Wachusett Harvest Proposal WA-23-264

Proposal Update, May 2024:

This forestry proposal was originally approved through the public process in 2022. The project was 'paused' along with most other state lands forestry projects as part of the EEA Forests as Climate Solutions Initiative. Following the close of the work of the Climate Forestry Committee, DWSP determined the activities in this proposal align with EEA climate considerations developed from the recommendations in the CFC report. The proposal language and mapping below are preserved unchanged from that presented to the public in 2022 in ArcGIS Online Story Map format.

Proposal Goals

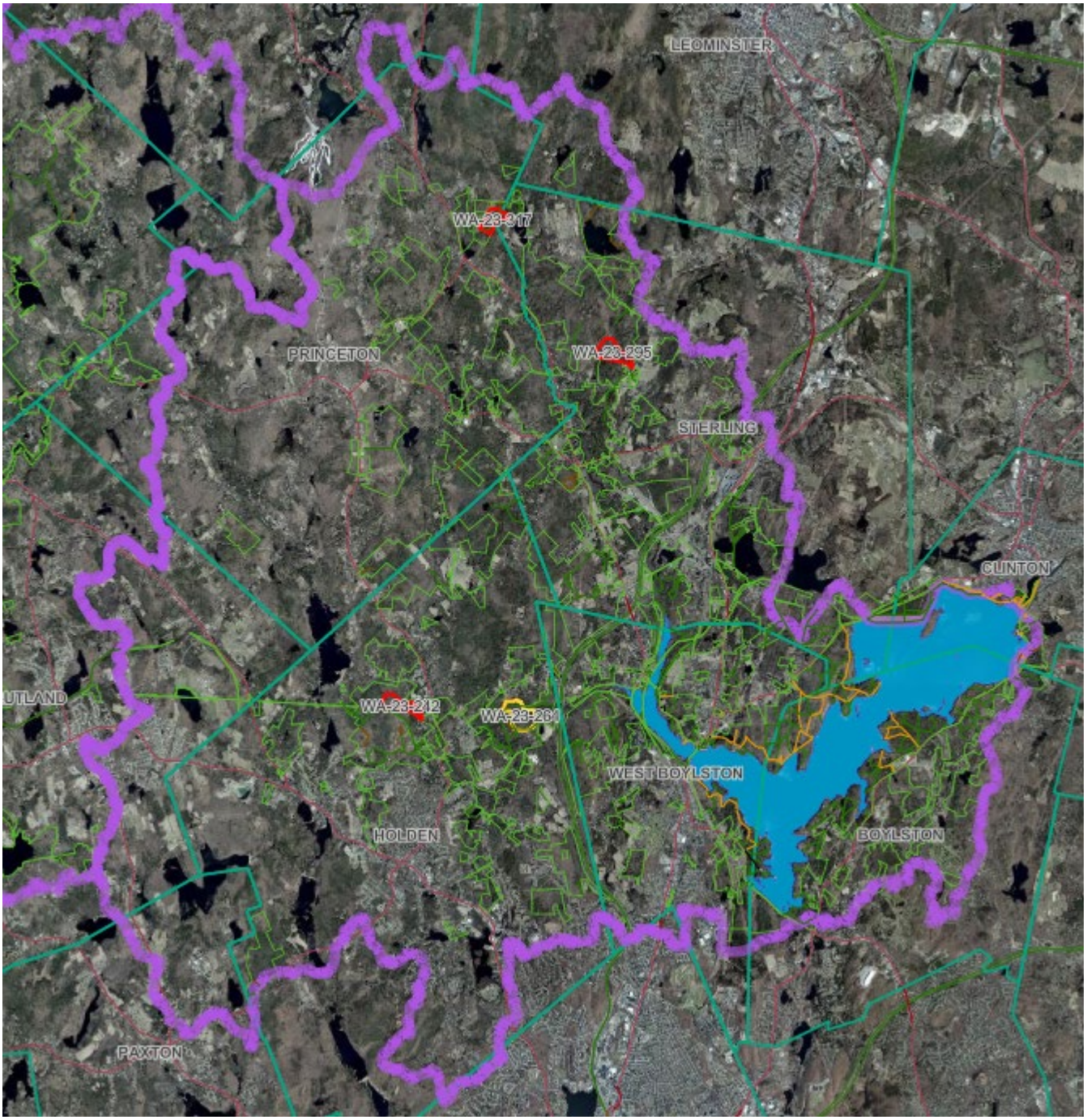
The primary goal is to continue the diversification of forest age structure and complexity that was initiated with forest management operations that started back in the early 1980s. The encouragement of white pine regeneration will continue as white pine is well suited to thrive and compete on this excessively-drained soil.

Proposal Location

(Yellow highlighted polygon in the map) Located to the west of the old Holden landfill, this working unit is bound on the north side by the Quinapoxet River and on the east, south and west sides by internal forest roads.

Total Acres: 75

Figure 1. Watershed Locus, WA-23-264.



General Description

Overstory Type(s)	Acres
White pine - oak	22
Mixed oak	46
Hemlock - hardwoods	3
White pine - hardwoods	3

	Understory Type(s)
Dominant	Tree seedlings/saplings dominate site
Secondary	Dry site - blueberry/huckleberry

Description of forest composition/condition:

The 44-acre portion of this area that is south of the aqueduct right-of-way has had two previous forest management operations. The first was in 1983 (Sale No. 32A). At the time, this entire area was a typical dry-site mixed oak stand with very few, widely scattered white pines in the overstory and little to no white pine regeneration in the understory. The goal of this operation was to thin the overstory and encourage the establishment of white pine regeneration. White pine is well suited to growing vigorously on these deep excessively-drained outwash soils. Having more white pine also increases the species diversity which benefits the overall health and resilience of this forest. The need for more species diversity would have been obvious given the historic Lymantria dispar moth population explosion that occurred both in this forest and across state in 1981.

However, ten years later, little white pine regeneration had become established in much of these 44 acres. So, in 1994, 18,900 white pines seedlings were planted in the nearly level 25 acres in the core of this area. In 1995, an additional 9,200 white pine seedlings were planted in the same general area.

A second forest management operation took place in 1998 once it was obvious that these planted white pine seedlings had survived. This operation removed the majority of the mixed oak overstory in about 20 acres, giving these pine seedlings the light and space they needed to continue to develop. As a result, there is now a well-established, young forest in 27% of this larger working unit. This vigorously growing young forest is more diverse in species than the older surrounding forest with far more white pine.

In the balance of this area south of the railroad bed, the forest overstory is made up of white oak, black oak and red oak with fewer white pine and red maple and very few, widely scattered pitch pine. There is good advance regeneration that has a good component of white pine. Otherwise, the understory is primarily lowbush blueberry and huckleberry with patches of mountain laurel. A Lymantria dispar moth infestation in 2019 killed much of the overstory in a couple acres just north of the aqueduct right-of-way. There is a patch of Viburnum cassinoides in this area along with some maple-leaved viburnum.

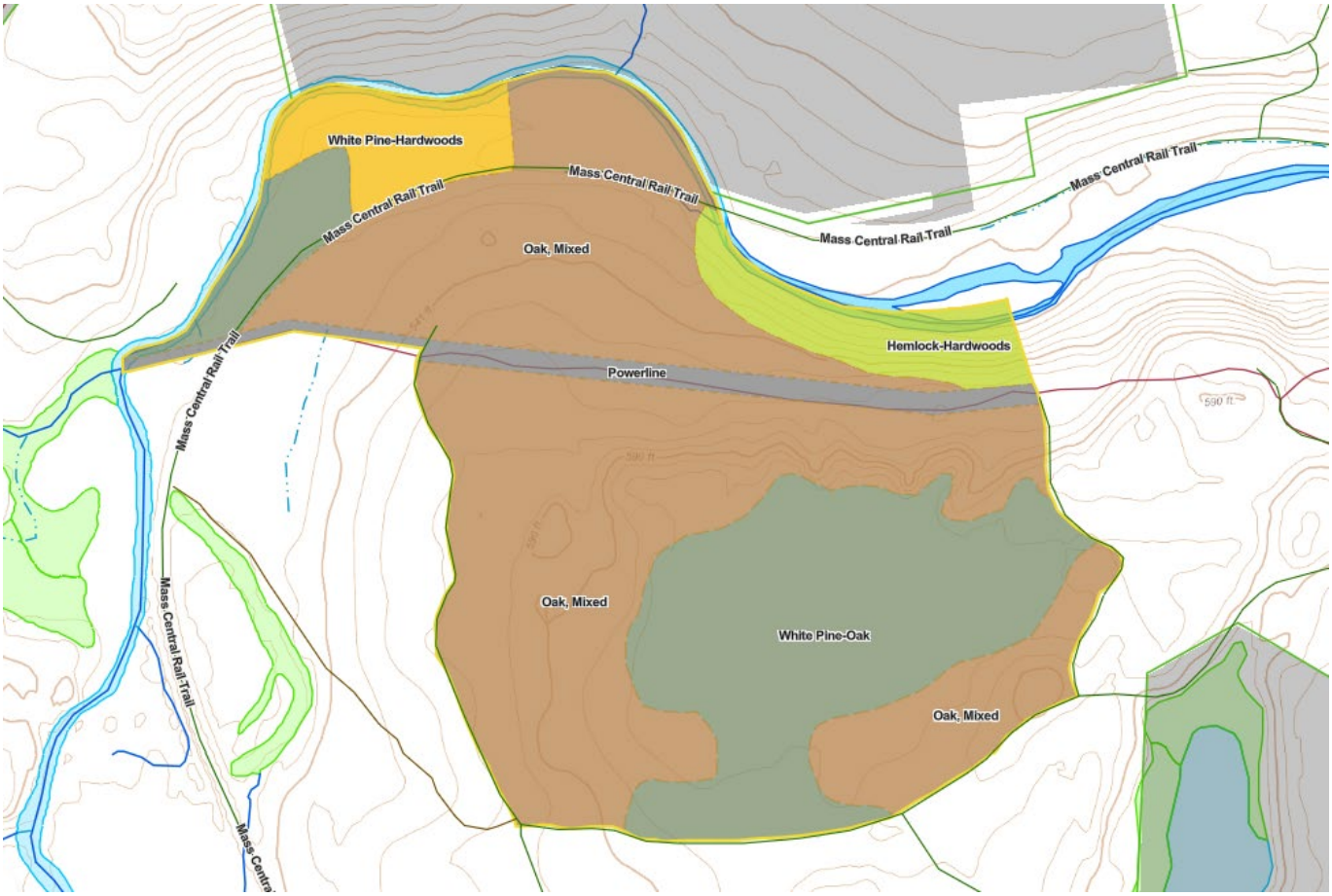
The 8 acres north of the railroad bed is significantly different than the balance of the area. Being lower with more moisture in the soil, the forest understory, in particular, is different. There is white pine, white oak and red oak in the overstory along with bigtooth aspen and hemlock. There is a significant hemlock midstory throughout much of it and hemlock woolly adelgid is present. There is good advance regeneration present along with shadbush, maple-leaved viburnum, arrow-wood viburnum, rattlesnake plantain and wintergreen.

The age structure of this working unit is as follows: 0%, 0-20 years old; 27%, 21-40 years; 0%, 41-60 years; 11%, 61-80 years; 0%, 81-100 years and 62%, >100 years old. The oldest stands originated in about 1910, making them 112 years old.

Assessment of Terrestrial Invasive Species:

Sampling found no invasives present in this area.

Figure 2. Forest cover types, WA-23-264.

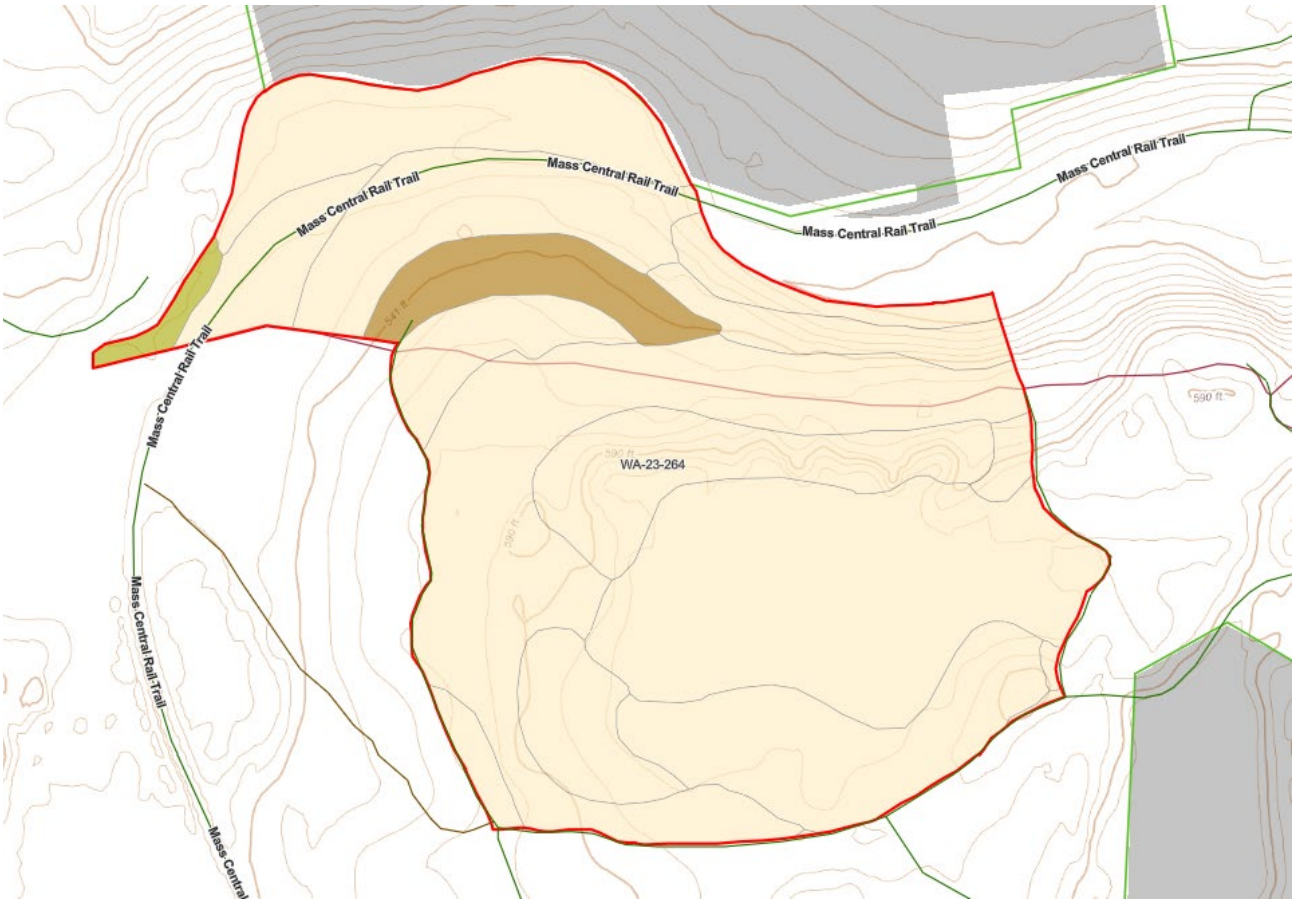


Soils

Drainage Class	%
Excessively Drained	95
Well Drained Thin	0
Well Drained Thick	5
Moderately Well Drained	0
Poorly to Very Poorly Drained	0

These excessively-drained outwash are the Merrimac, Hinckley and Windsor loamy sands. The Agawam fine sandy loam is a well-drained soil of outwash origin.

Figure 3. Soil classes, WA-23-264.

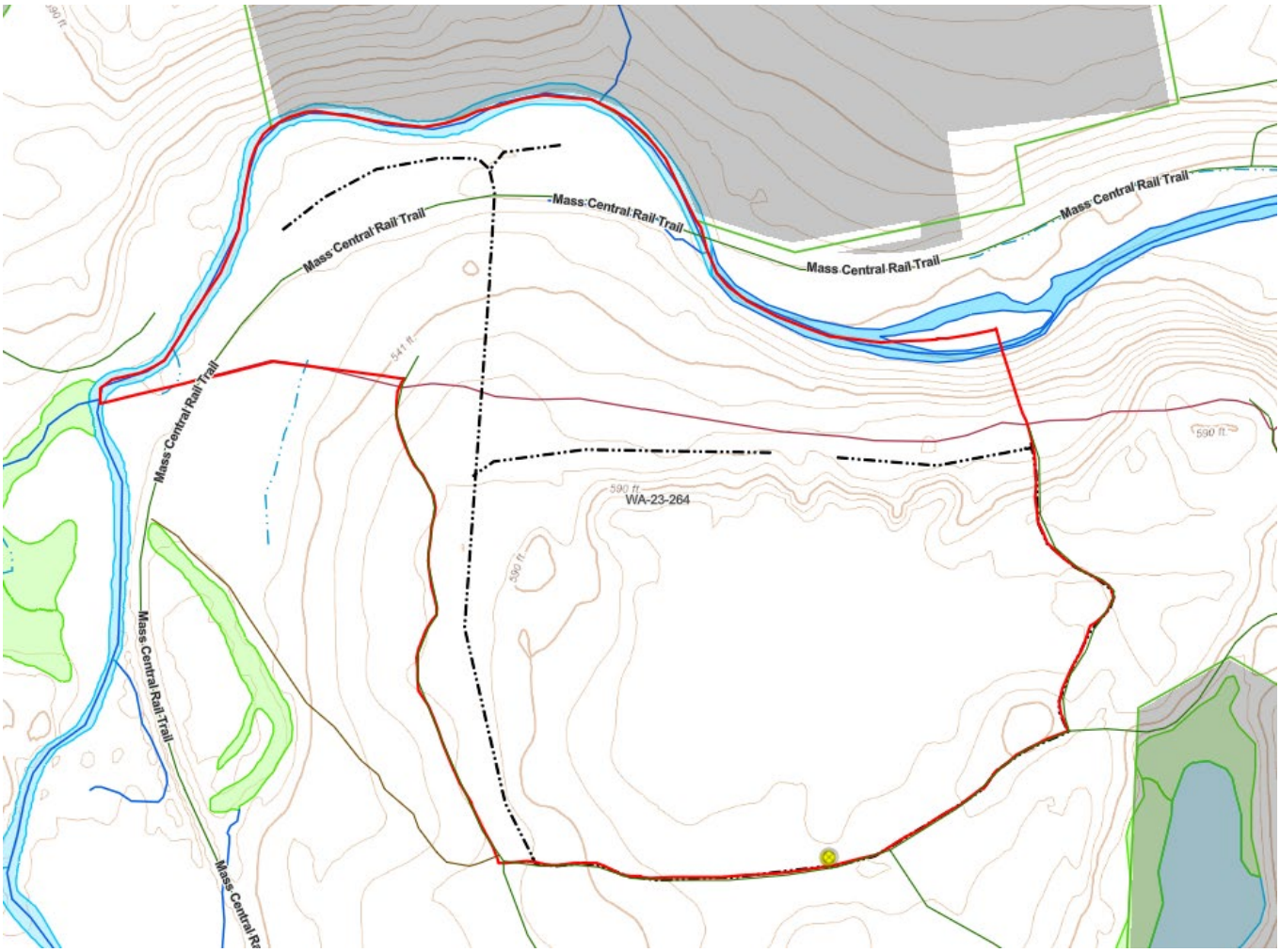


Wetlands

- Wetlands present? - **No**
- Streams present? - **Yes**
- Vernal pools present? - **No**
- Seeps present? - **Yes**
- Are stream crossings required? - **No**
- Are wetland crossings required? - **No**
- Is logging in filter strips planned? - **Yes** **(Riparian Zone Mgt)**
- Is logging in wetlands planned? - **No**

There is an interesting small area, only a fraction of an acre in size, in the far southeast corner of this site. It is obviously damp. There are no trees in the overstory. Sweet gale (Myrica gale) along with wintergreen and dewberry are present and one scrub oak (Quercus illicifolia) was observed. There are a series of seeps in a steep sloped area adjacent to the Quinapoxet River in the northeast corner of this area. This 3.4 acre area is unmanageable.

Figure 4. Wetland resources, WA-23-264.



Silviculture

Acres in Intermediate cuts: **15**
Acres in prep/establishment cuts: **0**
Acres in Regeneration cuts: **25**
Average regen opening size: **1**
Maximum regen opening size: **2**

Description of advance regeneration in proposal area:

There is excellent advance regeneration present throughout most of this area. Sampling found adequate regeneration in 81% of the plots taken in the older forest. It is comprised of white oak, red oak, white pine, black oak, red maple, black cherry and hemlock. Interfering levels of native shrubs were present in just 6% of the plots.

General comments on silviculture proposed:

With the excellent and diverse understory of seedlings saplings that are well suited to this site, a new age class will be created in this forest. This will be accomplished through the removal of the overstory in patches that range in size up to about 2 acres. These patches will be well distributed, taking advantage of where the advance regeneration is best. In the majority of these openings, some overstory trees will be retained which adds ecological value to the forest through the increase in structural diversity. Given the goal of establishing a new age class on about 1/3rd of the forest, the patches will total no more than about 25 acres in this 75-acre working unit. Some partial cutting is likely to occur between these openings. This will occur where there are opportunities to benefit certain trees such as pitch pine, black cherry, overstory white pines and hemlock.

Following the timber harvest, the age structure of this working unit will be approximately: 33%, 0-20 years old; 27%, 21-40 years; 0%, 41-60 years; 6%, 61-80 years; 0%, 81-100 years and 34%, >100 years old.

Climate Change considerations:

Typical silviculture in this proposal is designed to sustain fundamental ecological processes, reduce the risks of impacts from severe disturbances, and enhance species and structural/habitat diversity. Adjustments can be made to enhance portions of the area as an oak barren if desired.

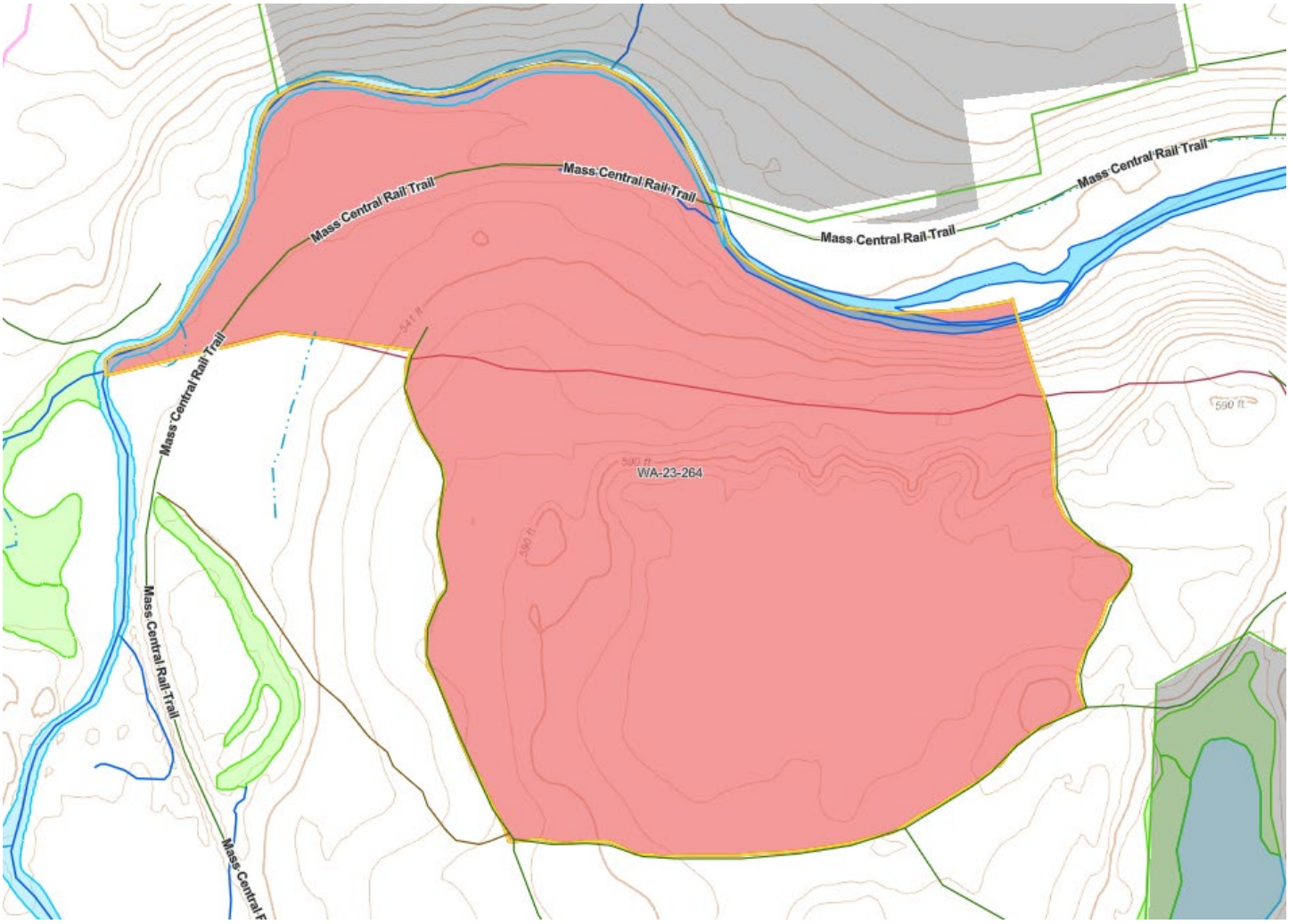
Figure 5. Orthophoto and cover types, WA-23-264.

Subwatershed Analysis

Sub-watershed number	Total DCR-owned Acres	Acres Regenerated on DCR Land in the last 10 years	Acres Remaining for Regenerating Up to the 25% / 10 Year	Acres part of this proposal
14 (Quinapoxet River)	1058	154	110	75

This proposal and proposal WA-23-242 are within sub-watershed #14. Assuming a thinning intensity of as much as 30% of the stocking being removed, this proposal would result in 29.5 equivalent acres of tree removal…(15 x 0.3 + 25= 29.5). WA-23-242 would result in 20 acres of equivalent acres of tree removal…(10 x 0.3 +17 = 20). Therefore the two lots combined would result in 49.5 acres which is well under the 110 total DCR-owned acres remaining for regeneration up to the 25%/10 year limit for this sub-watershed.

Figure 6. Subwatersheds, WA-23-264.



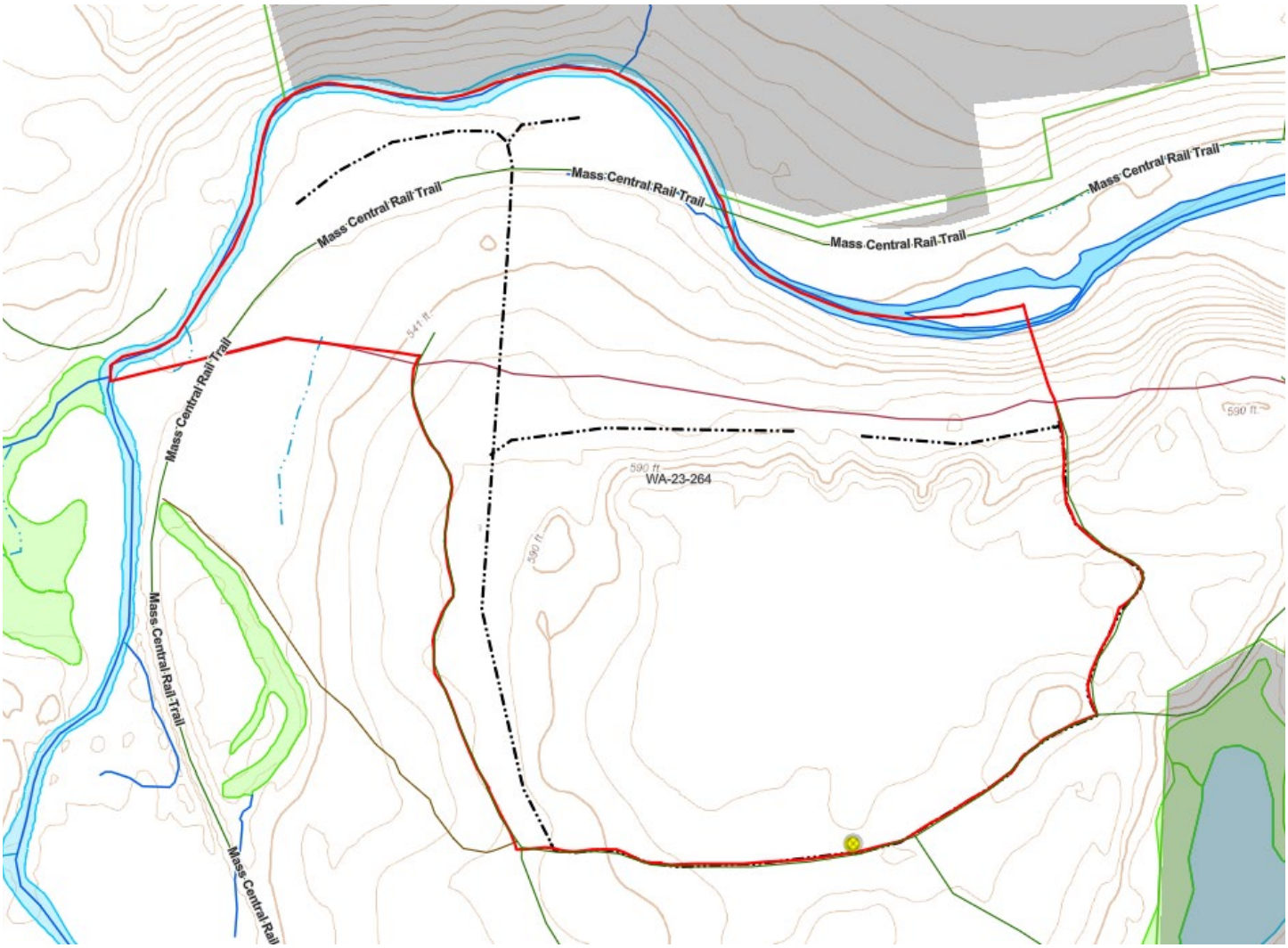
Equipment

Forwarder required: **Yes**
Feller/processor required: **Yes**
Steep slopes present: **No**

Comments on harvesting limitations:

With advance regeneration present and a desire to protect as much of it as possible during the harvest, a cut-to-length harvesting system will be employed.

Figure 7. Harvesting limitations, WA-23-264.

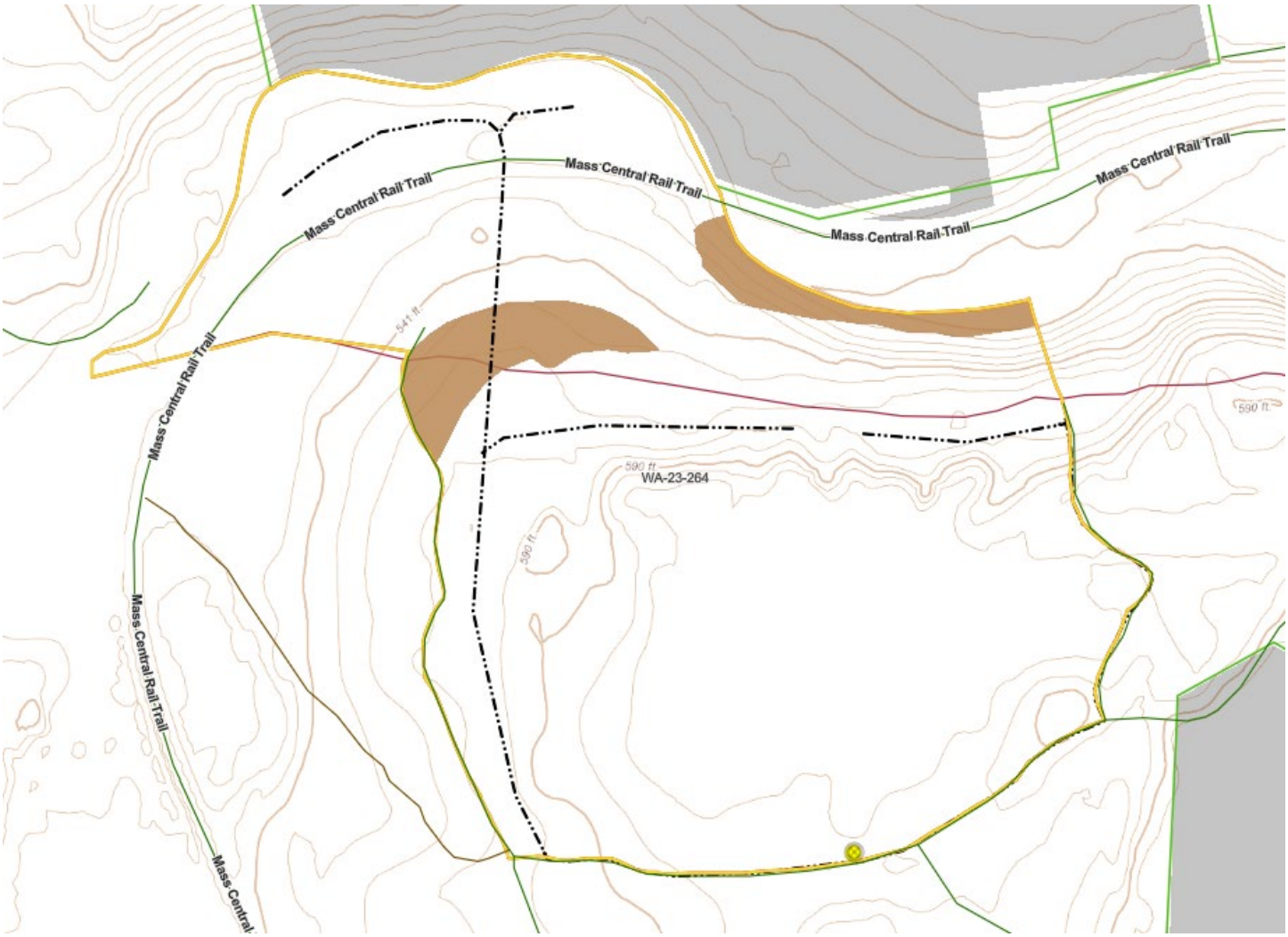


Cultural Resources

Comments on Cultural Resources:

Will implement BMP recommendations from DCR archaeologist as needed to minimize ground impact to skid trails.

Figure 8. Stony and Extremely stony soils, WA-23-264.



Wildlife Resources & Rare and Endangered Species

General Wildlife Comments:

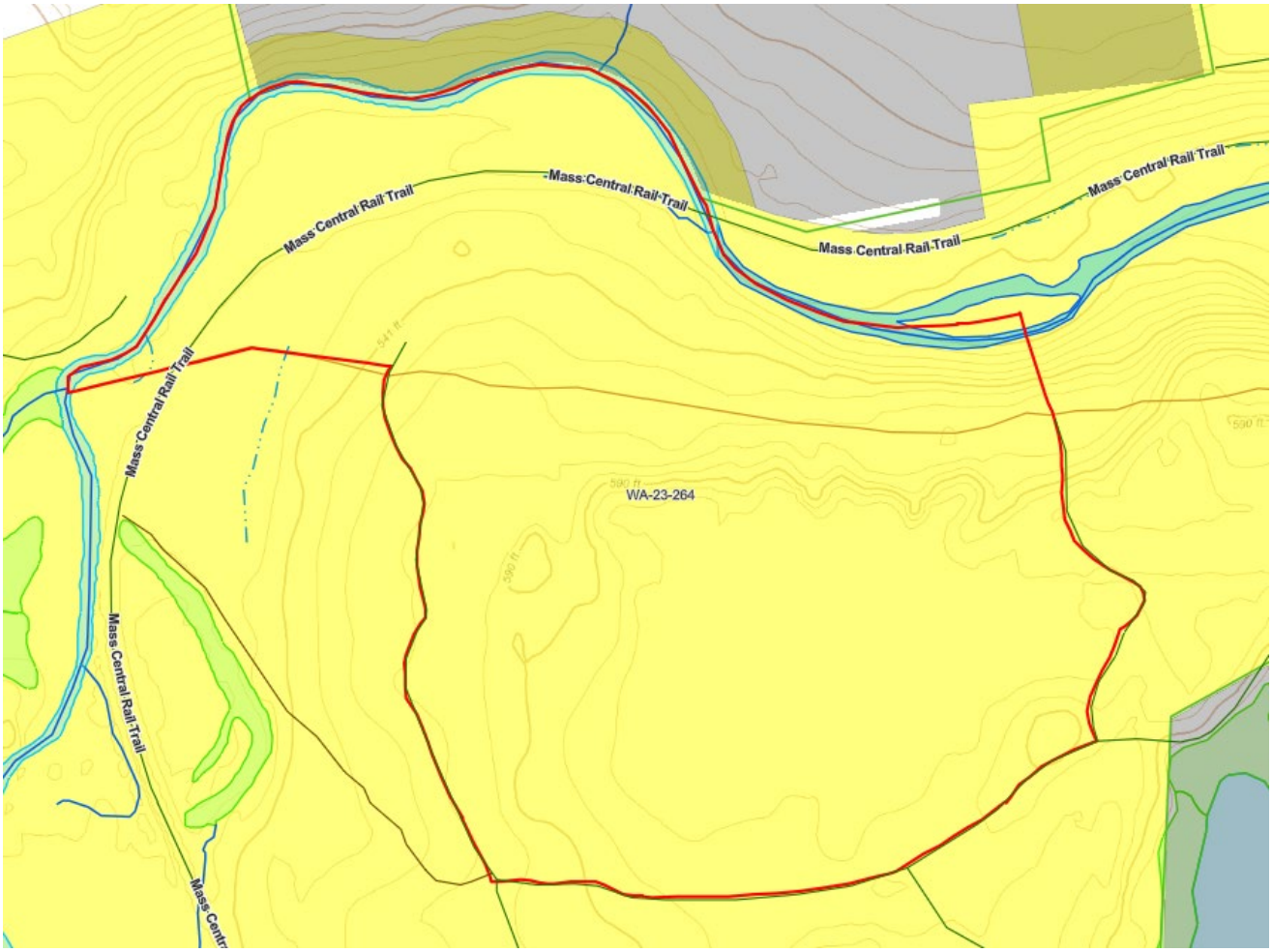
There are tall maple-leaved viburnum with fruits in this area. Hopefully this is an indication of a deer herd that is not at a density level that will inhibit tree regeneration.

Comments on Rare Species/Habitats:

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.

The silviculture proposed could also enhance the natural benefits of the existing oak barrens habitat that occurs on this site, a disturbance-dependent community that provides habitat for a large number of state-listed species

Figure 9. NHESP Priority habitat overlay, WA-23-264.

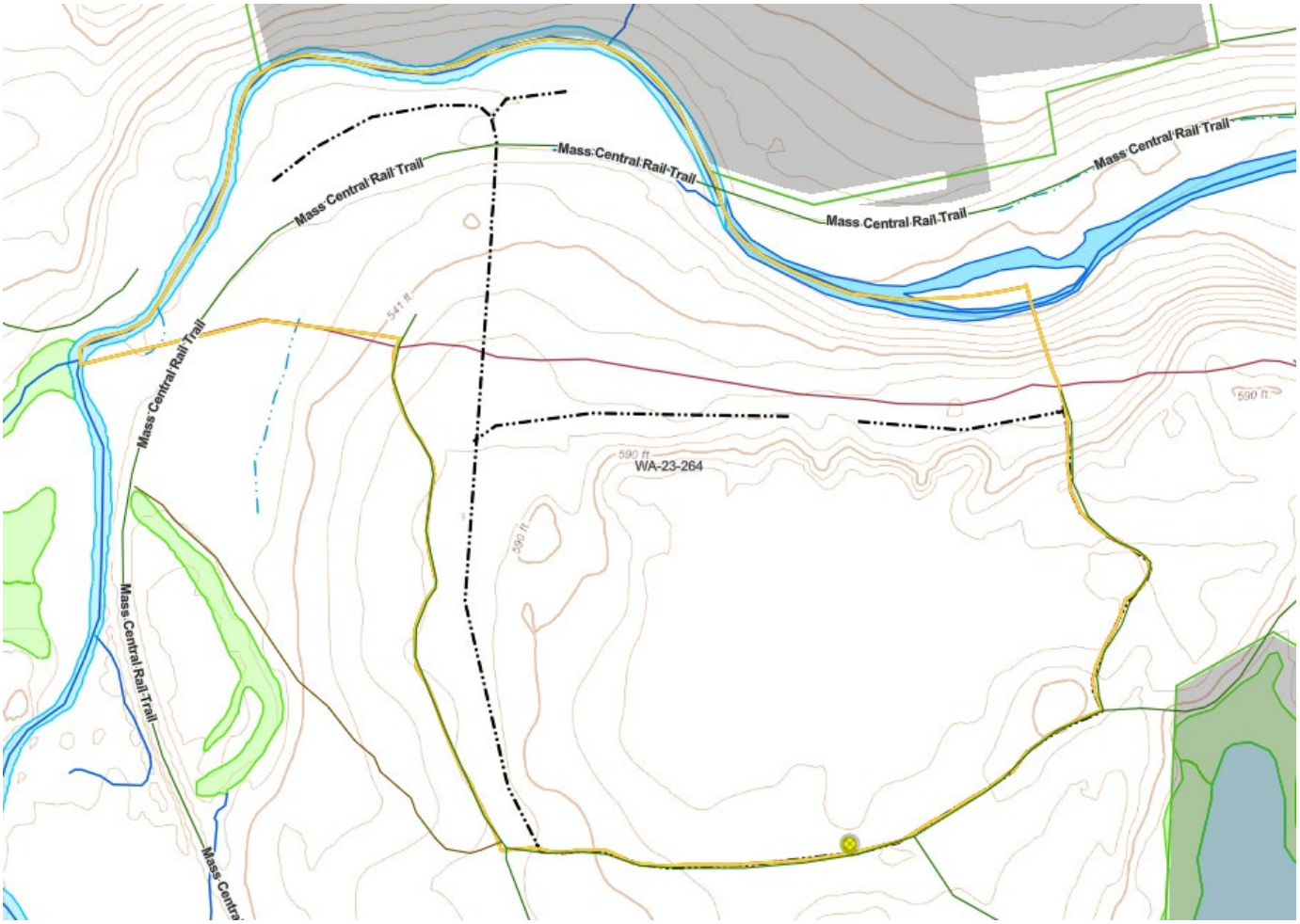


Environmental Quality Engineering

Comments on EQ Issues:

No crossings or EQ concerns.

Figure 10. Access planning, WA-23-264.



Forest Access Engineering

Gravel needed: No
Landing work needed: No
Culverts needed: No
Work needed on permanent bridges: No
Beaver issue: No

Further comment on access needs:

No access issues.

Figure 11. DWSP FY 2023 Forestry Proposals – Master Legend for story maps