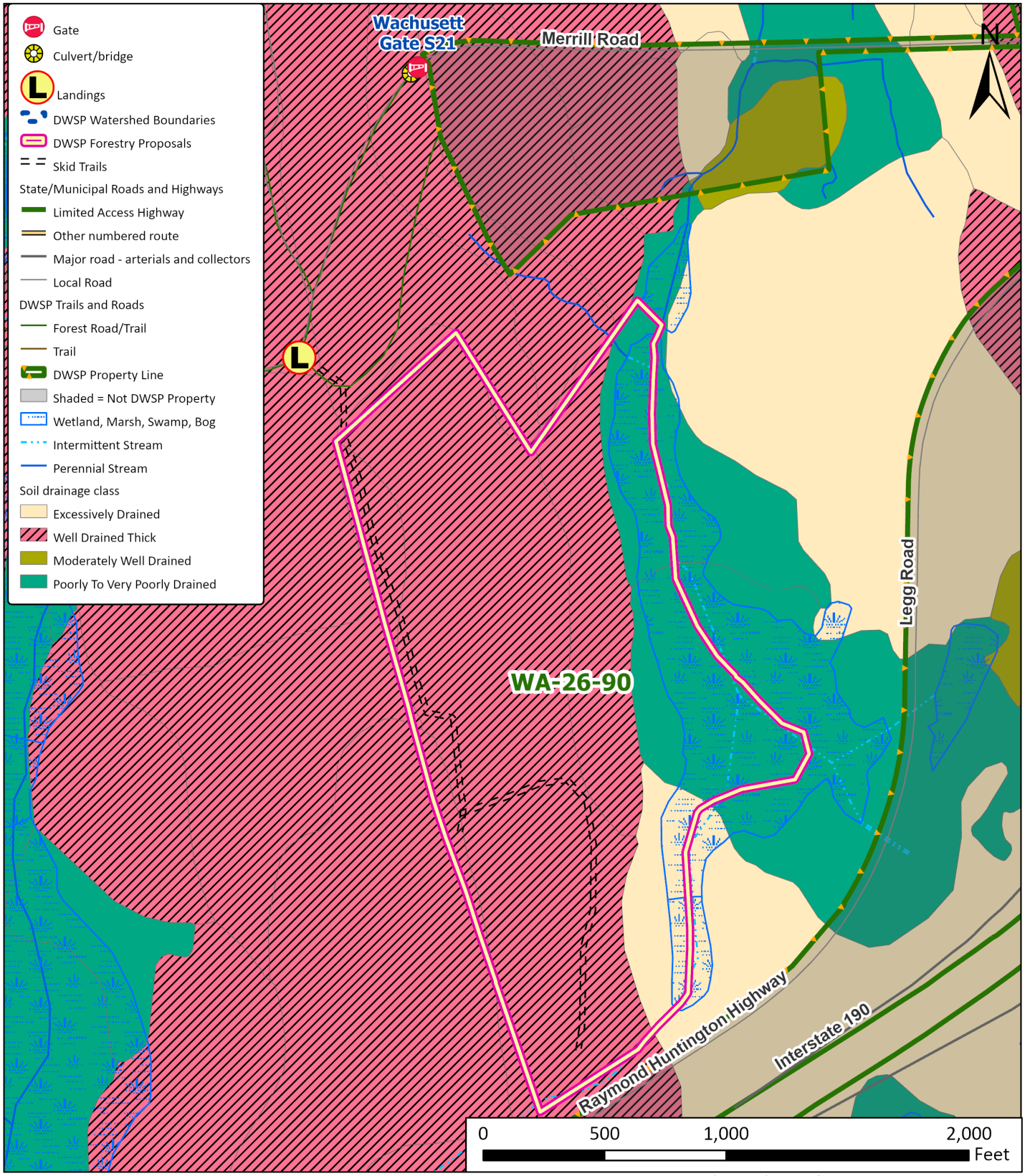
WA-26-90 -- Soil Drainage Classes



1 inch equals 500 feet

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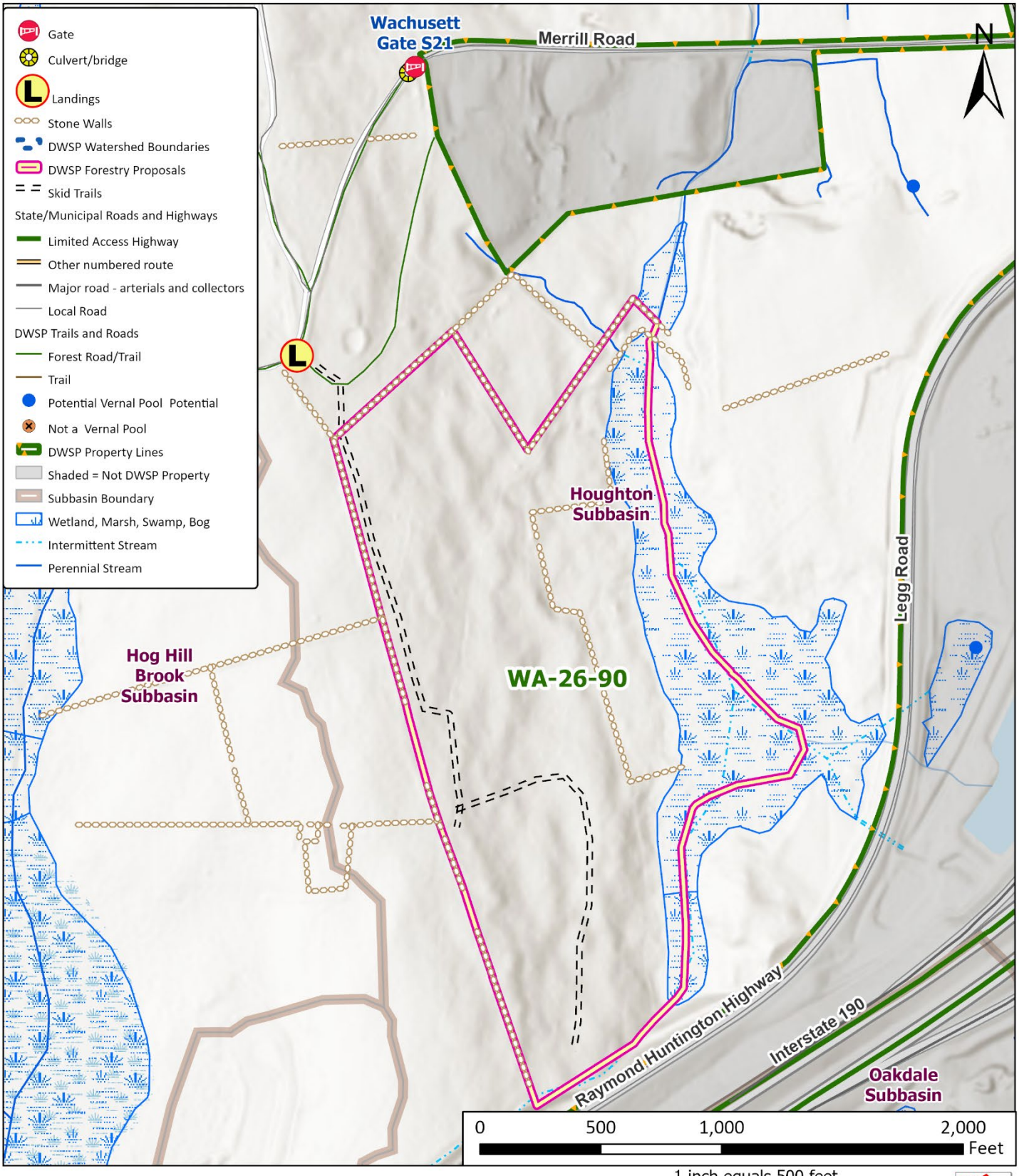
WA-26-90 -- Wetlands and Wildlife Resources



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WA-26-90 -- Cultural Resources and Landscape Characteristics