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-26-10**
Fiscal Year	2026
Watershed	Quabbin
Town(s)	Pelham
Forester	Richard G MacLean
Estimated Acres by Treatment Type	22 acres in regeneration openings and an additional 44 acres in thinning
Total Proposal Acres	78
Block	Pelham
Compartment and/or Working Unit	10
Location and Boundary Description	Located at the eastern end of Bohmer Road. The proposal sits at the top of a ridgeline. The boundary follows an old cart road southeast, and then follows the break in slope south by southeast until reaching a large dense thicket of mountain laurel. The western side of the proposal follows the break in slope on the western side of the ridge and along a 200 ft buffer of a vernal pool, and beaver pond.
Previous Proposal?	None
Project Goals and Summary Description	The proposed area has very little tree regeneration, and little to no diversity in what regeneration is present. There is abundant evidence of past heavy deer and moose browse, which is a likely driver of the absence of preferred browse species and, in limited places, established fern or mountain laurel as an interfering cover. This proposed harvest seeks to create conditions for abundant regeneration to establish and, if possible, to construct a slash wall area to exclude large browse animals.

Forest Cover Types and Acreages

Overstory Forest Types	Acres
Black birch - Hardwood	25
Oak - Hardwoods	25
White pine - Oak	18
White pine - Hardwoods	7
Northern hardwoods	3

Understory Cover Types and Relative Importance

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

Understory Cover Type	Relative area covered (Dominant, Secondary, Minor, None)
Mesic site - cinnamon fern, mixed hardwood	
Hayscented fern	Secondary
Invasive shrubs/vines	
Other	Dominant. For a majority of the area vegetation is absent, or sparse enough to prevent confident assessment of what community might be present or supported without browse suppression.

Forest Vegetation Description

Vegetation Topic	Description
General Description, Forest Composition, Stand History, and Harvest History	Stand 1 is twenty-five acres of black birch hardwood in the middle of the proposed area. The composition of the overstory is unusual for the Quabbin Reservoir as the black birch is the majority canopy codominant species (57 %), with red maple (21 %), northern red oak (9 %), and eastern white pine (7 %), and minor amounts of eastern hemlock, black oak, and American beech. The 1938 real estate sheets record blazed black birch on a property line, suggesting that black birch has been a major component of the overstory for a long time here. The stand averages 137 (100 – 170) square feet basal area per acre and the canopy is dominated by black birch and red maple, with some scattered sprawling canopy northern red oaks. This stand contains 1.4 snags per acre, most of which were oaks killed in the recent spongy moth outbreak. Along the eastern edge closest to the reservoir emergent and other tall white pine will be retained for their potential wildlife benefit. Stand 2 contains twenty-five acres of oak hardwoods on the north end of the proposal. The overstory is 34 % eastern white pine, 21 % red maple, 17 % northern red oak, 17 % white oak, and 6 % black oak, with minor amounts of eastern hemlock and black birch. This stand averages 129 (80-170) square feet per acre basal area and 2.8 standing snags per acre, mostly spongy moth killed oaks. The eastern portions of this stand saw light harvest in 1985, likely as part of a spongy moth salvage. There is an intermittent stream which bisects this stand as it drains from a beaver pond at the top of the ridge. Along the stream there is dead and dying white ash with abundant evidence of emerald ash borer. The amount of downed logs suggests the ash was dying out prior to more recent emerald ash borer infestation. On the western edge there is a beaver pond, the proposed area buffers the pond by two hundred feet. Stand 3 is an eleven acre white pine oak stand in the north west corner of the proposed area. The overstory composition is 35 % northern red oak, 27 % black birch, 22 % eastern white pine, and 11 % red maple with minor amount of hickory. The canopy is dominated by large wide oak canopies and tall to emergent white pine. The stand averages 125 (80-150) square feet basal area per acre and contains one snag per acre. This stand was harvested in the same 1985 harvest as Stand 2.

Vegetation Topic	Description
General Description, Forest Composition, Stand History, and Harvest History (cont.)	Stand 4 is a white pine hardwood stand of seven acres located at the eastern edge of the proposal. This stand sits at the lowest edge of the proposal but is on a bench above steeper slopes leading down to the reservoir. The overstory composition is 35 % eastern white pine, 31 % black birch, 15 % northern red oak, 12 % red maple, with minor amounts of eastern hemlock and American beech. The canopy is dominated by eastern white pine with many emergent pines. Most of the remaining canopy is northern red oak as the black birch is mostly small pole sized trees growing into small gaps created by standing snags. The stand averages 131 (100 – 150) square feet per acre basal area and contains nearly 2 snags per acre. The 1938 real estate sheets and aerial imagery show that this area was regrowing to young forest at this time. This stand contains a known bald eagle nest that is known to have been active several years ago. Stand 5 contains 7 acres of white pine oak at the southern end of the proposed area. The overstory is dominated by eastern white pine (35 %) and northern red oak crowns (15 %) but with a large component of canopy codominant black birch (31 %), and red maple (4 %) with minor amounts of eastern hemlock and white ash. The stand averages 128 (100-150) square feet of basal area and two standing snags per acre. A similar overstory composition continues to the south, but understory mountain laurel transitions into an extensive dense thicket. Stand 6 is three acres of northern hardwoods in the northern end of the proposed area. With a northern aspect and slightly enriched soils, this stand contains the only sugar maple (47 %) in the proposed area, along with black cherry (24 %), northern red oak (18 %), white ash (6 %), and red maple (6 %). The canopy was dominated by large sugar maple and white ash crowns, but nearly all of the canopy ash has died from recent ash decline and emerald ash borer invasion. This mortality has resulted in the stand having 1.4 standing snags per acre, and a large amount of large diameter coarse woody debris from snags which have already fallen.
Advance Regeneration description	Stand 1. The understory of stand 1 exhibits evidence of past and recent heavy browse. Half of measured plots had little to no regeneration with most of these plots containing only scattered fern and eastern white pine seedlings. Another third of the plots contained monoculture pockets of dense eastern white pine seedlings to saplings. The remaining plots were either dominated by abundant fern cover or contained scattered amounts of heavily browsed stripe maple. The stripe maple showed multiple years of heavy browse and where individual American beech or black birch saplings were present, they also had growth forms evident of past heavy browse pressure. The browse line on this hardwood regeneration ranged from a foot above ground to six feet, indicating both deer and moose are contributing to the browse damage. Stand 2's understory was 56 % in little to no regeneration, and what little regeneration was present was eastern white pine and black birch. Another 33 % of the area had monoculture regeneration of eastern white pine, or red maple. The remaining area was heavily impacted by browse damage, black birch present in these plots was browsed hard enough to prevent viability, and only eastern white pine was present otherwise Stand 3. Understory vegetation in this stand was mostly in monocultural eastern white pine, or red maple (43 %). The remainder of the area was split between having little to no regeneration present or regeneration interference from dense mountain laurel. The dense mountain laurel is in the southwest corner near the beaver pond and is on thin ledge ridge top soils.

Vegetation Topic	Description
Advance Regeneration description (cont.)	Stand 4 understory composition is 50 % monoculture eastern white pine, with the remaining area in little to no regeneration with scattered black birch, or regeneration interfered by dense mountain laurel. Stand 5 regeneration was dominated by eastern white pine in pockets of dense monoculture (67 %) or scattered marginal density (33 %). This stand is bordered by dense, tall mountain laurel to the south, outside of the proposed treatment area. Stand 6 has an understory that demonstrates the negative effects of heavy browse pressure. The only tree regeneration present is scattered stems of heavily browsed striped maple. The rest of the ground cover is dense fern. There is not any sugar maple or white ash regeneration present. The presence of the fern thatch and collapse of the white ash will likely result in the establishment of smaller seeded species such as black birch and white pine and exclude larger seeded species such as oak and hickory.
Terrestrial Invasive Plants description	There is a small amount of Japanese barberry (*Berberis thunbergii*) in the northern hardwoods at the north end of the harvest area. No other invasive species were observed while sampling.

Description of Wetland Resources Present

Resource Type	Description of resources present
Wetlands	None present within the harvest area
Streams	One intermittent stream bisects the harvest area. This stream is drainage from the beaver pond at the top of the ridge.
Vernal pools	None present within the harvest area; three verified vernal pools are nearby but greater than 200 ft from potential harvest
Seeps	Seeps are present near the western edge of the harvest area, at the lower end of the slope draining into ephemeral streams.

Description of Soils by Hydric Class

Soil Hydric Classes	% of area	Soil series and any further comments
Excessively Drained	0	
Well-drained Thin	76	Charlton-Hollis-Rock-outcrop
Well-drained thick	24	Mainly Canton fine sandy loam, with Gloucester gravelly fine sandy loam, both extremely stony
Moderately well-drained	0	
Poorly to very poorly drained	0	

Proposed Silvicultural Activities

Topic	Description
Site Selection and Silvicultural Objectives	The high ridge position of the proposed area increases its vulnerability to a large-scale wind disturbance. The lack of advanced regeneration further increases the vulnerability of the area to experience delayed regeneration in the event of such a large-scale wind disturbance. The objective of this treatment is to increase forest resiliency by creating the conditions allowing for establishment of new tree regeneration.
Silviculture Prescription	Stand 1. The desired future condition of this stand is an overstory with a more diverse age structure, oaks having a more prominent place in the composition, and an understory with more abundant and more diverse regeneration. To accomplish this condition in the face of heavy browse pressure a four-acre slash wall around a regeneration opening is proposed, along with a comparative four-acre regeneration opening without a wall. Additionally, heavy thinning will be performed throughout the stand targeting suppressed and poorly formed black birch and red maple and reducing the codominant black birch in the canopy. If a slash wall proves to be infeasible at this site, roughly a third of the stand will be regenerated with regeneration openings ranging one to two-acres in size with five to ten square feet of interior retention. Retention trees will favor oaks. The northern end of this stand, where it abuts Stand 4, may be affected by bald eagle conservation management practices buffers. Should any nests be active at the time of harvest, three acres would be restricted to harvest of only suppressed and intermediate canopy trees. To plan for this possibility, that area will only be treated with thinning of suppressed and intermediate canopy trees, with midstory treatments focused on tending existing overstory white pine. The largest diameter oak trees will be retained throughout the stand to maintain their carbon storage, wildlife habitat benefits, and as a long term legacy age class. Stand 2. The desired future condition of this stand is an oak hardwood overstory, with a high proportion of northern red, black, and white oaks, and a secondary component of hickory, red maple, black birch, eastern white pine. Desired regeneration would favor oaks and hickory. To accomplish this desired stand, regeneration openings will target concentrations of overstory black birch and red maple for removal where there is diverse oak regeneration available for retention. Eight acres of openings will range one to two acres in size, with their individual size drive by seed tree presence, understory, and other site characteristics. Between the openings thinning will similarly target black birch and red maple to reduce their seeding influence on openings. Where hickory is present, thinning will be used adjacent to encourage new hickory recruitment. Future regeneration openings will be placed adjacent to these openings to further release established regeneration. A third of the stand will be retained long term as a legacy age class. While the intention will be to preserve this existing age class long term, future changes to the stand due to pests, pathogens, disturbance, or climate change may necessitate the reevaluation for management.

Topic	Description
Silviculture Prescription (cont.)	Stand 3. The desired future condition of this stand is a pine oak overstory with a greater proportion of oak in the overstory, and increased age and height diversity. This stand will be treated with three acres of regeneration opening treatments. Openings will range from one to two acres in size and focus on establishing openings with high edge oak retention to create the conditions where oak regeneration could establish. A third of the stand will be retained long term as a legacy age class. While the intention will be to preserve this existing age class long term, future changes to the stand due to pests, pathogens, disturbance, or climate change may necessitate the reevaluation for management. Stand 4. In order to support current and future bald eagle populations the desired future condition of this stand is an eastern white pine stand with establish white pine regeneration. Treatment of this stand will be thinning and small regeneration openings. Following bald eagle conservation management practices and collaborating with DWSP Natural Resources, and current actively, or recently active nest trees will be located and clearly marked for retention. A majority of treatment within the stand will be light thinning to release potential nesting trees, or reduce establishing black birch (not a preferred nesting species). Regeneration openings less than an acre in size will be used to release pockets of white pine regeneration to serve as future nesting trees. Stand 5. The desired future condition of this stand is a pine oak overstory with a greater proportion of oak in the overstory, and increased age and height diversity. This stand will be treated with two acres of regeneration openings ranging from one to two acres in size and focused on release of existing white pine regeneration, or establishing openings with high edge oak retention to create the conditions where oak regeneration could establish. A third of the stand will be retained long term as a legacy age class. While the intention will be to preserve this existing age class long term, future changes to the stand due to pests, pathogens, disturbance, or climate change may necessitate the reevaluation for management. Stand 6. The desired future condition is a sugar maple dominated stand with sugar maple regeneration present. Given the high browse pressure and small size of the stand, it's unlikely that sugar maple regeneration will be achievable until browser populations decrease. Since it will be difficult to regenerate sugar maple under current conditions this stand will only be treated with light thinning of non-desirable species to release current overstory sugar maple.

General Climate Change Considerations:

This silvicultural approach is designed to improve forest resilience by initiating structural and species diversity and enhancing the forest's adaptive capacity to climate-related stressors. Currently, the area is marked by a lack of adequate regeneration, low species diversity in the understory, and the pervasive impacts of deer and moose herbivory, which threaten the forest's long-term ecological stability and capacity to recover from disturbance events like windthrow, pests, or drought. The use of slash walls to protect seedlings from herbivory will help to ensure regeneration success. By creating space for desirable regeneration, diversifying stand structure, and tailoring silviculture to species and site conditions, the treatment builds adaptive capacity, promotes regeneration, and lays the groundwork for a more resilient, climate-ready 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
Diffuse overstory removal, partial cut, habitat modification/maintenance.	Open **woodlands, savannas, barrens, and heathlands** are low tree-density, **fire-dependent** forests with diverse understory vegetation critical for conserving many state-listed rare species. They are **imperiled** across Massachusetts due to development and negative ecological alterations resulting from a lack of management primarily decades of fire exclusion. Climate experts recommend **prioritizing and maintaining sensitive or at-risk species and habitat**, with the expectation that pressure on these will only increase with changing climate. Ecological restoration of these sites ensures continued habitat function and reduces CLIMATIC vulnerability: • Reducing tree **density reduces vulnerability** to pests like southern pine beetle and to drought stress. • Restoring **native species** that are best adapted to the site **promotes resilience** to future drought, wildfire, and harmful insects. • Reintroducing low-intensity fire **promotes resilient native vegetation**. • Removing heavy fuel loads **reduces vulnerability to wildfire**. • Restoration better positions these sites **to adapt to climate change**. • Restored sites are **more reliable carbon sinks in the long term** than highly vulnerable dense fire-excluded forests. The agency recognizes that this site may store less carbon than denser forests in the short term. But climate models predict an increase in disturbance on these sites including drought, wildfire and range expansion of harmful insects that puts a dense fire suppressed forest at greater risk of becoming a carbon source in the long term. Projects like this are undertaken on Federal, state agency, and other conservation lands across the Commonwealth, under the guidance of collaborative teams consisting of biologists, restoration ecologists, foresters, and fire management professionals.

Proposed Activity	Alignment of Activity with Climate Oriented Strategies and Recommendations
Diffuse overstory removal, partial cut, late rotation regeneration related.	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**.
Slash wall construction	Strong consensus exists among land managers and climate science experts regarding the **threat to future forest health** posed by the introduction and spread of invasive plants. **Invasive plants** can: • aggressively **outcompete native plant species,** • dominate understory communities, and even climb, kill, and topple mature trees, • threaten overall **biodiversity**. • threaten **soil health** and long-term **carbon storage**. **Monitoring and controlling** invasive and interfering plant populations prior to and following forestry operations is a critical practice for **minimizing the risk of further impacts** inadvertently (though not unexpectedly) spread by harvesting-related activities.
Additional comments	

Equipment and Access Constraints and Considerations

Constraint Topic	Description and Considerations
Proposed Equipment requirements	Due to stone walls, the possibility that a slash wall will be constructed and the likely need to forward on existing roads, a forwarder will be required.

Constraint Topic	Description and Considerations
Proposed wetland or stream crossings	One stream crossing will be utilized for crossing the intermittent stream bisecting the proposed area. Two crossings are proposed, only one will be utilized during operations.
Further wetland comments	None
Vernal Pools	No vernal pools are present within the harvest area or adjacent to areas where equipment might operate.
Access improvements needed	Improvements are needed to Bohmer Road from intersection 12-4 east. Drainage ditches need to be dug out, areas of washed road will need material and grading, and there is one narrow choke point that needs widening if possible. Widening may require crushing boulders/bedrock on the edge of the road.
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
Pelham Hollow Shore	769	114.4	78	74
Purgee	1559	20.5	369	4

Additional comments on Subwatershed analysis:

Wildlife and Habitat Observations and Considerations

Wildlife/Habitat	Observations and Considerations
Natural Heritage Priority Habitats?	Yes
State Listed species present:	Yes
Rare Natural Communities:	No
General Wildlife Comments	A bald eagle nesting site was identified in the proposed area many years ago. It's unknown if the nest is still active. Heavy browse has been present in the proposed area for many decades. Evidence of browse pressure is present in browsed damaged striped maple, eastern hemlock, black birch, and occasionally even on the mountain laurel. Deer and moose scat was observed during sampling.

Cultural Resources Description and proposed protection measures

Cultural Resource	Description and proposed protection measures
Historical features present; comments regarding protection	Stone walls are present throughout the proposed area, but are concentrated in the northwest corner, as well as the eastern side. There are three known foundations, one is to the northwest of the landing, just outside of the proposed area. Another is south by southeast of the end of the old cart road on the northeast edge. The final is in the middle of the eastern edge of the proposed area. Notation on the 1938 taking sheets and aerial imagery suggest that none of these foundations were in use at the time of the taking. Existing barways and breaks in walls will be used during forwarding, walls and foundations will be flagged and protected during operations.
Description of site characteristics in relation to Ancient sites modeling or other verified evidence	Aside from a north south strip of ridge top in the northwest corner, almost none of the proposed area is < 7 % slope. The adjacent beaver pond may have served as a perennial water source in the past, but there are otherwise no perennial water sources nearby. Portions of the proposed lot in the northwest and northeast of the proposed area are classified as very stony.

Massachusetts Department of Conservation & Recreation

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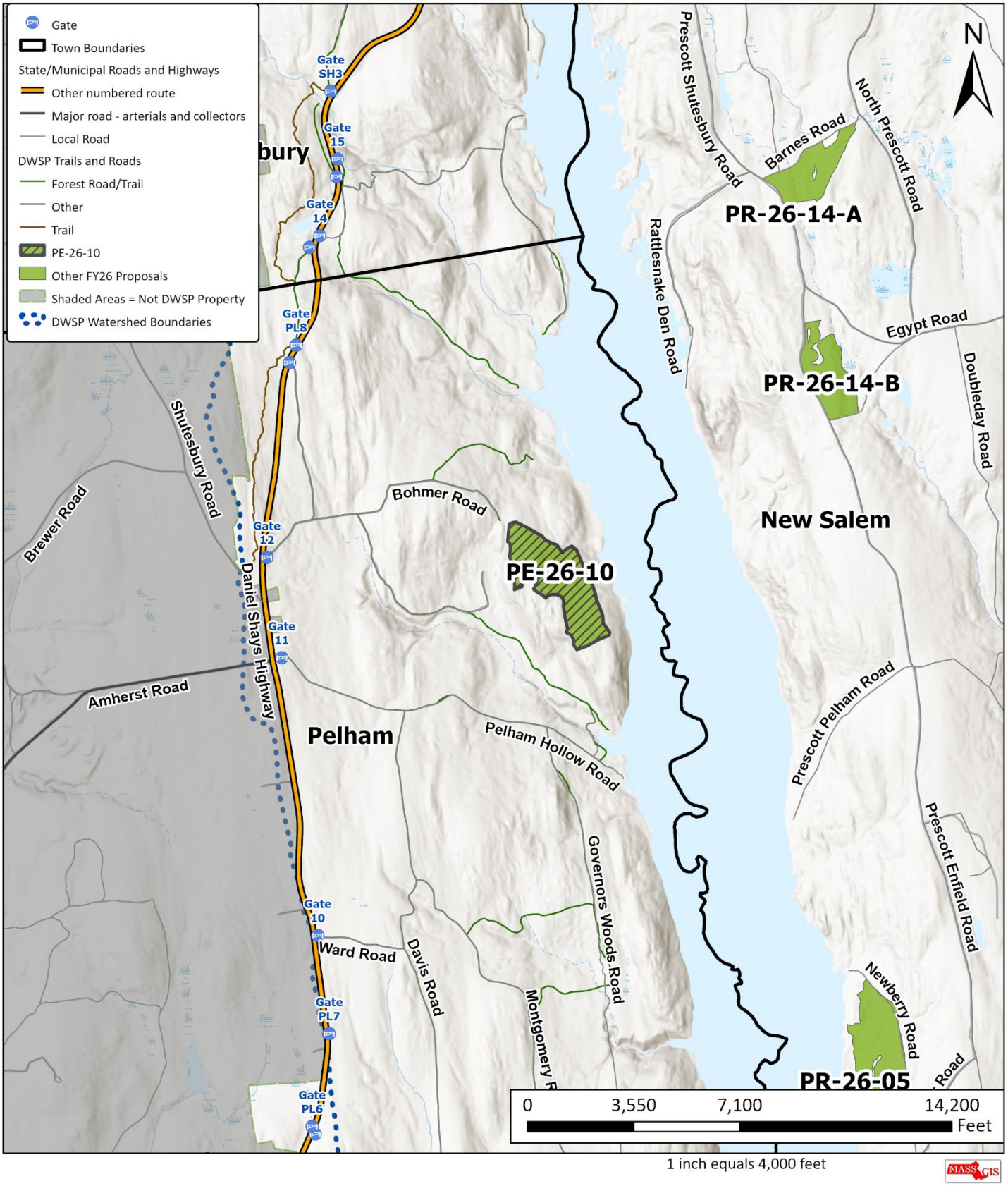
PE-26-10 -- Locus Map



1 inch equals 4,000 feet

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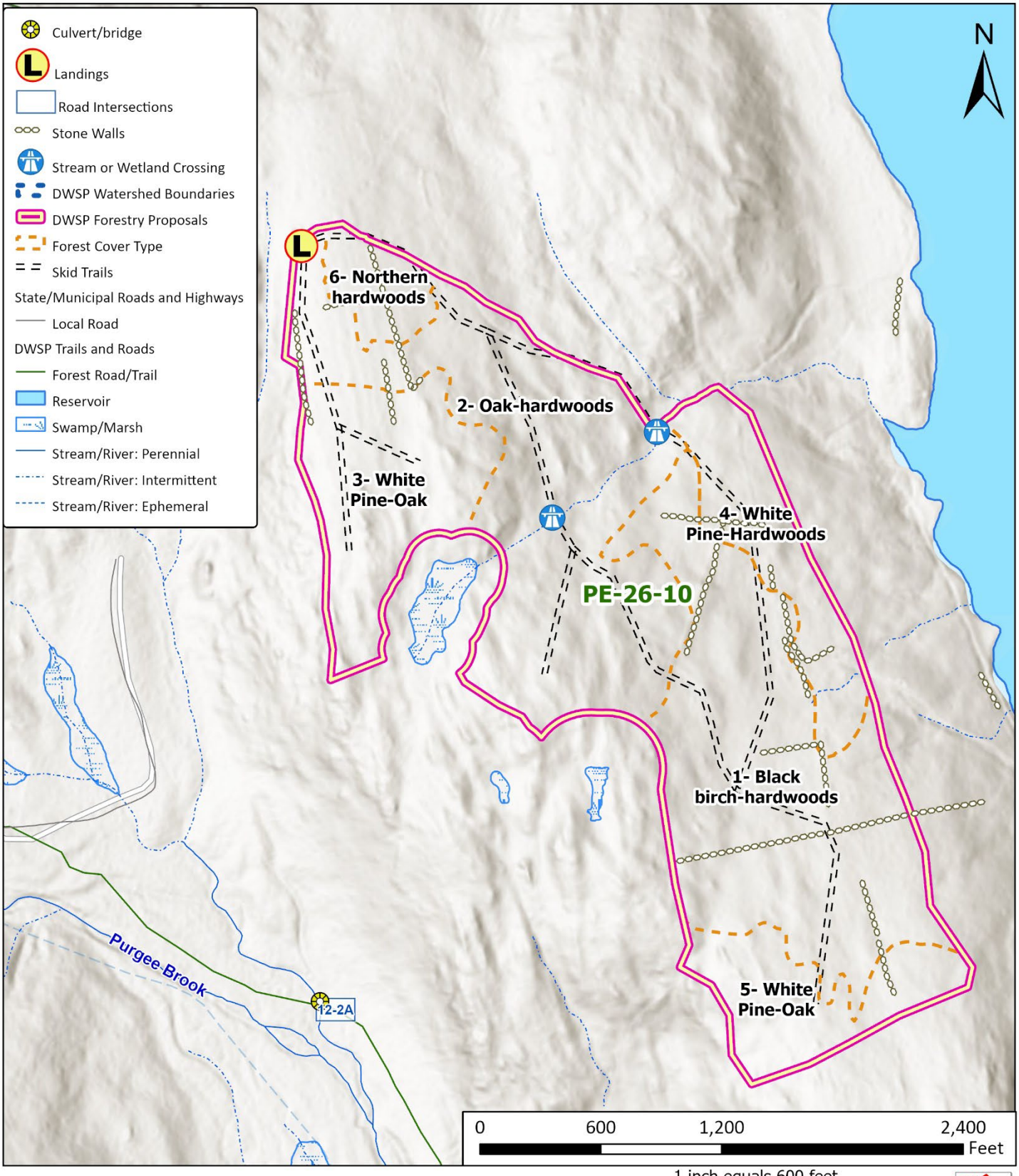
PE-26-10 -- Stand Map



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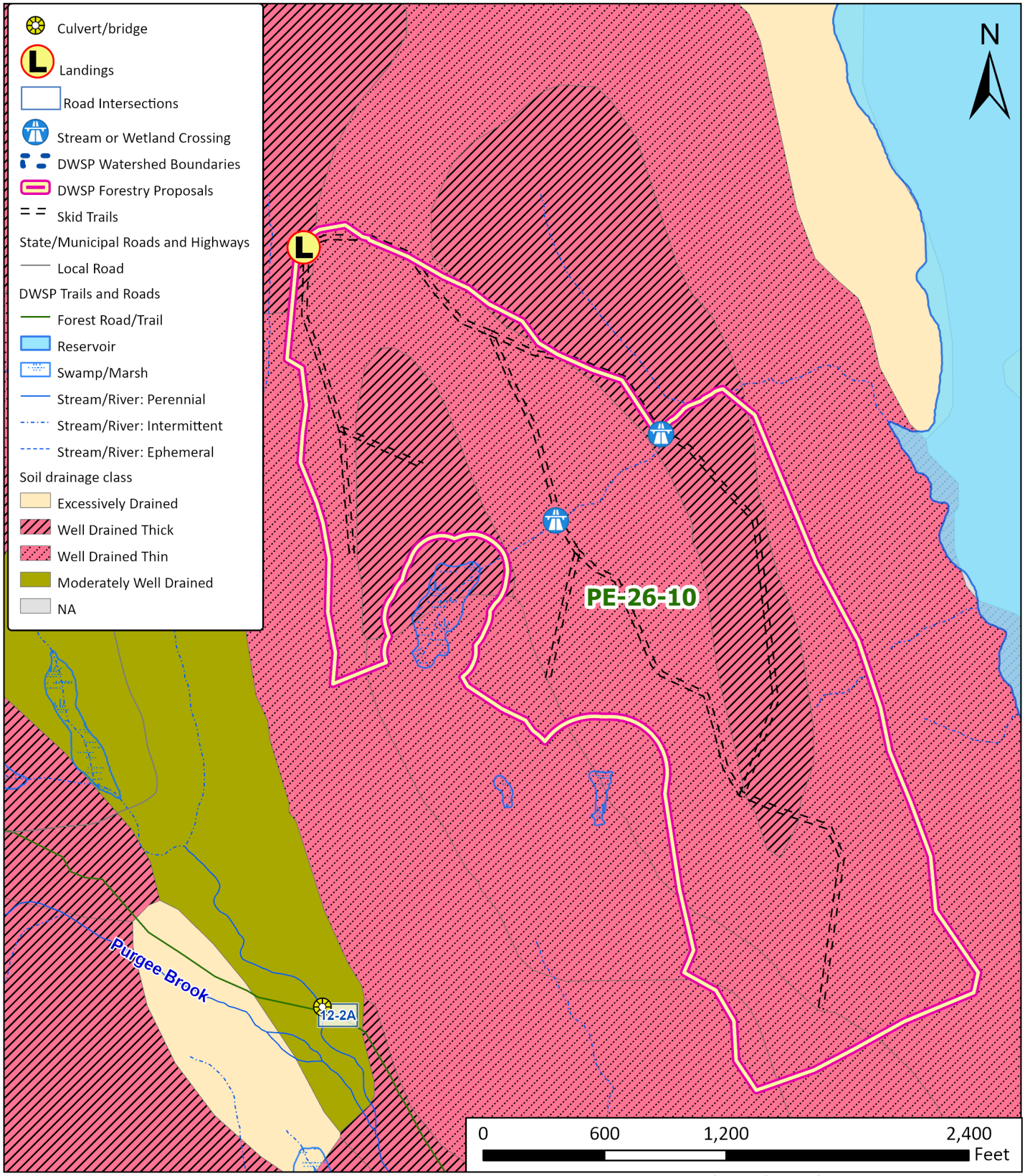
PE-26-10 -- Soil Drainage Classes



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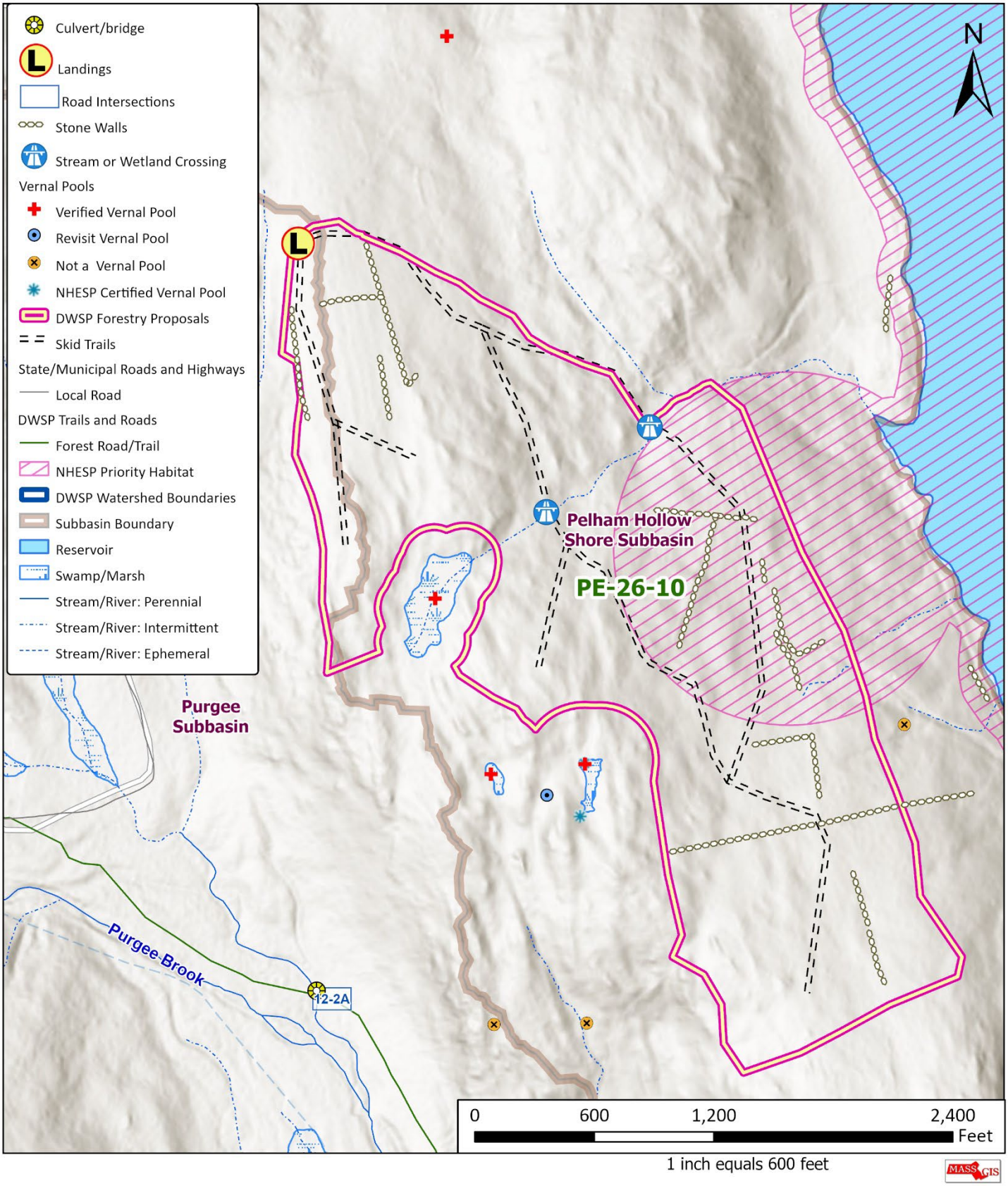
PE-26-10 -- Wetlands and Wildlife Resources



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PE-26-10 -- Cultural Resources and Landscape Characteristics