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	**WR-25-24**
Fiscal Year	2025
Watershed	**Ware River**
Town(s)	**Barre**
Forester	Russ Wilmot
Total Acres	305
Block	
Compartment and/or Working Unit	24
Location and Boundary Description	Starting at the new bridge on Rice Rd. Head Northeasterly for about 3500' along Rice Rd to a stonewall. Then Northwesterly along the stonewall and town line with Hubbardston for about 8,400', thence following along just uphill of the Burnshirt river and associated wetlands Southeasterly for about 8.400' to the POB.
Previous Proposal?	No
Project Goals and Summary Description	This project will occur just North of Rice Road and East of the Burnshirt River. The work that will occur will help to create a more diverse and vigorously growing forest. The current forest is mostly a mature red oak forest with some separate pine stands. This project will help finish installing the new Burnshirt River bridge and help provide access to an area currently difficult to access. Montgomery Road runs through this project area and as a result a damaged culvert will be replaced along with fresh gravel brought in and the road will be graded for usage. Some hiking trails will be impacted during the harvest operations.

Forest Cover Types and Acreages

Overstory Forest Types	Acres
Red Oak - Hardwood	181
White Pine - Hardwood	120

Understory Cover Types and Relative Importance

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

Forest Vegetation Description

Vegetation Topic	Description
General Description, Forest Composition, Stand History, and Harvest History	This project area can be described by its exposed rocky hillside and its small streams flowing down to the Burnshirt River. Evidence of an old foundation, cellar holes, a well, and a number of stonewalls with large oaks along them coupled with the amount of rock on the site suggest it was a pasture previously. The overstory is comprised of red oak and white pine with lesser amounts of red maple, shagbark hickory, white oak, black oak, black birch, yellow birch, hemlock, white ash, black cherry, bigtooth aspen, and red pine. There have been no documented treatments in this project area although the evidence of a small red pine plantation and a younger pine stand suggest previous management.
Advance Regeneration description	118 regeneration plots were sampled in this compartment with 56% of them having adequate regeneration. Adequate regeneration was mostly located in the Southeast portion of the project area. Marginal or no regeneration was found on 36% of the plots sampled. Those were mostly located in the Northwest portion of the project area. Oak was found on 19% of the plots taken and were found mostly along the road/trail system. Regen species consisted of white oak, red maple, hemlock, red oak, white pine, beech, black birch, white ash and sugar maple.
Terrestrial Invasive Plants description	There were no invasives found on the 118 sample plots taken in this compartment.

Description of Wetland Resources Present

Resource Type	Description of resources present
Wetlands	Yes
Streams	Yes
Vernal pools	Yes, one verified pool is located within the proposal close to the southern boundary.
Seeps	None found

Description of Soils by Hydric Class

Soil Hydric Classes	% of area	Soil series and any further comments
Excessively Drained	16	Hinckley loamy sand, 3 to 8 percent slopes
Well-drained Thin	10	Chatfield-Hollis complex, 25 to 60 percent slopes, rocky
Well-drained thick	53	Montauk-Scituate-Canton association, 3 to 15 percent slopes, extremely stony. Charlton-Paxton association, 15 to 45 percent slopes, extremely stony. Canton fine sandy loam, 3 to 8 percent slopes, very stony
Moderately well-drained	21	Woodbridge-Paxton Extremely Stony
Poorly to very poorly drained	0	

Proposed Silvicultural Activities

Topic	Description
Site Selection and Silvicultural Objectives	This site was selected for its lack of species and age diversity in the overstory. The objectives will be first to release the adequate regeneration in the areas it exists. Secondly, the moose have severely impacted the northern half of this compartment. So, to combat the moose we propose to create larger openings in areas heavily impacted by moose that have sparse regeneration in an effort to overwhelm the moose with regeneration coming in with the extra sunlight. Openings between 2 – 4.9 acres in size are allowed on the Ware River Watershed for restorative silviculture (2017 Land Management Plan (mass.gov) Page 116). which this is not. However, this method appears to work specifically in this area around the Burnshirt River where some 4 plus acre openings have regenerated successfully. There is also collected field data showing larger openings in Ware River Watershed regenerate with more diversity than smaller openings RegenCrossTabulation.xlsx (sharepoint.com) which is a goal in having a more resilient watershed forest. Around the openings , we will create one or more slash walls and experiment with leaving oak tops fully intact inside one or more of the openings without slash walls to create more challenges for the moose to come in and consume tree seedlings/saplings.
Silviculture Prescription	The areas with adequate regeneration will have openings averaging an acre in size with a maximum of 2 acres covering up to about 30 acres. The areas with sparse regeneration impacted by moose will have larger openings up to 4.9 acres in size covering up to about 25 acres. One or more slash walls will be built. In addition, up to about 30 acres of thinning will occur surrounding the openings in an effort to provide more sunlight to the forest floor within the openings and help feather the openings. Thinning will favor trees with unique characteristics as well as vigorously growing trees.

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
Full overstory removal, partial stand, patch regeneration cut. **(*see page 3, Silvicultural Prescription, up to 55 acres in regeneration openings*)**	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.
Diffuse overstory removal, partial cut, late rotation regeneration related. **(*see page 3, Silvicultural Prescription, 30 acres of thinning between openings*)**	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
Slash wall construction. **(*see page 3, Silvicultural Prescription, creation of one or more slash walls*)**	Slash walls are barriers built with on-site harvesting debris to enclose and protect areas of tree regeneration (natural or planted) from browsing and herbivory by deer and moose. Opportunities: No high carbon footprint materials needed such as plastic or metal fencing. Resulting piles of large diameter dead material are beneficial to many species of wildlife. No maintenance required and never need to be removed as they decay on-site over time. Carbon retained longer on the landscape as piles decompose more slowly than scattered material. Maintain and improve the density and/or occurrence of desired species already regenerating on-site. Adjust and/or alter composition to species that may be more adapted to anticipated future climate conditions.
General/other Climate Change Considerations	This forest compartment after projects have been completed will be more diverse in species, age, and height. The new growing space made available will have the trees respond by growing more vigorously with a young new age class coming in. These diverse vigorously growing trees will be better suited to battling the challenges of climate change than the current slow growing and less diverse forest.

Equipment and Access Constraints and Considerations

Constraint Topic	Description and Considerations
Proposed Equipment requirements	For the smaller openings where adequate regeneration is present a forwarder/processor will be preferred. For the larger openings where regeneration is sparse a skidder will be allowed.
Proposed wetland or stream crossings	Almost all crossings will be on Montgomery Rd off of Rice Rd. Some ditches need to be reinstalled, a culvert replaced and another culvert cleaned out.
Further wetland comments	There are some small wetlands in the compartment that will be avoided.
Vernal Pools	There are a couple unverified vernal pools that need to be inspected.
Access improvements needed	The Burnshirt River bridge approaches need work. A trailer truck turnaround area might be helpful just before the Burnshirt River bridge. Gravel and grading is needed on portions of Montgomery Rd. A destroyed culvert needs to be removed/replaced.
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
8058/Lower Burnshirt	2163.46	75.6	456.6	224
8050/Middle Burnshirt	365.82	0.0	91.4	81.5

Additional comments on Subwatershed analysis: No comments.

Wildlife and Habitat Observations and Considerations

Wildlife/Habitat	Observations and Considerations
Natural Heritage Priority Habitats?	Yes, Priority habitat 1538 associated with the Burnshirt River.
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 found.
General Wildlife Comments	There is a heavy moose presence in this compartment. There is excessive moose browse on the red maple saplings and poles in the Northern portion. There is also a decent deer population in the area, likely as hunters have had tough access to the area, which will change with the new bridge in. There is a large boulder field in the middle of the working unit making a portion of the project area unmanageable.

Cultural Resources Description and proposed protection measures

Cultural Resource	Description and proposed protection measures
Historical features present; comments regarding protection	There is an interesting old foundation with associated cellar hole, well, and stonewalls with large diameter oaks along them. These features will be protected during operations. Some stonewalls will be crossed where they already have an opening and/or are already broken down to the ground.
Description of site characteristics in relation to Ancient sites modeling or other verified evidence	Surface stone is prevalent. Microtopography is evident. Slope is gradual up to 35% in some areas. If applicable, DWSP will follow the recommendations of DCR's Archeologist regarding protection of sensitive sites.

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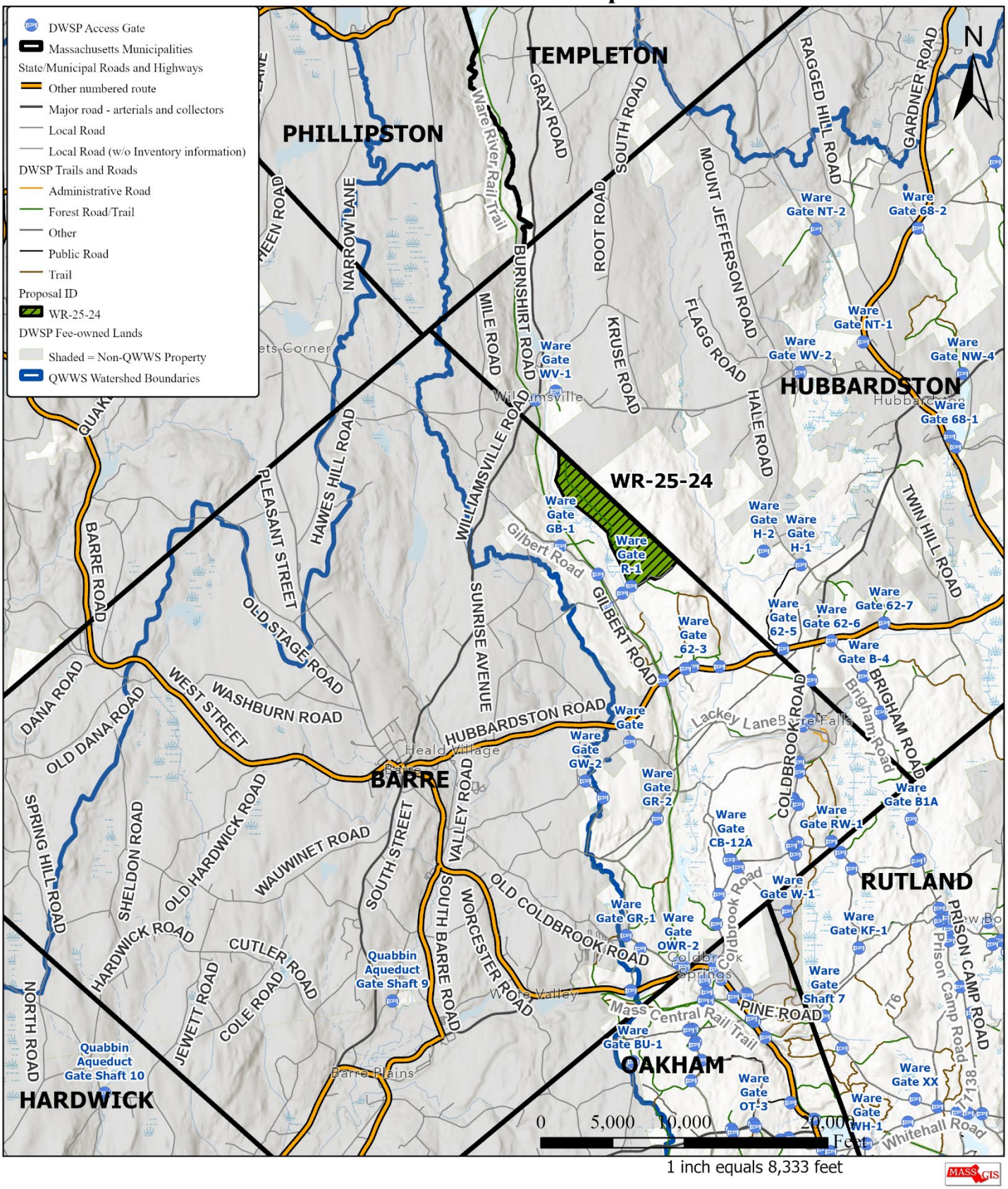
WR-25-24 -- Locus Map



1 inch equals 8,333 feet

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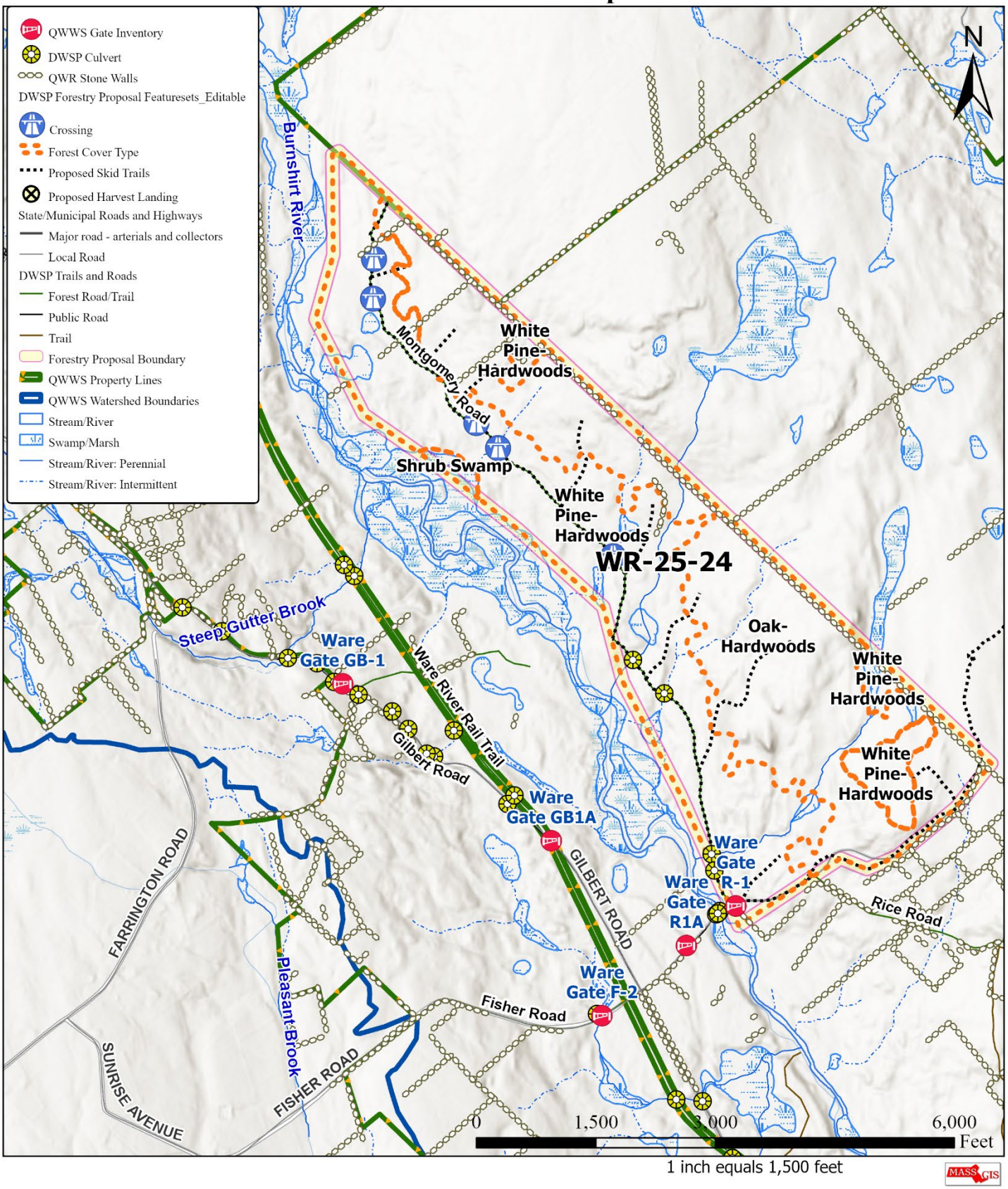
WR-25-24 -- Stand Map



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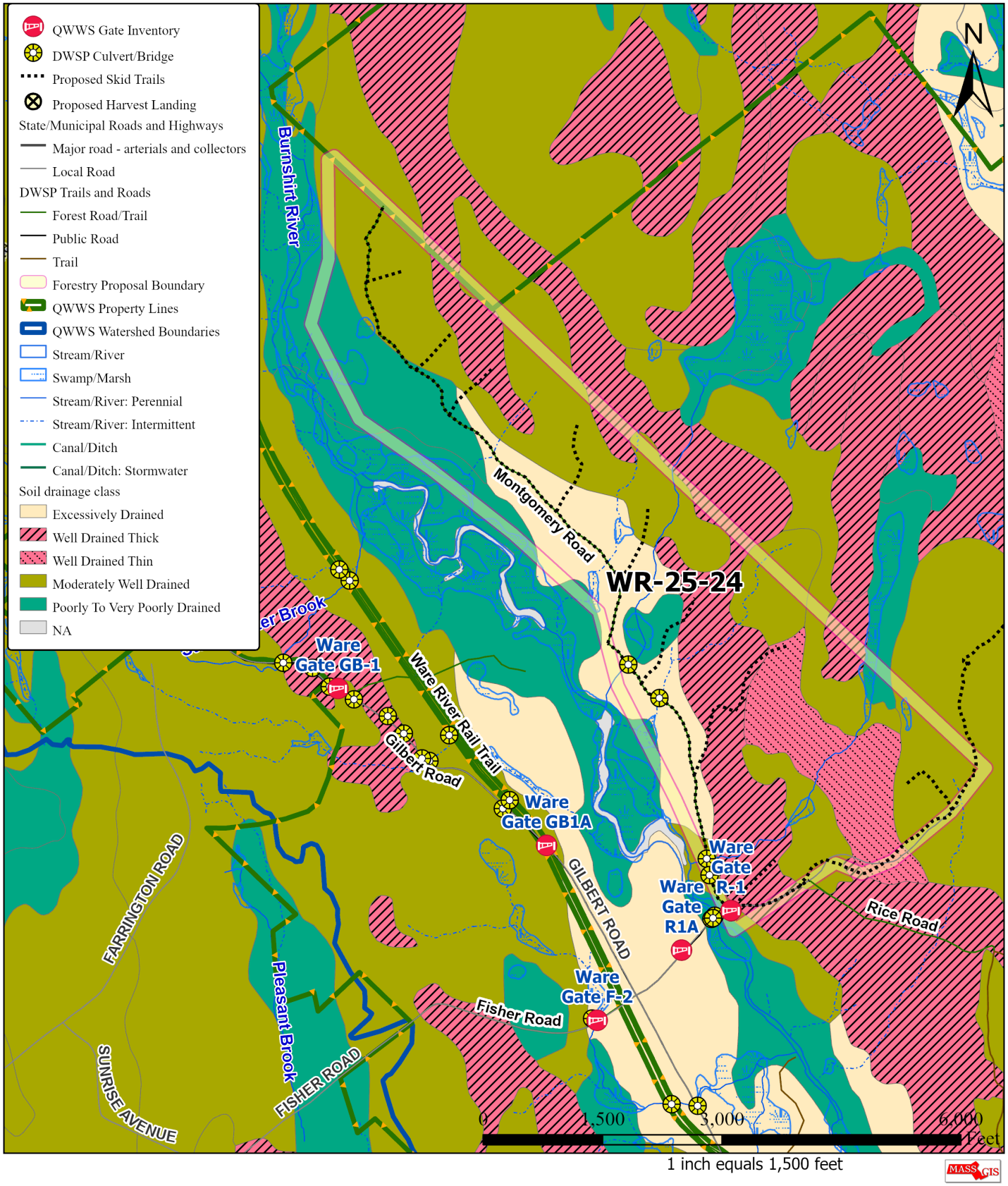
WR-25-24 -- Soil Drainage Class



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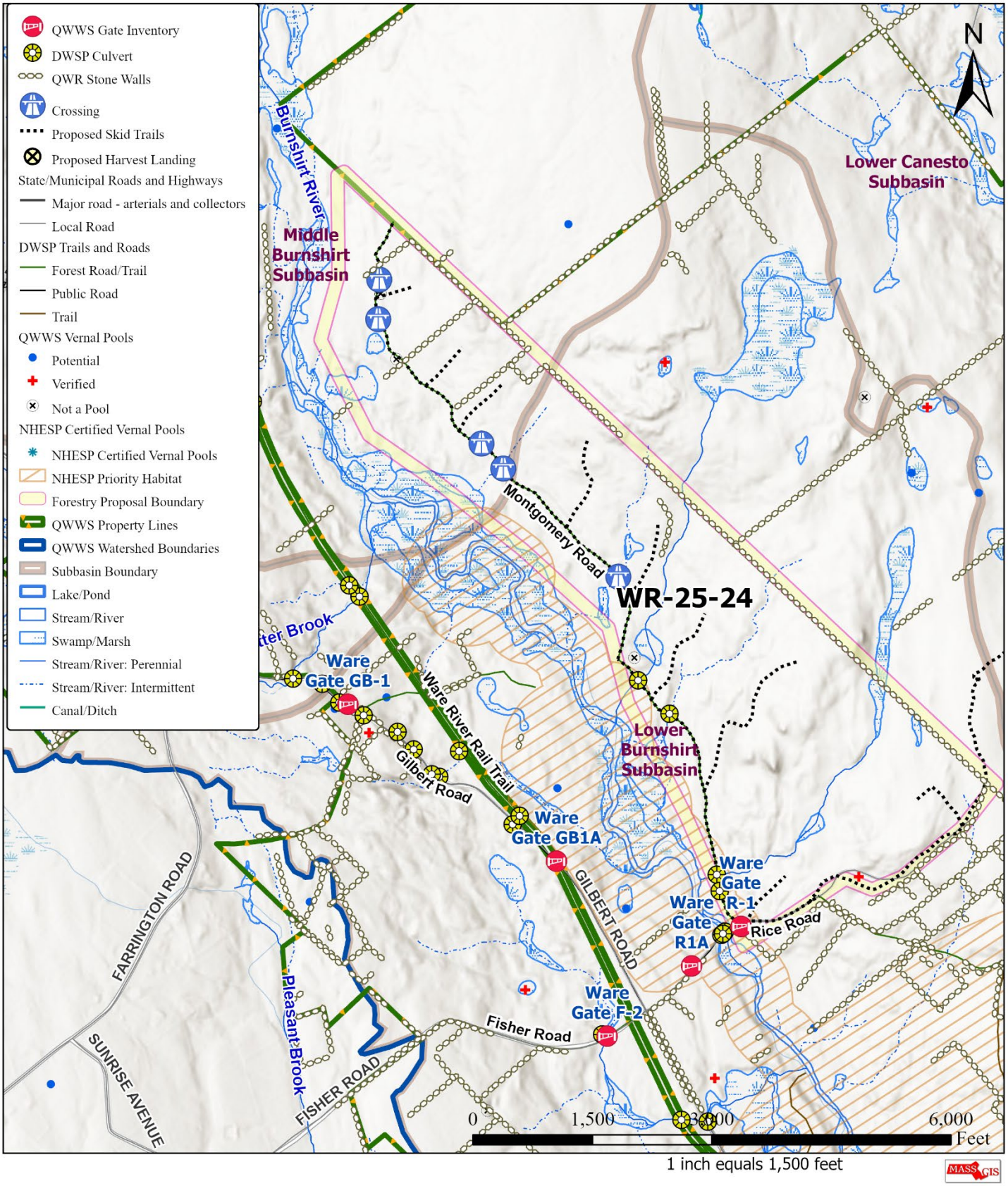
WR-25-24 -- Wetlands and Wildlife Resources



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WR-25-24 -- Cultural Resources and Landscape Characteristics