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	**PT-26-09**
Fiscal Year	2026
Watershed	Quabbin
Town(s)	Petersham
Forester	Helen Johnson
Estimated Acres by Treatment Type	21 to 29 total acres in regeneration openings and 50 to 64 acres of thinning. Regeneration openings will range in size from 1/5 to 2 acres each, with an average size of around 1.25 acres.
Total Proposal Acres	88.5
Block	Petersham
Compartment and/or Working Unit	9
Location and Boundary Description	This proposal is east of the **East Branch of Fever Brook** in Petersham, MA. It's bordered to the south by a DCR access road (Dugway Road), to the west and north by Fever Brook, and to the east by the height of land.
Previous Proposal?	No
Project Goals and Summary Description	This site was selected due to its severely inadequate regeneration and lack of vertical structure, particularly near East Fever Brook where white pine and hemlock tower over a largely empty understory. The overstory has been weakened by forest health concerns, and white pine is highly vulnerable to breakage in high winds even when healthy. If a severe windstorm were to cause rapid loss of those tall trees, the watershed forest filter would be severely degraded, leaving the Brook and nearby Quabbin Reservoir vulnerable. The primary goal of this proposal is to strengthen the watershed forest filter and increase its resilience by initiating a new cohort of young trees, which will be too small to be blown over by wind. This will be accomplished by creating openings of up to 2 acres where there are clusters of trees that are diseased, declining, or have poor stem structure, thereby increasing age class diversity while improving overall forest health and vigor.

Forest Cover Types and Acreages

Overstory Forest Types	Acres
White Pine-Hemlock	40.86
Hemlock-Hardwoods	24.25
White Pine-Oak	11.49
White Pine-Hardwoods	11.91

Understory Cover Types and Relative Importance

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

Forest Vegetation Description

Vegetation Topic	**Description**
General Description, Forest Composition, Stand History, and Harvest History	White pine and hemlock are the dominant overstory species across the entire proposal, either as a single dominant canopy, or with a lower canopy of hardwoods, including red, white and black oak, red maple and black birch sawlogs. Pole-sized trees of the same species are present but not common. Basal area ranges from 150 to 290 ft^2/ac in the White Pine-Hemlock type, to 110 to 230 in Hemlock-Hardwoods and White Pine-Hardwoods, and 90 to 240 in White Pine-Oak. Standing dead trees are common across all stand types, averaging 33 ft^2/ac, with a range of 0-90 ft^2/ac. The most pervasive forest health concern at this site is hemlock wooly adelgid, which has led to thinning crowns and extensive mortality. Some of the white pines also have thinning crowns, in some cases despite having plenty of growing space, raising the possibility of white pine needle drop fungi. Spongy moth mortality is present but not extensive, and nectria canker was observed on some birches. Past harvests include 53.0 acres of shelterwood prep completed in 1963 (Lot 0005), 7.6 acres of shelterwood prep completed in 1965 (Lot 0019), and 19.8 acres of shelterwood prep completed in 1992 (Lot 0608).
Advance Regeneration description	The vast majority of the proposal area has inadequate regeneration, ranging from no regeneration and virtually nothing in the understory (51% of the area) to sparse or marginal regeneration (46% of area). Only 2% of the area has adequate regeneration density, but with species limited to black birch, white pine and hemlock. Oak seedlings and saplings are present at extremely low density on only 5% of the proposal area, near Dugway Road. Interfering agents include witch hazel on about 10% of the area, most of it near Dugway Road, and hay-scented fern on 2% of the area.
Terrestrial Invasive Plants description	A small (~0.05 acre) patch of Japanese knotweed is located in the pullout to the DCR access road just outside the southwest corner of the proposal, and will be avoided in order to prevent its spread. If possible, treatment prior to harvest is recommended.

Description of Wetland Resources Present

Resource Type	Description of resources present
Wetlands	Vegetated wetlands along the East Branch of Fever Brook border the proposal to the north and west, and a small wetland (Verified Vernal Pool #13) borders the proposal to the southeast.
Streams	A perennial stream bisects the proposal from east to west, becoming braided as it approaches Fever Brook. Outside the proposal are the East Branch of Fever Brook to the west and north, intermittent streams to the northeast and west that flow into Fever Brook, and an intermittent stream to the southeast that flows into Verified Vernal Pool #13.
Vernal pools	Verified Vernal Pool #13 is 100 feet outside the proposal to the southeast, and will be protected according to the requirements in the 2017 DWSP Land Management Plan.
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	13	Charlton-Chatfield-Hollis association, 15 to 45 percent slopes, very rocky
Well-drained thick	87	Montauk-Scituate-Canton association, 3 to 15 percent slopes, extremely stony, Charlton-Chatfield association, 3 to 15 percent slopes, extremely stony, and Montauk-Canton association, 15 to 45 percent slopes, extremely stony
Moderately well-drained	0	
Poorly to very poorly drained	0	

Proposed Silvicultural Activities

Topic	Description
Site Selection and Silvicultural Objectives	This site was selected due to its severely inadequate regeneration and lack of vertical structure, particularly near East Fever Brook where white pine and hemlock tower over a largely empty understory. The overstory has been weakened by forest health concerns including hemlock wooly adelgid, white pine needle drop, and spongy moth. Even when healthy, white pine is highly vulnerable to breakage in high winds (see Hurricane Damage and Forests and One for the Ages: The Hurricane of 1938 Battered New England's Woods 75 Years Ago). If a severe windstorm were to cause rapid loss of those tall trees, the watershed forest filter would be severely degraded, leaving the Brook and nearby Quabbin Reservoir vulnerable. The primary silvicultural objective of this proposal is to strengthen the watershed forest filter and increase its resilience by initiating a new cohort of young trees, which will be too small to be blown over by wind. This will be accomplished by removing clusters of declining trees, thereby increasing age class diversity while improving overall forest health and vigor. Species diversity will be maintained in the overstory, and promoted in the understory by creating openings large enough to regenerate to shade intolerants.

Topic	Description
Silviculture Prescription	Regeneration openings 1/5 to 2 acres in size, totaling 21 to 29 acres and averaging around 1.25 acres, will be located where there are clusters of trees that are diseased, declining, or have poor stem structure. Trees on the perimeter of openings will be healthy and vigorous with stable stem structure, and will be either vertical or leaning away from the adjacent opening in order to minimize damage to regeneration if they fall or are cut in the future. Witch hazel and trees ≥5 feet tall within openings will be cut, except for the rare healthy oak saplings, which will be flagged for retention. In 90% of openings over 1/2 acre, 5-10 ft^2/acre of basal area will be retained, with healthy oaks and regionally uncommon native species being favored for retention. Areas between and around openings will be thinned, with particular attention to improving the vigor and seed bearing potential of oaks and making perimeter trees around openings more windfirm. Declining hemlock and white pine will be targeted for removal to improve forest health and increase biodiversity.

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
Regeneration patch cuts (full overstory removal, partial stand)	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.
Thinning (diffuse overstory removal, partial cut, 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**.

Proposed Activity	Alignment of Activity with Climate Oriented Strategies and Recommendations
Protection of soil carbon a. Careful routing of skid trails to avoid steep slopes and sensitive soils, and reinforcement of soft ground with slash. b. Installation of water bars in accordance with Massachusetts Best Management Practices. c. Stabilize the soil at the landing with conservation mix or equivalent seed source.	Routing skid trails to avoid steep slopes and sensitive soils and reinforcement of soft ground with slash (tops and branches from cut trees) prevent soil erosion and compaction. Water bars help stabilize skid trails and ensure that **excessive erosion** is avoided while maintaining the site for future forestry operations. Properly stabilized skid trails will **revegetate** naturally while being discernable enough to use in future operations. Beyond compliance with the BMP manual standards, the size and frequency of water bar installation, and degree of stabilization, should be determined by: • **Other uses** that may occur between operations, e.g. hiking trails, snowmobiles trails, use as firebreaks, or unauthorized uses (OHV/ATV) • The **impacts of future climate conditions**, especially more frequent storms. If the area is already known to be wet, and in the future **more frequent storms are expected**, more water bars than what may be normally installed are encouraged. **Soil type**. Land managers may consider seeding and mulching water bars on highly erodible soils, steep slopes, or excessively wet areas to ensure longevity and prevent water bar degradation.
Temporary stream crossing One stream crossing at a right angle to the stream, located above the braided portion of the stream to avoid the need for additional crossings. A portable bridge will be required if the stream is flowing at the time of the harvest, with the option to use a poled ford instead if the stream is not flowing.	Temporary stream crossings are occasionally necessary to facilitate forest management activities, though careful project layout can help **minimize the number of stream crossings required**. • Crossing design, installation, maintenance, and removal should be done in accordance with the highest standard BMPs to minimize impacts to sensitive stream and wetland resources. • Plan for worst case **climate scenarios** that generally indicate a greater frequency of higher intensity precipitation events. Changing **climatic conditions** change will require the continuous evaluation.
Invasive plant control, including pre- and/or post-harvest and follow up treatments. Treatment/removal of non-native invasive plants prior to or following a forestry operation in accordance with an approved DWSP Invasive Terrestrial Plant Management Plan.	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.

Proposed Activity	Alignment of Activity with Climate Oriented Strategies and Recommendations
General/other Climate Change Considerations	This silvicultural approach is designed to increase long-term forest and watershed resilience by addressing severe overstory decline and a significant lack of regeneration. Introducing a new age class helps buffer against climate-induced stressors by increasing stand heterogeneity and functional redundancy. These gaps are designed to promote light-demanding, climate-adapted hardwoods—particularly oaks—while retaining some healthy trees for structure, diversity, and future seed input. Removing high-risk stands containing declining hemlock and structurally compromised white pine reduces the potential for catastrophic blowdown and limits future losses from pests and pathogens. As part of this management, I recommend mentioning that select dead trees (snags) will be retained to support wildlife habitat, promote structural diversity, and contribute to long-term carbon storage. As they fall, they add ecological features just as coarse woody debris to help promote old growth characteristics.

Equipment and Access Constraints and Considerations

Constraint Topic	Description and Considerations
Proposed Equipment requirements	Forwarder required to protect the DCR access road if the landing is located on the other side (see Other Access Concerns for more information).
Proposed wetland or stream crossings	The stream crossing on the perennial stream that bisects the proposal will be located uphill (east) of the portion of the stream that's braided. Bridge mats will be required.
Further wetland comments	none
Vernal Pools	Verified Vernal Pool #13 will be protected by a 200 foot low ground disturbance zone, as required in the 2017 DWSP Land Management Plan.
Access improvements needed	none
Other EQ issues	none
In-kind Services	Treatment of Japanese knotweed in the road pullout SW of the proposal may be desirable, but would be better started a few years before the harvest.
Other Access Concerns (parking, trails, etc.)	The best place for a landing is in the road pullout to the southwest, but that location will not be used in order to avoid transporting the Japanese knotweed that's present at that location. In addition, contractors should take care not to move Japanese knotweed fragments of any size if they park in that area. Other possible landing sites include inside the roadside stone wall to the east of the road pullout (portions of the road without a stone wall are too steep), or across the DCR access road at the landing for PT-26-08, which could be operated in conjunction with this proposal.

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
Upper East Fever Brook	1017	32.8	221	61
Lower East Fever Brook	845	0	211	27

Additional comments on Subwatershed analysis: None.

Wildlife and Habitat Observations and Considerations

Wildlife/Habitat	Observations and Considerations
Natural Heritage Priority Habitats?	There's 0.57 acre of NHESP Priority Habitat in the southwest corner.
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	Verified Vernal Pool #13 will be protected by a 200 foot low ground disturbance zone, as required by the 2017 DWSP Land Management Plan; the proposal boundary has been drawn to exclude the 15 foot no cut buffer and the 100 foot shade zone. Dead and dying trees (snags) will be retained and protected whenever possible for wildlife habitat. Large diameter snags and logs, which provide habitat for broad suites of species and are relatively uncommon in the general landscape, will be prioritized for protection. Wildlife/sign observed on site: bobcat, raven, porcupine, moose and deer.

Cultural Resources Description and proposed protection measures

Cultural Resource	Description and proposed protection measures
Historical features present; comments regarding protection	A fragmented stone wall borders part of the eastern portion of the DCR access road and may need to be crossed for the landing, as described above. Additional stone walls are located in the northeast corner of the proposal and will be avoided and protected, as will two stone piles in the north third of the proposal. The Rollin N. Doubleday Sawmill was located on Fever Brook outside the proposal to the southwest. Any additional cultural features that are located before or during the harvest will be mapped, photographed, flagged, avoided and protected, consistent with the guidelines in the 2017 DWSP Land Management Plan.

Cultural Resource	Description and proposed protection measures
Description of site characteristics in relation to Ancient sites modeling or other verified evidence	Slopes are mostly 10-15%, with small areas near Fever Brook and on the hill tops closer to 5%. Aspect is mostly west, but varies from southwest to north. Microtopography is not pronounced.

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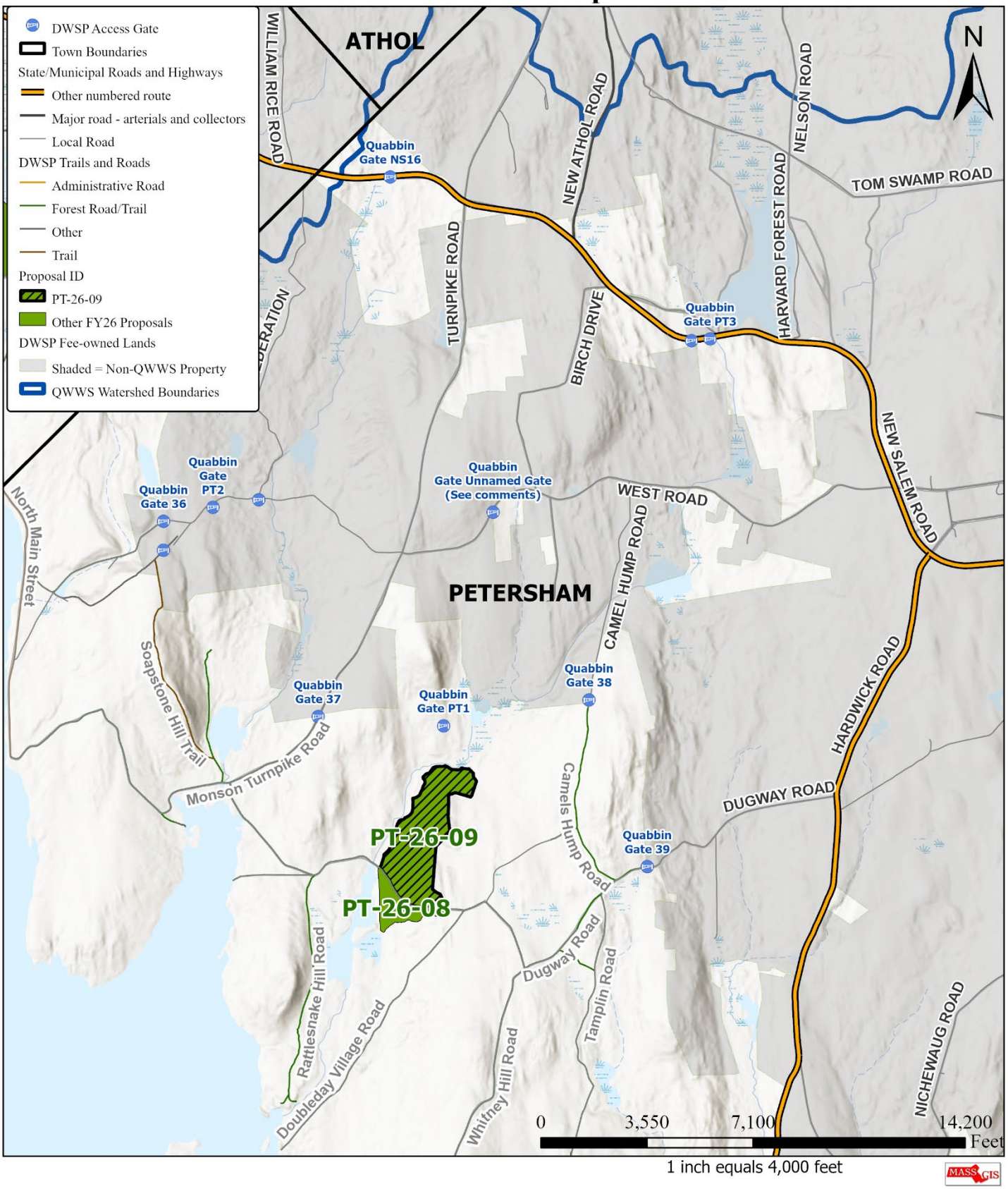
PT-26-09 -- Locus Map



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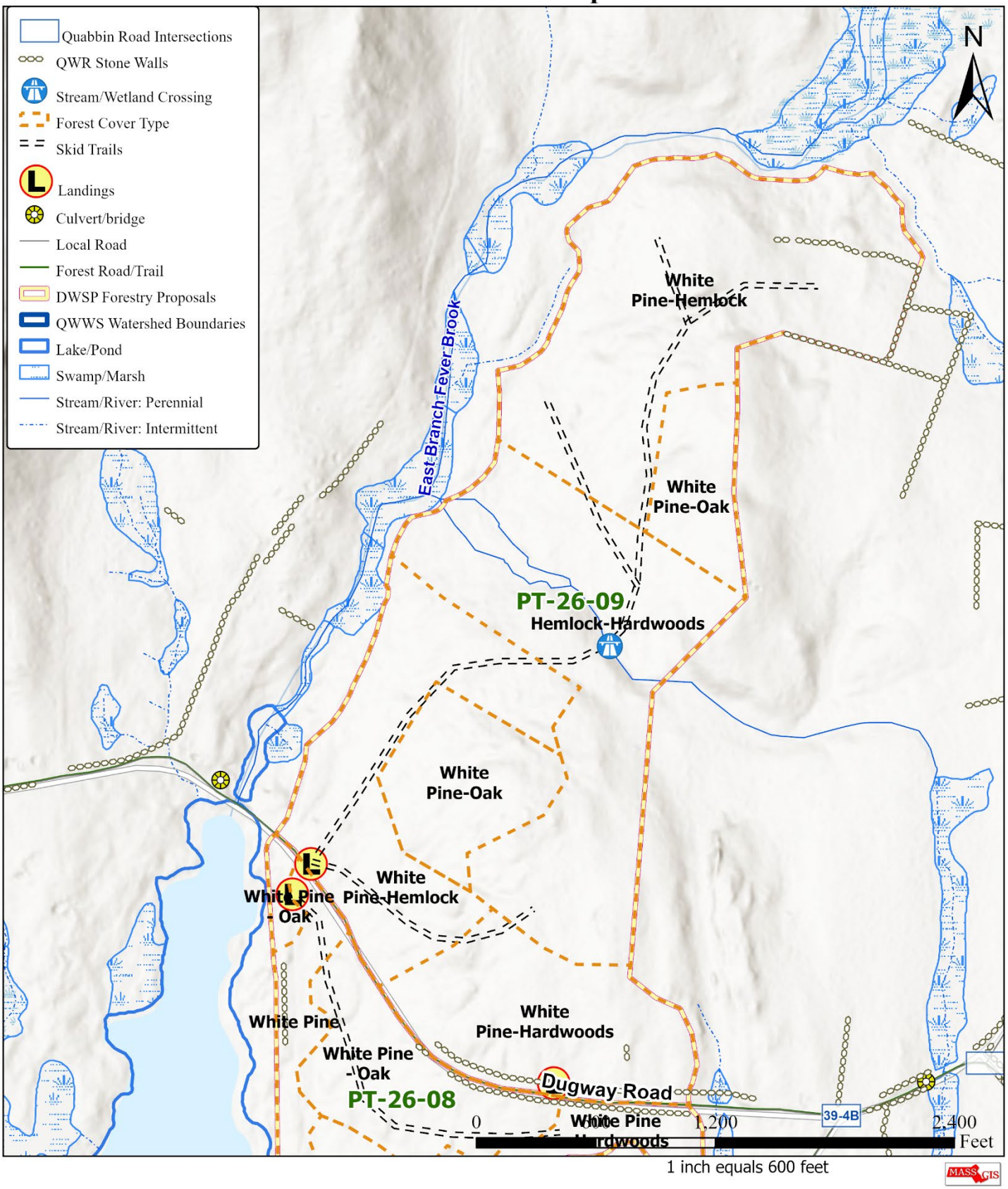
PT-26-09 -- Stand Map



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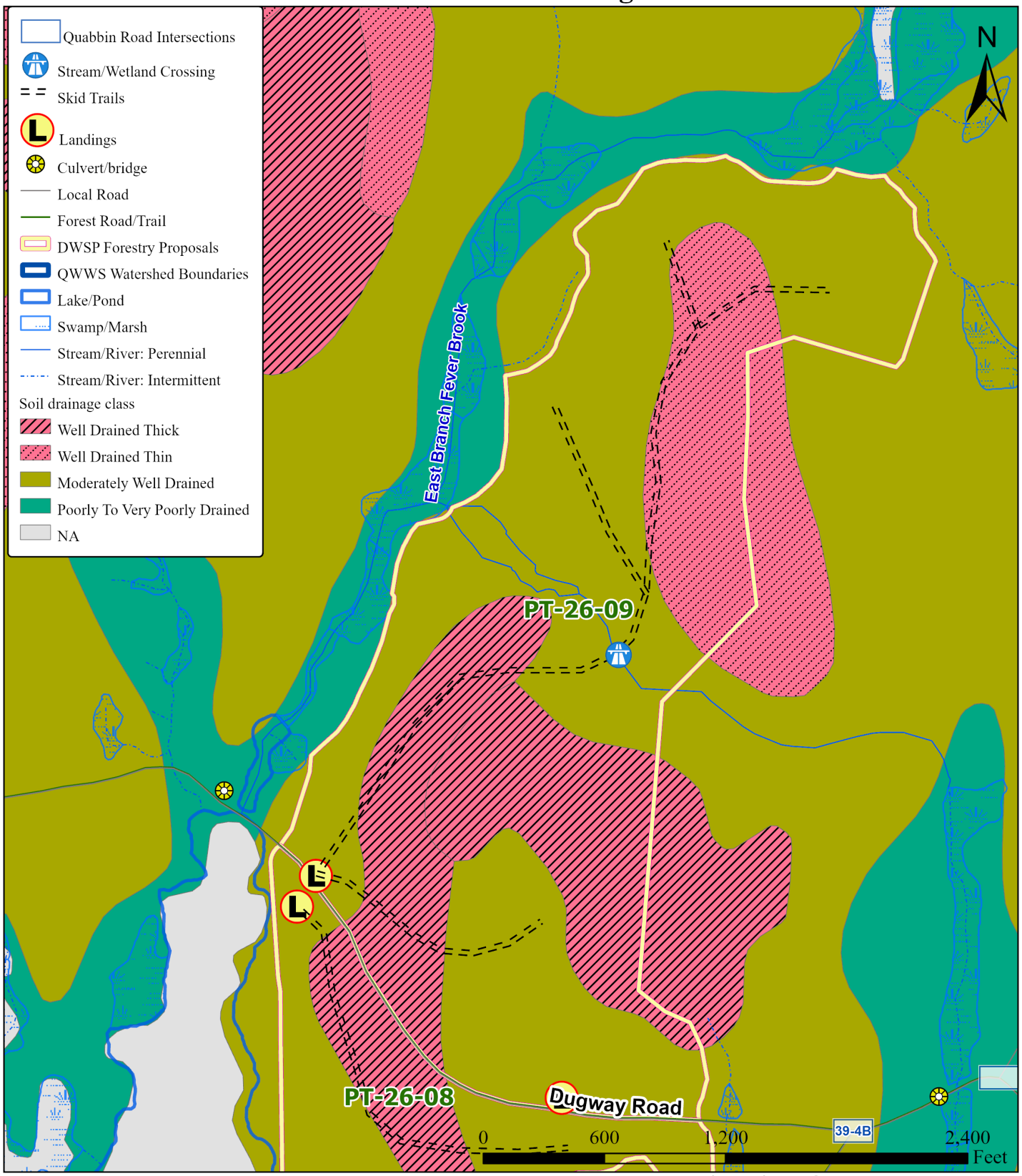
PT-26-09 -- Soil Drainage Classes



1 inch equals 600 feet

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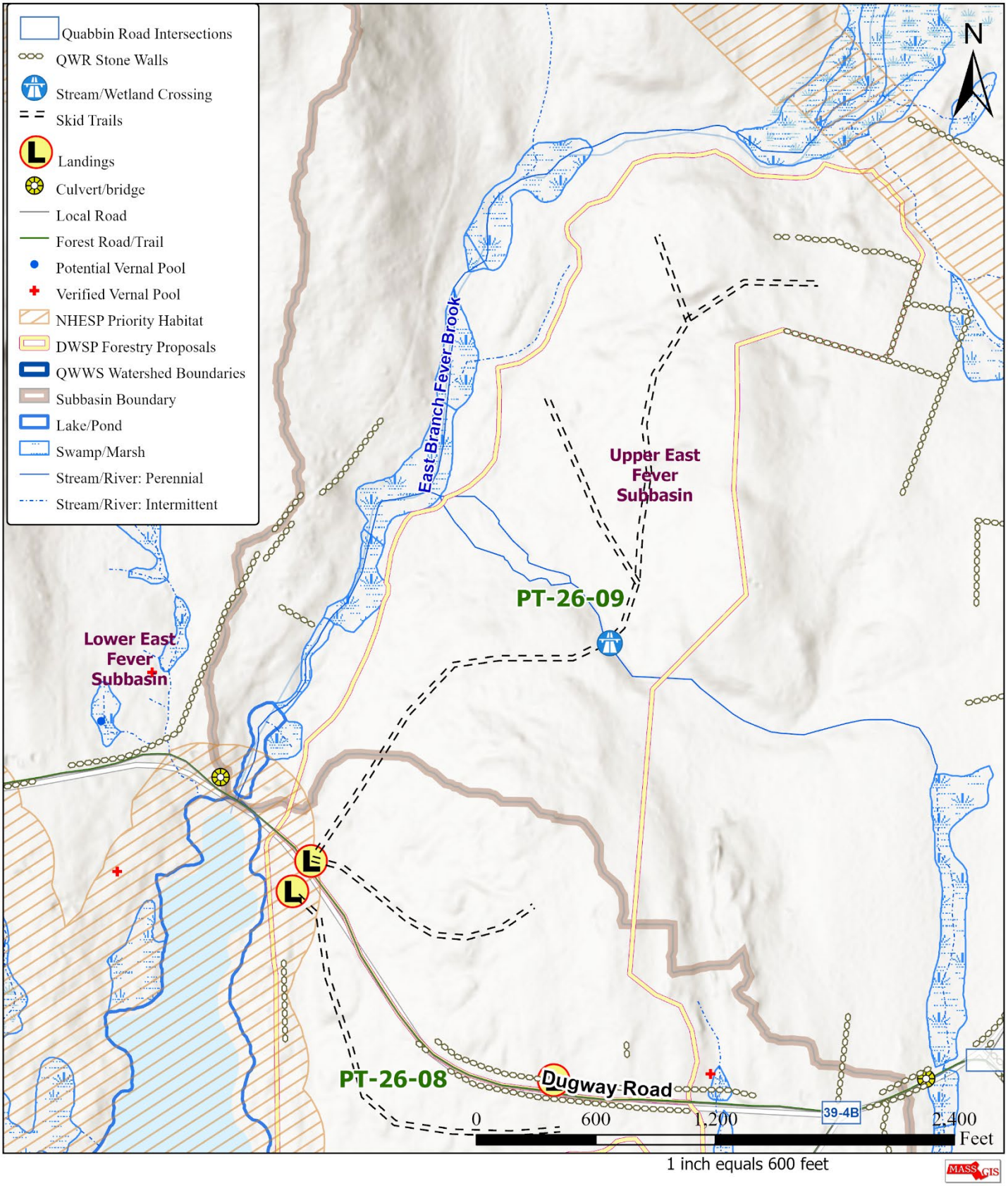
PT-26-09 -- Wetlands and Wildlife Resources



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PT-26-09 -- Cultural Resources and Landscape Characteristics