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	**PE-25-09**
Fiscal Year	2025
Watershed	**Quabbin**
Town(s)	**Pelham**
Forester	Richard G MacLean
Total Acres	67
Block	Pelham
Compartment and/or Working Unit	09
Location and Boundary Description	The lot is bounded by Pelham Hollow Rd and steep slopes to the North, Governor's Woods Rd to the West, an intermittent stream to the south, and the shoreline to the east.
Previous Proposal?	PE-21-09 (no changes to proposal)
Project Goals and Summary Description	This proposal seeks to advance overall watershed goals of increasing age and species diversity through harvest. Species diversity will be improved by harvesting areas with low species diversity while retaining underrepresented species. Age diversity goals will be pursued by opening the forest canopy over existing regeneration and providing open patches with high sunlight to create opportunities for new regeneration to establish. Releasing existing regeneration established under the existing canopy, and opening up full sun light for new establishment will create conditions for a variety of species of different shade tolerance to establish at the site.

Forest Cover Types and Acreages

Overstory Forest Types	Acres
White pine/hardwood	55
White pine	10
Hemlock	2

Understory Cover Types and Relative Importance

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

Forest Vegetation Description

Vegetation Topic	Description
General Description, Forest Composition, Stand History, and Harvest History	The majority of the proposed area is in white pine/hardwood white pine/oak cover. Median stocking throughout is 110 ft² / acre with a median diameter class of 16 ". Eastern white pine and northern red oak are the dominant overstory species. The white pine on site ranges from pole sized to > 30 " in diameter with a mean diameter of 25 ", the red oak shows two size classes centered around 13 " and 20 " diameter. Pole sized red maple, mostly poorly formed is the next largest constituent followed by small sawlog sized hemlock. Larger hemlock in the proposed area has been hard hit by hemlock wooly adelgid (HWA; Adelges tsugae) creating small gaps which have initiated mostly white pine regeneration 5-15 years old, with some black birch and red maple mixed in. The 11 acres in white pine cover is a true white pine stand with little species diversity, a closed canopy and only very small gaps (up to 0.1 acres) available for regenerating white pine seedlings unlikely to persist. Basal area in the pine stand is 110-130 ft² / acre and is primarily in >20 " diameter size class. The hemlock stand in the southeastern section of the proposal still contains pole sized to small saw log healthy hemlock, with red maple, paper birch, and red oak the primary hardwood species. Hemlock regeneration has been heavily browsed and it was rare to find a hemlock between 2 and 20 ft tall. There are small pockets of red pine near the shoreline only a few acres in size. The red pine is in drastic decline and given its poor condition, proximity to the reservoir shoreline and its distance from areas regularly accessed by the public it will most likely be left to collapse in place. At the time of the establishment of the Quabbin Reservation real estate sheets show that the top of the slope on the western to southwestern portions of the lot were in sproutland, and the northern slopes near the road intersection and the pine stand were previously in woodland. The proposed area contains two previous harvests, 0131 completed in 1976 and 0609 completed in 1993. Lot 0131 was a 19 acre thinning of the pine and hemlock located north and south of the perennial stream. Lot 0609 overlaps with the southern edge of the proposal creating small (< 0.25 acre) openings and initiating some now sapling sized white pine and black birch regeneration.
Advance Regeneration description	White Pine seedlings and saplings are present throughout the proposed area with stagnant/dying tall sapling white pine. Browse is extensive, nearly every plot visited had heavy browse impact: bonzai hemlock, browsed striped maple, there were even signs that the black birch saplings are being browsed. Moose scat was a frequent presence.
Terrestrial Invasive Plants description	Invasive species were not observed during a prism curise of the proposed area. There are known patches of *Berberis thunbergii* (Japanese barberry) north of the proposal on the gate 11 road, but outside of the are to be treated.

Description of Wetland Resources Present

Resource Type	Description of resources present
Wetlands	No
Streams	Yes
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	0	
Well-drained Thin	5	Hinckley loamy sand
Well-drained thick	95	Roughly equal areas of Charlton-Hollis-Rock outcrop complex and 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 site has not received any regeneration treatment in the recent past, only light thinning. The result is primarily a tall even aged white pine / red oak stand with short young regeneration but a stagnant declining midstory. The combination of a tall even aged canopy with little healthy midstory makes this stand vulnerable to a large-scale wind disturbance disrupting forest cover. This harvest seeks to release the understory regeneration present, disrupt interfering mountain laurel, and provide conditions for establishment of early successional species to establish to further diversify the species present.
Silviculture Prescription	Most of the proposed treated area will be in regeneration openings with green tree retention of 5-15 ft^2 basal area/ acre. Openings will be placed to release existing regeneration or target areas of particularly poorly formed overstory. In areas with interfering mountain laurel, release of existing regeneration will be prioritized and the mountain laurel avoided. If adequate regeneration is not in proximity the mountain laurel will be contained within an opening with low basal area retention and mechanical treatment of the mountain laurel will be required to attempt to provide the light conditions for fast growing shade intolerant to moderately tolerant regeneration to grow up before the mountain laurel recovers. Edge and interior retention trees will favor well formed, vigorous overstory individuals, and under-represented species. Improvement thinning will be performed in the matrix between regeneration openings targeting poorly formed and damaged individuals. In the white pine stand an extended irregular shelterwood system will be implemented. Basal area will be reduced to 30-40 ft^2 / acre and spatially grouped to reduce canopy closure shading over the extended shelterwood phase. The limited red pine within the proposed area will likely be left unharvested, but if it is determined that the red pine is impeding white pine and hemlock regeneration the stand may be treated with some felling and/or girdling to adequately release the existing regeneration.

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 4, Silvicultural Prescription, group selection 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 4, Silvicultural Prescription, intermediate thinning on steeper slopes*)**	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**.
Additional Carbon and Climate Considerations	None.

Equipment and Access Constraints and Considerations

Constraint Topic	Description and Considerations
Proposed Equipment requirements	Likely none, however, if it is necessary to utilize any DCR road infrastructure for moving wood to a landing a forwarder will be required.
Proposed wetland or stream crossings	No
Further wetland comments	No
Vernal Pools	None known
Access improvements needed	Governor's Woods Rd is washing out in sections and will need repairs to the intersection 10-3A to allow trailers to turn around.
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
18: Pelham Shore Middle	324	0	81	67

Additional comments on Subwatershed analysis: No comments.

Wildlife and Habitat Observations and Considerations

Wildlife/Habitat	Observations and Considerations
Natural Heritage Priority Habitats?	Yes. The eastern side of the lot along the shoreline falls within priority habitat.
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	Moose and deer browse is extensive throughout the proposed area. Hemlock seedlings are browsed to dwarf form and striped maple stripped of all buds is common throughout. Even black birch seedlings were found with evidence of browsing. Moose scat was a common find.

Cultural Resources Description and proposed protection measures

Cultural Resource	Description and proposed protection measures
Historical features present; comments regarding protection	This lot contains stone walls as well as the foundations of the house of a Mr. Cutting, and the foundations of the house and barn of a Mr. Frost.
Description of site characteristics in relation to Ancient sites modeling or other verified evidence	48 acres of the proposed area is classified as very stony, with surface stone a regular feature at the surface. The microtopography is rolling and somewhat pronounced though likely reduced after plowed agriculture in areas that weren't too stony to allow it. Slopes are predominantly 0 – 30 % with some small areas of slope reaching up to 40 %. Any cultural resource features located before or during the forestry project will be protected according to guidelines set forth in the current DWSP Land Management Plan and indicated on harvest maps accordingly. If applicable, DWSP will follow any additional recommendations from DCR's Archeologist regarding protection of sensitive sites.

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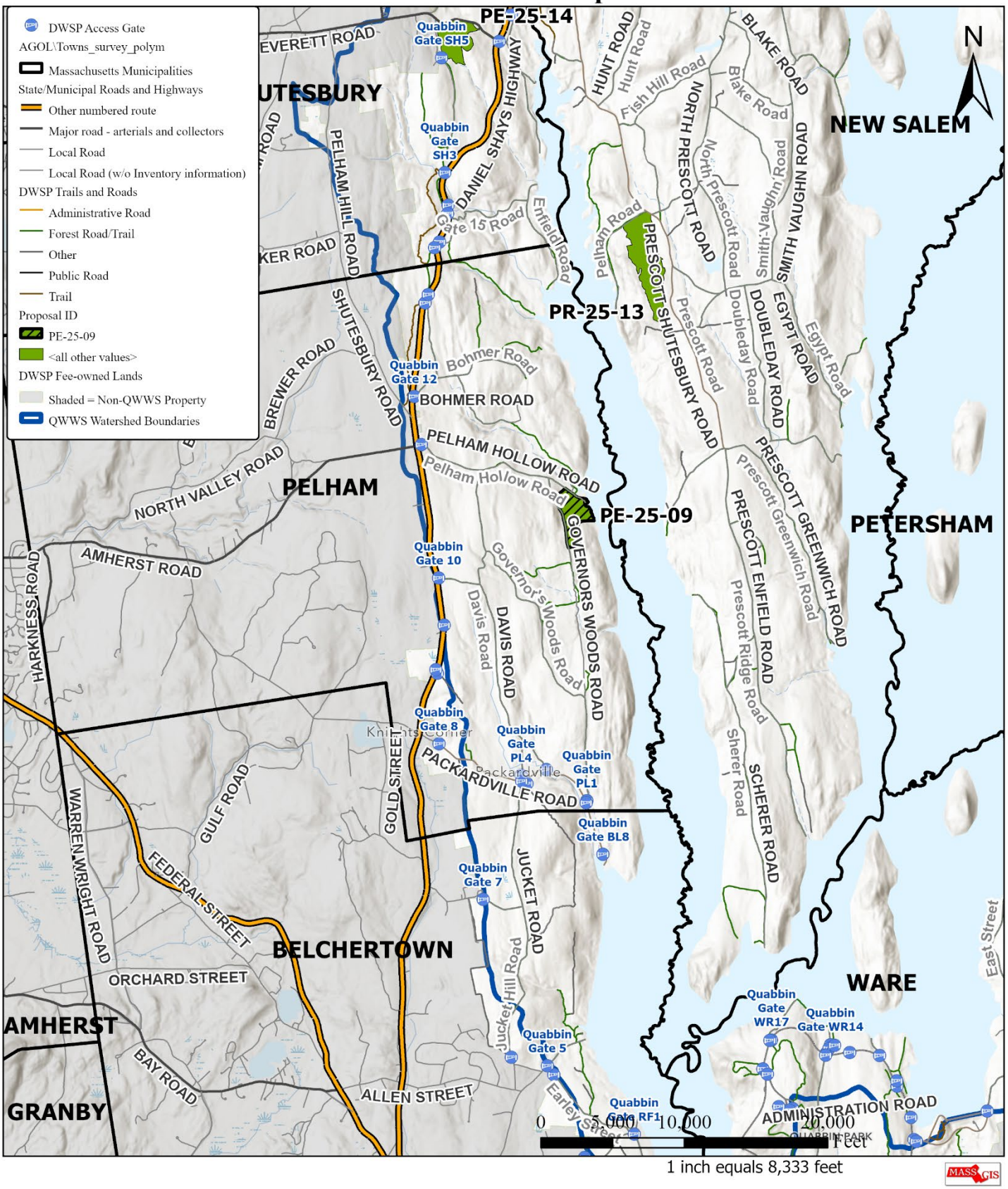
PE-25-09 -- Locus Map



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PE-25-09 -- Stand Map

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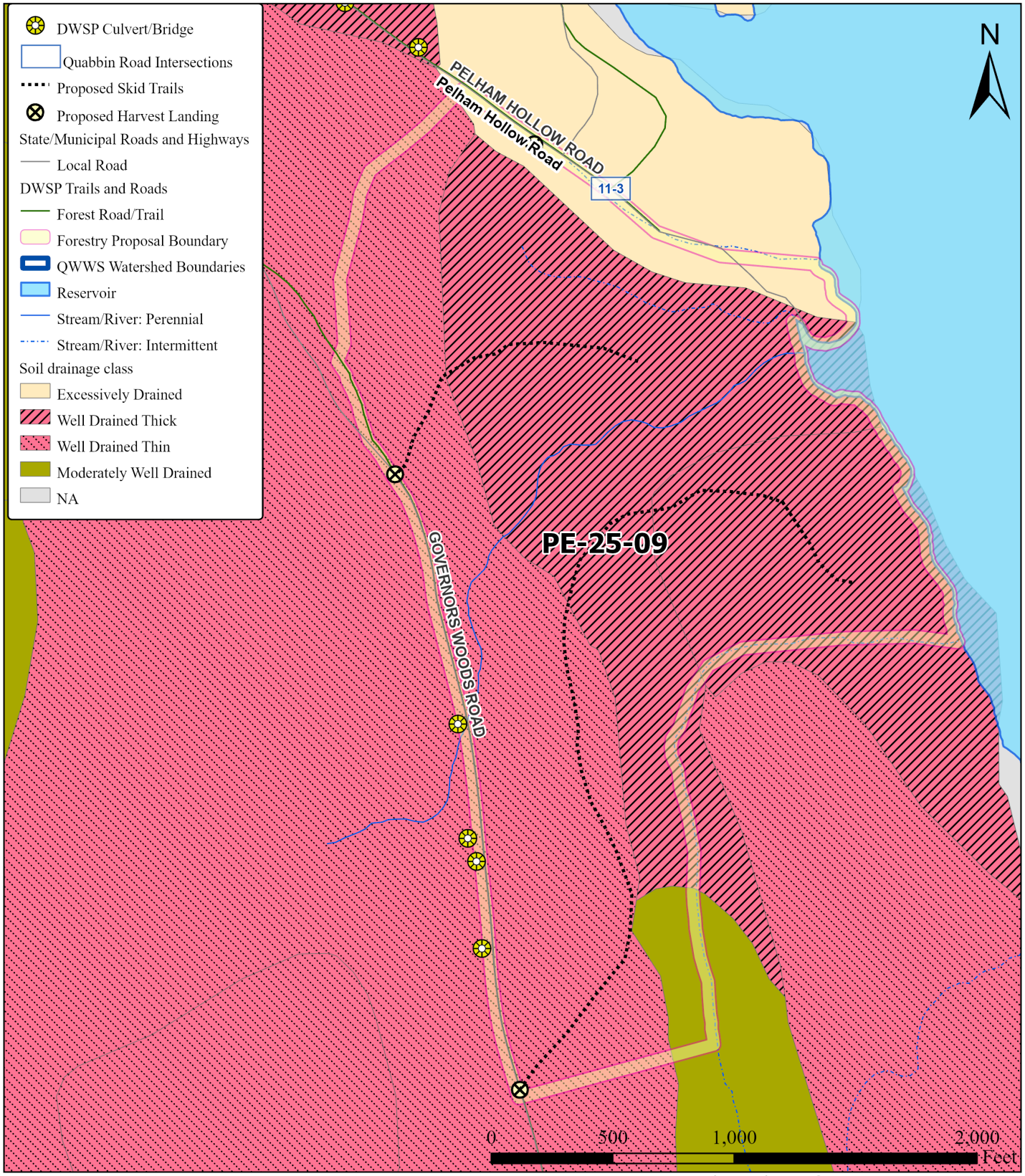
PE-25-09 -- Soil Drainage Class



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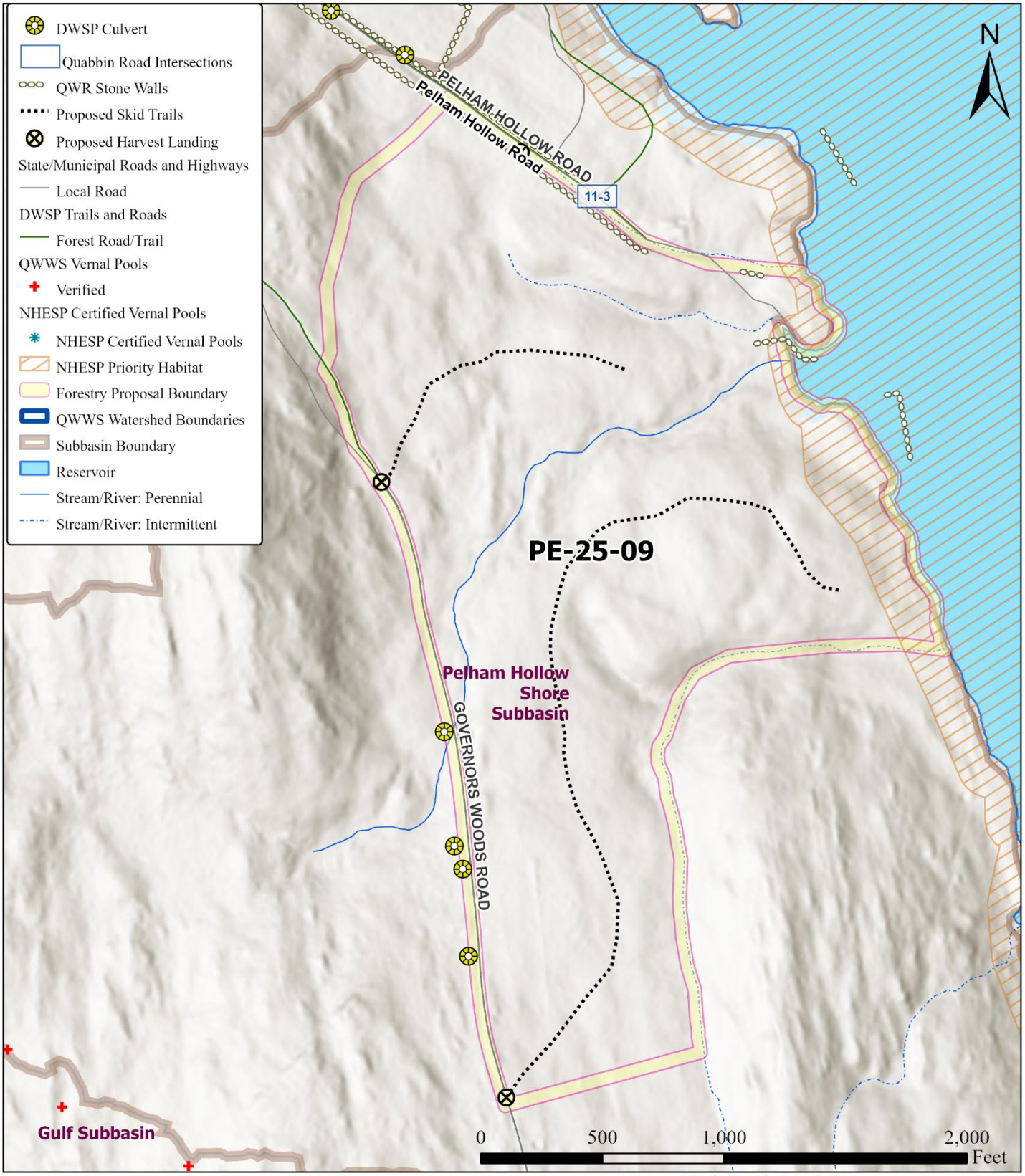
PE-25-09 -- Wetlands and Wildlife Resources



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PE-25-09 -- Cultural Resources and Landscape Characteristics