

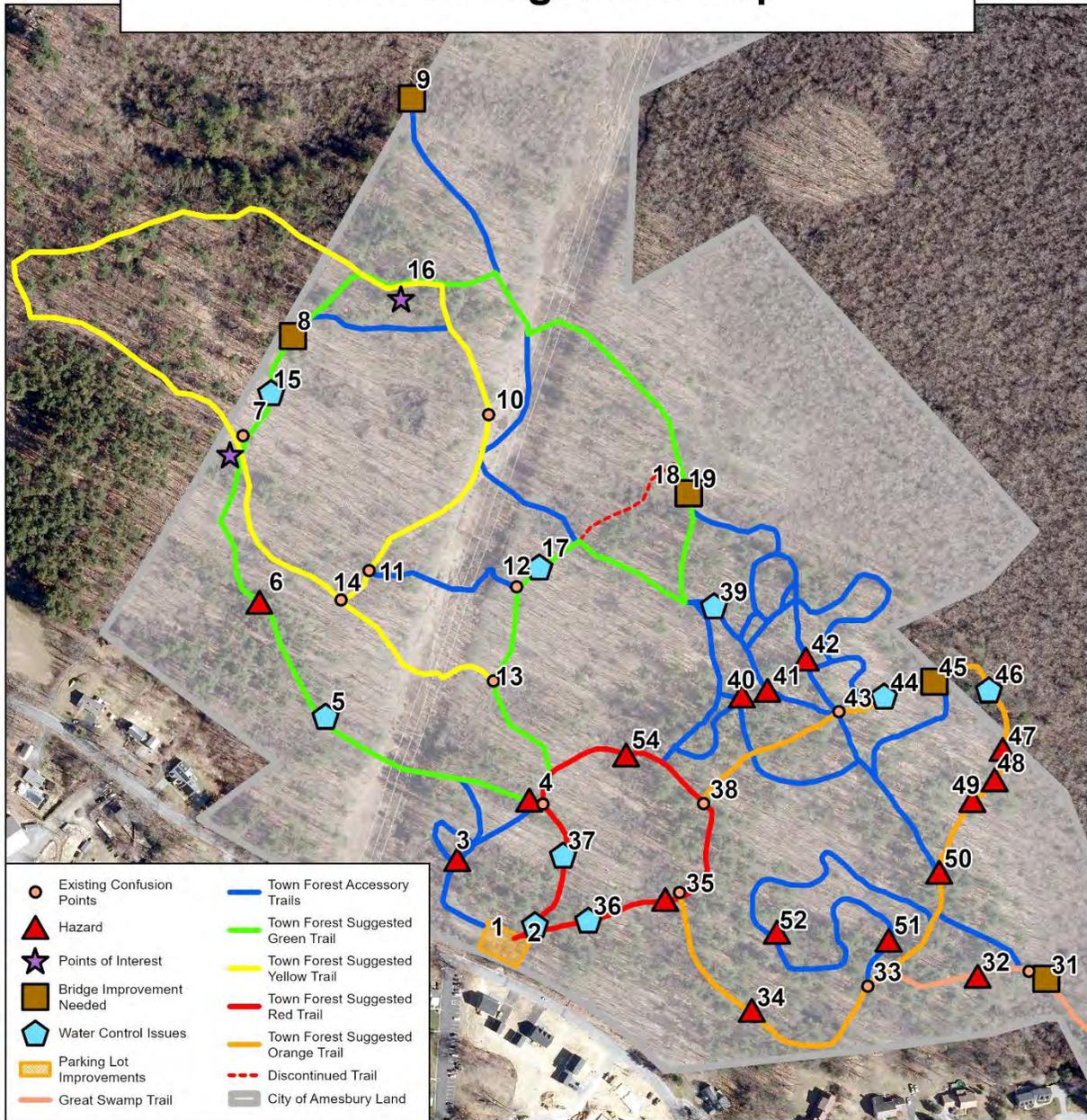
Trails Assessment Report City of Amesbury



Prepared by Woodsman Inc
Site Visit Dates: 8/23/2024, 9/12/2024, & 9/13/2024

**Town Forest &
Margaret Rice Conservation Area**

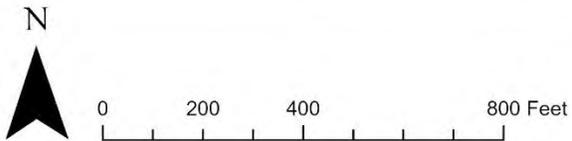
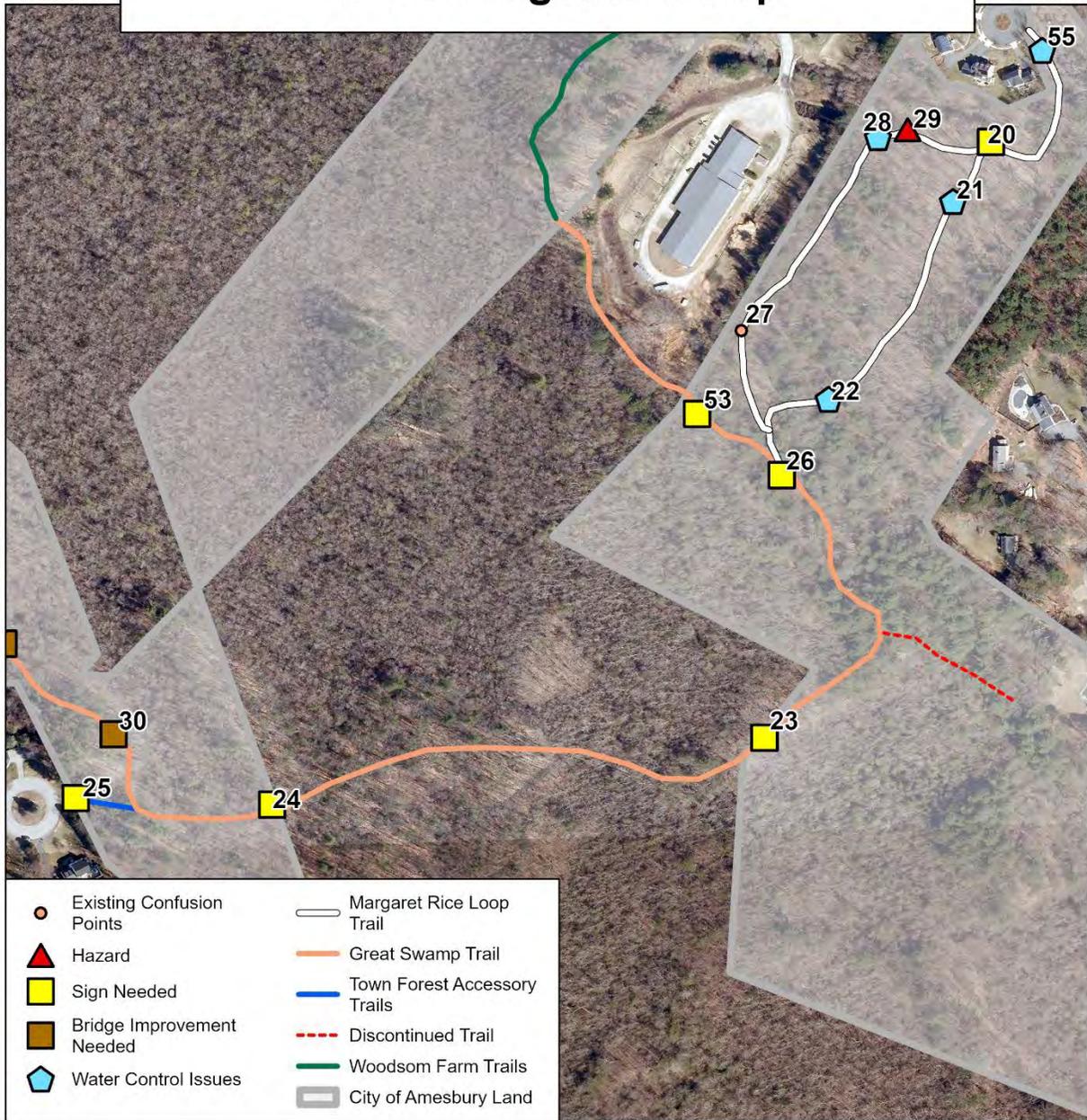
Town Forest & Margaret Rice Map 1 Trail Management Map



City of Amesbury Land created from tax parcel data from Mass GIS. 2023 aerial from Mass GIS. All other data collected in the field 08/2024. Map produced by M. Smith, Woodsman Inc 09/2024. Projection: NAD83 StatePlane Massachusetts, EPSG 26986

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Town Forest & Margaret Rice Map 2 Trail Management Map



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Town Forest and Margaret Rice

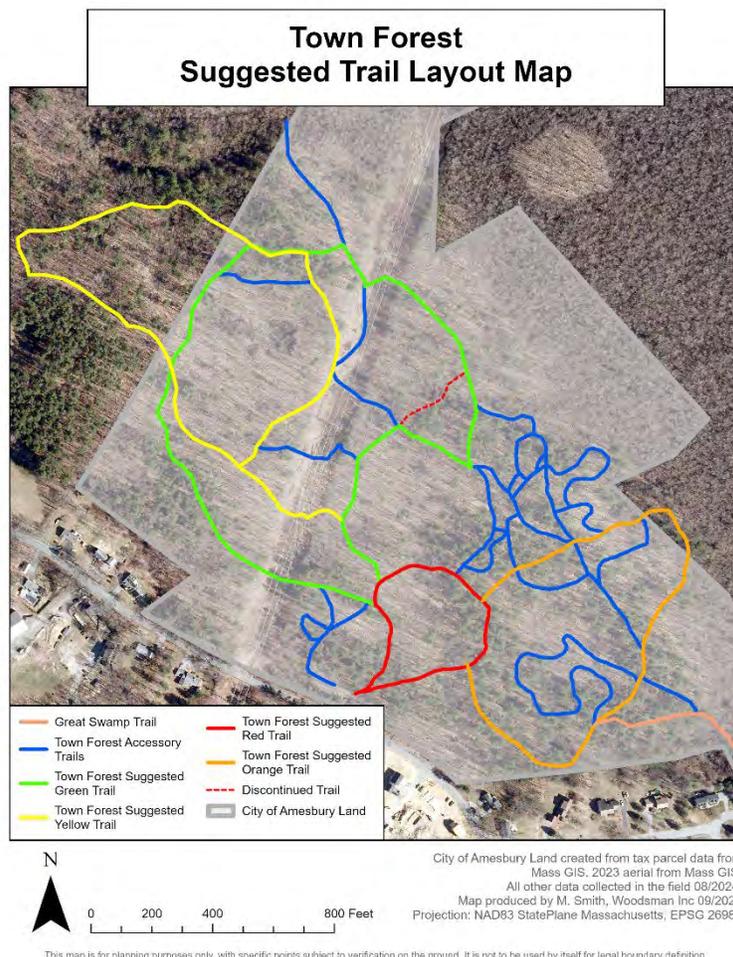
The report below references the numbers on the previous maps when referring to specific points.

When looking at the existing trail system currently constructed on the Town Forest property, our first suggestion is to create a system that makes sense for first time users and to have consistent trail markings throughout the property. The current trail map for this property, available at Amesburytrails.net, shows green, yellow, red, and orange trails, as well as numerous unmarked trails. When on the trails, the trail marking is sporadic and can be difficult to follow at times, making it easy to be unsure of where you are within the trail system.

Step 1 – Planning

Determine the exact location of each trail color while minimizing the number of unmarked connector trails.

Below is our suggestion for a trail system. The system consists of 4 trail loops and uses the existing trail colors as a starting point. There will be a yellow loop, green loop, red loop and orange loop. The Great Swamp Trail leads off the property to the east connecting to Essex County Greenbelt Land and the Margaret Rice Conservation Area.



There will still be some existing trails that are unmarked and will serve as connector trails, these can be seen in blue. The dashed red trail on the map above, is a trail shown on current maps of the property, but that no longer exists on the ground. The trail disappears at Point 18 in a wetland as shown below. Our suggestion for the new yellow trail uses an existing trail network located on private land, the city should confirm that the trail can continue to be used with the landowners.

Point 18 – Yellow trail ends in a wetland



Step 2 – Marking

The goal should be to make the trails as user friendly as possible. This starts with placing a good trail map at a kiosk at the trail entrance. A QR code could be placed on the map which links to a digital copy of the map so that users can have the map on their phone while hiking.

Next, the trail markings need to be consistent, accurate, and easy to understand. The standard is to mark trails with rectangular blazes, such as the one shown below.



Trail blazes should be consistent and especially visible at trail intersections to provide users with reassurance. The color of the trail blazes should match the color of the trails as shown on the trail map.

Some examples of currently existing confusing areas on the trails, that could be improved with blazing, are shown below.

Point 7 – There is a trail sign with the name Drumlin Muur, while on the Amesbury Trails website the trail is named Big Rock, creating confusion.



Point 10 – An unmarked intersection. A stake with a blaze could be placed into the ground to let users know where they are.



Point 11 – An unmarked intersection. Blazes will let users know which trail is which.



Point 12 – A trail across the powerlines near an intersection. Using blazes painted on wooded stakes will reassure users that they are on the trail in confusing areas, such as powerlines.



Point 13 – A confusing intersection. In this location there are yellow trail markings heading down both branches of an intersection, but according to the trail map they should only be on the right trail.



Point 14 – An intersection with no blazes or signage so the user does not know what trail they are on.



Point 27 – A spur trail leads off town land onto an adjacent horse farm. The sign below was found on the trail discussing users scaring the horses, this spur trail could be closed to avoid future conflicts.



Other confusing points in the Town Forest and the Margaret Rice Conservation area are points 4, 31, 33, 35, 38 and 43.

To create a consistent and understandable blazing system for this property the existing blazes will likely need to be removed. The current blazes are inconsistent and are sometimes on the wrong trails, based on the available trail map. In addition, the current blazes are of inconsistent sizes and shapes. The current blazes can be removed by painting over them with a gray paint to hide them, or scraping them off the trees.

Blazes are not necessarily needed in all occasions. For example, the Great Swamp Trail does not have any intersections and as such is easy to follow. Blazes could of course still be added to reassure trail users, however a sign at the beginning of the trail with the name of the trail and a distance to the next destination could be sufficient. For example, at the intersection of the orange trail and the Great Swamp Trail, a sign could be placed that states, Great Swamp Trail, 0.15 miles to Ashley Drive and 0.25 miles to The Great Swamp. A sign could also be placed at point 25, at the end of Ashley Drive with arrows directing you to either The Town Forest or The Great Swamp. At point 24 at the boundary between the Town Forest and the Essex County Green Belt Property a sign could be placed stating now entering The Great Swamp, Essex County Green Belt, 0.2 miles to Margaret Rice Conservation Area. At Point 20, in the Margaret Rice Conservation Area the trail splits and you can go either direction to complete a loop, a sign should be added here with the words Margaret Rice Trail Loop and an arrow pointing both directions. The same sign should be placed at the other end of the loop at Point 26, where the Margaret Rice Loop meets the Great Swamp Trail. At this point a sign should also be placed on the Great Swamp Trail showing the name of the trail and arrows indicating "To Woodsom Farm" and "To Town Forest." Lastly, a sign should be placed at Point 23, indicating to the user the direction of the Town Forest and the distance if desired. A sign could also be placed at point 53,

advising users that they are about to enter private land en-route to Woodsom Farm and to please be courteous.

Step 3 – Improvements and Maintenance

Parking Lot improvements.

Point 1 – The current parking lot could be graded and improved with a gravel surface. This will reduce mud and puddles in the parking lot and provide a better surface for parking. The photo below shows the current surface of the parking area.



The photo below shows the vegetation currently growing between the parking area and the road. We suggest that the small trees and brush be removed from this area. This will serve two purposes, first it will allow people driving by to see that the area is there and available for public use, second, this will improve public safety. With the vegetation removed a police officer driving by on patrol can easily look in on the parking lot and ensure everything is well.



Point 2 – The photo below shows the trail head just north of the parking area. Water is flowing from the parking area down onto the trails. The parking area should be graded so that water is directed away from the trails.



Hazards.

The trails will need regular maintenance to ensure that they are as safe as possible for all users. One example of removing hazards is to remove large dead trees that are hanging over the trail, another is obstacles on the trail surface.

Point 3 – There is a large dead tree trunk hanging over the trail and supported by a tree adjacent to the trail. This dead tree should be removed.



Point 54 – There is a fallen tree that has been bridged by logs with users. This creates a hazard in the trail that may not be navigable by all visitors.



Other locations with standing dead trees or trees that should be cleared are points 6, 29, 32, 34, 35, 40, 41, 42, 47, 48, 49, 51, 52.

Point 4 – Improvised mountain bike jump



Point 50 – Improvised mountain bike jump. While these mountain bike jumps are not a hazard per se, they do present a risk to those who use them and the city should be aware that they are there.



Water Related Issues

There were two different water issues occurring on the current trail network. One is water flowing down the trail surface, causing erosion. The other is wetland crossings or pooling water.

Trail surface erosion from flowing water

Shaping a trails surface to periodically shed water at low points will help in the correction of tread erosion. Water can be controlled by contouring a trail. The edge of the trail can be cut down to allow water to drain off and the trail surface can be contoured to direct water towards the low area on the edge of the trail. These drain areas can then be periodically inspected to clear any debris which get caught in them. This is a low impact and relatively low maintenance way to control water issues on the trails. Trails that funnel water down the center of the trail rather than periodically having points designed to shed water will wash out over time. As an alternative to contouring a trail, water bars could be installed to direct water off the trail surface.

The locations we noted that would benefit from water control on the trail surface are points, 5, 15, 17, 21, 22, 28, 36, 37, 39, and 44. Two of these points are pictured below.

Point 15



Point 17



At the beginning of the Margaret Rice Conservation Area trail there are a series of wooden water bars on a grassy slope section of the trail. As can be seen in the photo below, taken at point 55, water has found a route around the bars, causing some erosion. These water bars should, ideally, extend to the area below the fence, instead of stopping short of it.

Point 55



Pooling Water and Wetland Crossings

The trails on this property cross wetlands in a few different areas and some of these wetland crossings could be improved.

Point 8 – The trail crosses a wet depression with no improvements in place. A bog bridge could be used here to cross over the wet area.



There are different ways to build bog bridging, one example of a bog bridge over a wet depression is shown here. The bridge is built using 6x6 footings on each end with two 4x6 beams providing support and a 4x4 down the center. The decking is built from white oak.



Point 9 – Old pallets and boards are used to cross a wet area. Replacing this with bog bridging would provide a safer and more permanent solution.



Point 19 – A wetland is crossed using a corduroy of available logs and sticks. Replacing this with a bog bridge is a more permanent solution.



Point 30 – There is a bog bridge in this location that is in acceptable condition, but it is next to the remnants of an old bog bridge that should be removed. Additionally, a rock transition could be added to the beginning of this bog bridge to control erosion, as shown in the photo of the example bog bridge.



Point 31 – This section of trail crosses approximately 60 feet of wetland. The wooden planks used to cross this area are beginning to fail and the existing log corduroys could be replaced by more permanent bog bridging.



Point 45 – The existing bridge at point 45 has failed. The wooden debris and protruding nails from the old bridge are blocking the path, causing users to find their own way around the wet area. The debris should be removed and a new bridge constructed.



At point 46 we recommend slightly re-routing the trail upslope to be further away from the adjacent wetland, this will both help to protect the wetland and create a dryer trail.

Points of Interest

There are two points of interest on the trail that could be highlighted on trail maps and provide destinations to trail users. These points of interest could be improved with informational signage giving users more information about the feature. These two points of interest that could be highlighted are shown below.

Point 7 – Smallpox Plot



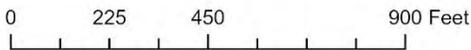
Point 16 – Shrine



Lastly for the Town Forest and the Margaret Rice Conservation Area we would recommend considering installing an access gate at the end of Ashley Drive at point 25. The trail here follows an old road bed towards the Great Swamp and installing an access gate and keeping vegetation clear at the end of Ashley Drive would ensure vehicular access to the area should it ever be needed, such as if an emergency vehicle ever needed to access the area.

Woodsom Farm

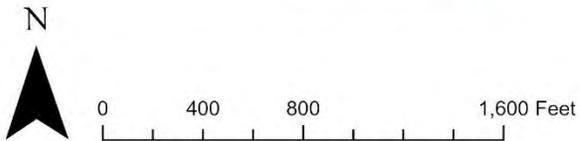
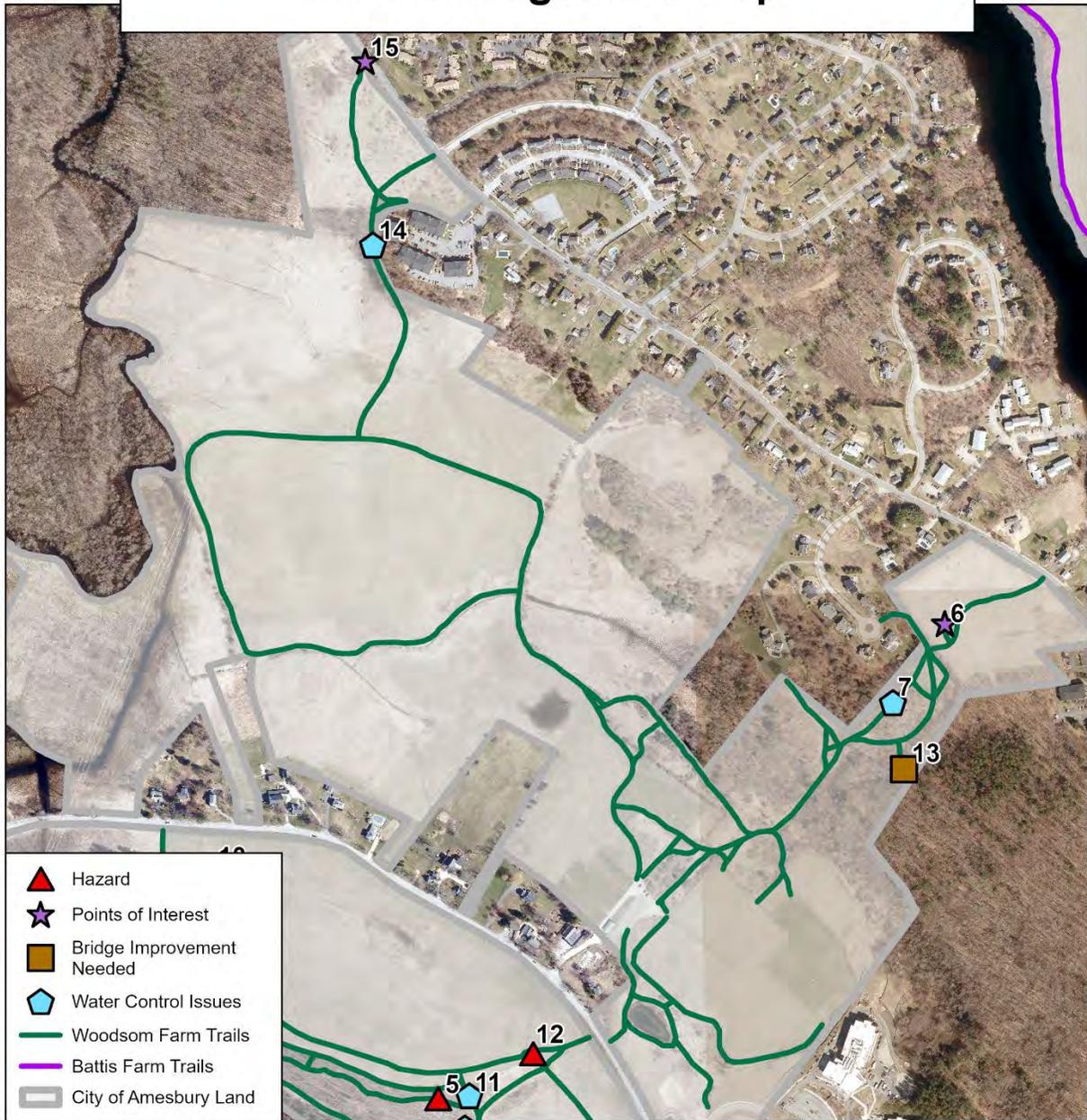
Woodsom Farm South Trail Management Map



City of Amesbury Land created from tax parcel data from Mass GIS. 2023 aerial from Mass GIS. All other data collected in the field 09/2024. Map produced by M. Smith, Woodsman Inc 09/2024. Projection: NAD83 StatePlane Massachusetts, EPSG 26986

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Woodsom Farm North Trail Management Map



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Woodsom Farm

The existing trail network at Woodsom Farm is well laid out and easy to follow. Our recommendations for this area revolve around hazards, maintenance tasks, and possible upgrades.

Hazards

The hazards we observed are located on the south half of Woodsom farm. The first hazard is a downed tree at point 3, which blocks most of the trail. Some users may struggle climbing over or moving around this tree. The second hazard is a dead tree hanging out over the trail at point 5. Hanging dead trees next to the trail should be removed, as eventually they will fall and block the trail, in a worst-case scenario they could fall and injure a trail user. The last hazard is at point 12. There is a drainage associated pit located here, the cover for this pit is simply a piece of metal laid over the top. The metal can be moved, which creates a fall hazard for users, additionally people could enter the pit if they wanted to. The loose piece of metal should be replaced with a top that can lock. These hazards are shown below.

Point 3



Point 5



Point 12



Water Control Issues

There are a handful of locations on the Woodsom Farm property that are suffering from some minor erosion due to water flowing down the trail tread.

At point 4, there is a steep section of uphill trail that is suffering from some significant erosion on the lower side of the trail. There are two different options which would both work in this situation.

The trail is situated, so that if looking downhill at the trail the left side is higher than the right. Vegetation along this high left side could be trimmed back and the surface of the trail moved to the higher left side, with drainage down onto the existing trail tread, which would now serve as a drainage ditch area. Alternatively, the trail could be completely re-routed to go across slope in the area between points 3 and 4, and the existing trail closed. The terrain and vegetation in this area appear well suited to the construction of a new trail here.

Point 4 – Photo 1, existing erosion on the trail and a view of the upslope side of the trail. The trail tread could be moved to the left side of the photo and the existing trail would serve as drainage.



Point 4 – Photo 2, a suitable location to re-route the trail to go across the hill's slope, rather than the currently existing, straight down, trail.



At point 8, there is a steep section of mowed trail. It appears that water flows fairly heavily down this section during rain events. Contouring the trails surface and creating low points for the water to drain off the side would help to solve this and prevent any future erosion trouble.

At point 11 there is a steep section of trail that heads straight down a slope. This path provides water with an easy straight down route with no resistance. Since there are no curves on this path where contouring could be easily accomplished for drainage, the best solution would be to install a couple of water bars to break the flow of water and direct it off the trail.

Point 11 – As can be seen in this photo water is starting to create a channel along the left side of the trail surface. Water bars should be installed to break the flow of water and direct it off trail.



There are two additional areas where water control is needed on the north side of Woodsom Farm. At point 7, there is another section of straight steep trail where a water bar could be installed to direct water off trail. At point 14 the farm road is starting to erode on a steeper slope. Point 14 could be fixed with contouring as it is along a gentle curve in the road. The lip of the road could be lowered and the road contoured to shed water off the side. Photos of these points are shown below.

Point 7



Point 14



Bridge Improvements

We noted 4 areas at Woodsom Farm that can benefit from bridge improvements.

The first is an existing bridge at point 1. This bridge is simply in need of repair as there are some missing boards. In this same location there is a board used to bridge a small wet area just

prior to this bridge, the board is currently nailed into some tree roots. This could be improved by adding some 4x4 footers on top of crushed gravel that the board can be attached to, instead of the tree roots.

Point 1 – The existing bridge in need of repairs.



Point 1 – Board nailed into tree roots



At point 9 there are a few low dips in the trail with some boards noted on the trail side, likely used by trail goers when the low dips are muddy. This area could be improved with either small bog bridges, or by rock armoring the trail. Crushed gravel could be used to fill in these low spots

and larger stone could be set into the crushed gravel as a surface for trail users to walk on. A small bog bridge is likely quicker and easier to construct, but either solution would work.

Point 9 – Low dips in the trail surface



At point 10 the grass trail surface hugs the edge of the adjacent wetland. It appears that this area likely becomes boggy and wet during winter and spring. Since this location is directly next to the roadway it would be an easy spot to bring in lumber to create low bog bridging to bridge any areas that are routinely wet and muddy. The bridge could be simply constructed with 6x6 footings and 4x6 support beams down the sides, a durable wood such as white oak could be used for the tread surface.

At point 13, on the north side of Woodsom Farm, there is a spur trail that heads off the property to the east. Just before the trail leaves town property there is a low point, where it appears a seasonal stream may cross the trail. As can be seen in the photo below, trail users have created a temporary crossing by loosely placing stepping stones along the edge of the trail. A bog bridge could be built to cross this seasonally wet area. Alternatively, the stones that users have already brought in could be used to create a more permanent rock armor solution. Small gravel could be used to build up the trail surface and the stones set firmly into this gravel to create a trail surface, the gravel should allow the water to flow through and the stones should be set high enough that they are out of the water.

Point 13



Points of Interest

Lastly, we had notes on two different points of interest on the property. At point 6 there is a beautiful view looking towards Powow Hill and over Lake Gardner. A bench or a picnic table could be added at this location to give users a spot to relax and enjoy the view.

Point 6



Our last recommendation is for point 15 where the trail meets Whitenall Road under the powerlines. A sign could be added here to let people know that this is land open to the public, as this part of the trail is far from the public access point on Lions Mouth Road. Eventually this would be a good area for parking for a few cars and an informational kiosk.

Point 15 – Good location for signage informing the public that this land is open. A trail map could be added here.



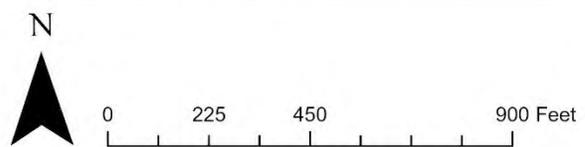
One last piece of advice for Woodsom Farm is to be sure to keep up with vegetation maintenance. Many of the trails are on mowed farm paths that are adjacent to wooded tree-lines. Be sure to trim back branches and new growth occasionally from the edge of the trail. If branches are not trimmed the trail will be pushed further into the field and away from the forest edge over time as the woodland encroaches on the field.

**Powow Hill, Battis Farm,
and Camp Kent**

Powow Hill Trail Management Map



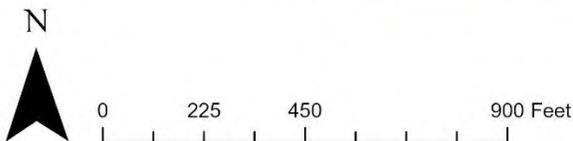
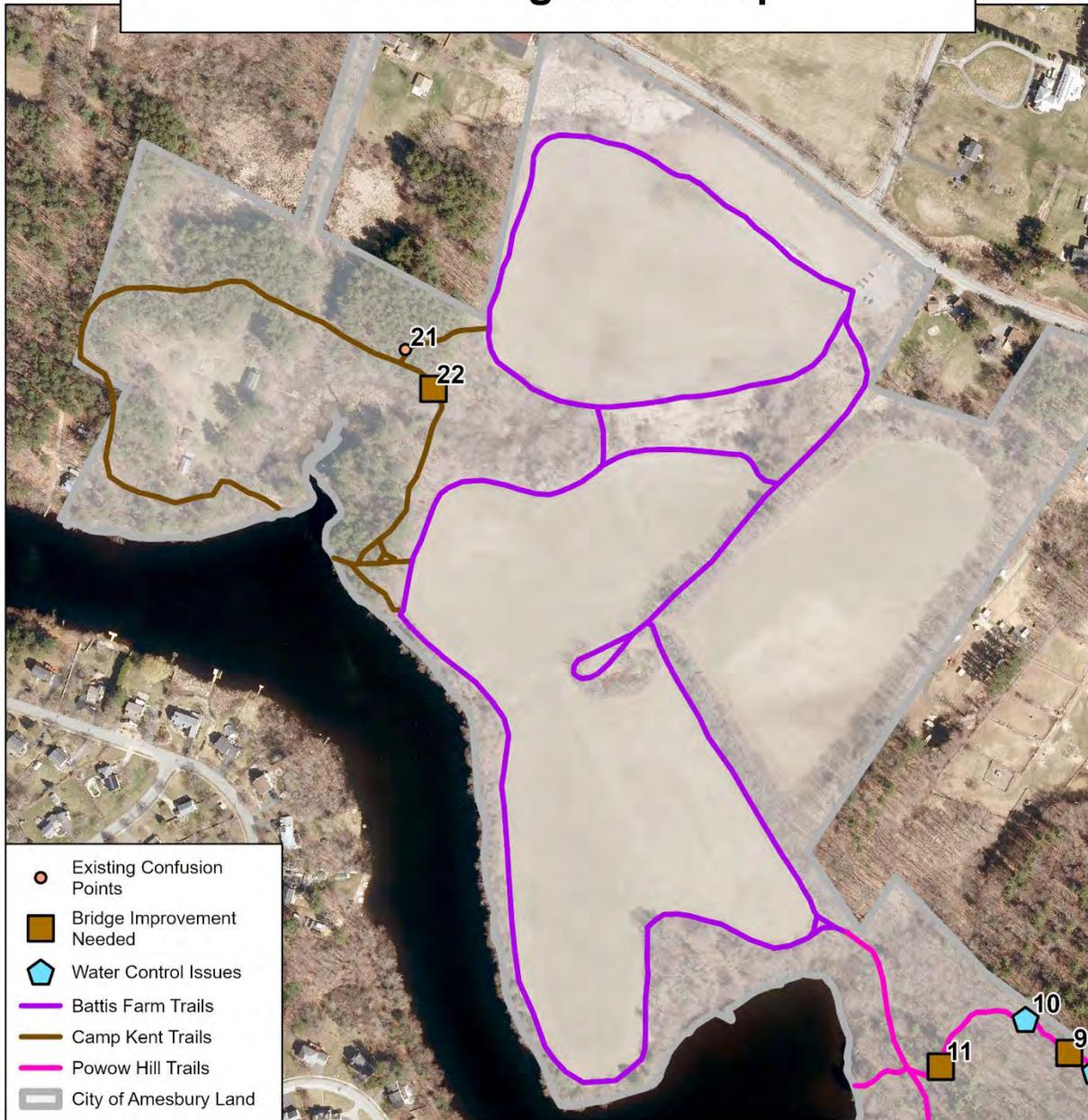
- Existing Confusion Points
- ▲ Hazard
- ★ Points of Interest
- Bridge Improvement Needed
- ⬠ Water Control Issues
- Battis Farm Trails
- Powow Hill Trails
- ▭ City of Amesbury Land



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Battis Farm & Camp Kent Trail Management Map



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Powow Hill, Battis Farm, and Camp Kent

The trail network on Powow Hill, Battis Farm, and Camp Kent is well laid out and easy to follow. During our visit we noted three areas of minor confusion that could be addressed.

Confusion Points

The first is at point 16 where the Batchelder Trail, Stagecoach Trail, and the new trail join together. All the trails here are well marked with signs, with the exception of the newly constructed trail. A sign should be added at the beginning of the newly constructed trail, as are on the other trails, to let the user know what trail it is.

The second confusion point is at point 4 where the new trail crosses the Silvermine Trail. It was reported that this new intersection is confusing users. To help address this a small trail map could be attached to the existing post with a you are here symbol on the map.

The last confusion point is at Camp Kent at point 21. The trail that leads towards the community gardens area of Battis Farm goes through a white pine forest and the trail tread mostly disappears in the layer of pine needles on the ground. A couple of small trail markers or small arrows could be affixed to the trees here to let users know they are on the trail.

Point 18 is also noted as a confusion point, but it is more something to keep in mind. It looks like trail users are creating a new trail along the shore of the lake by continually walking in this area. The trail is fairly well defined up until point 18, where it begins to fade away, before disappearing. If the city does want this trail to officially exist some vegetation management work would be required to either connect it back to the Stagecoach Trail or forward to the next spur trail down to the lake.

Hazards

We noted a handful of hazards within the Powow Hill trail network.

At point 13, on the Batchelder Trail, there are a series of steps installed on the tread that are helping to control erosion and direct water. The soil in front of one of these steps has washed out, creating a larger than normal drop from the top of the step to the bottom. This could be a tripping hazard to users and the bottom of the step should be filled in with soil or gravel to bring the drop back to a normal step level.

Point 13 – Soil washed out at bottom of step



At points 15 and 24 there are large amounts of poison ivy surrounding the trail and some of this poison ivy is beginning to hang over the trail tread. The poison ivy will likely need to be continually controlled to ensure that it does not present a hazard to people on the trail.

Point 15 – Poison Ivy on the trail



Point 24 – Poison Ivy on the trail



While on the property we noted two hazard trees which should be removed. One of these hazard trees is located at point 20, while the other is at point 23.

Point 20 – Dead tree hanging over trail



Point 23 – Snapped off tree suspended in the air above the trail. This tree should be removed to avoid the potential that it could fall on a trail user.

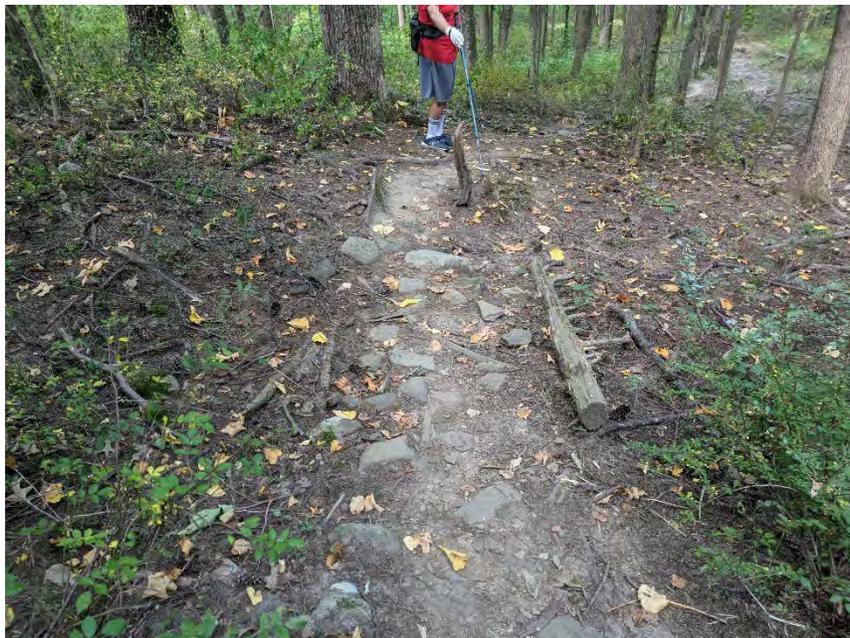


Bridge Improvements

We noted 5 different locations that could benefit from bridge improvements.

The first location is at point 9 on the Powow Trail. There is a low dip in the trail where a seasonal stream crosses over the trail and flows to a low spot on the opposite side. A bog bridge could go across this dip and raise the trail surface above the water.

Point 9 – Bog bridge needed over low area with seasonal stream.



At point 11 a currently existing bog bridge stops just shy of the end of the wet area.

Point 11 – The photo shows an area that becomes seasonally wet at the end of the bog bridge. The trail should be re-routed to the left side of the photo, to avoid the low areas on the right. The bridge could be extended to cross the low area just after the end of the bridge.



Point 12 – A small plank bog bridge is needed to cross a seasonally wet, low depression in the trail.



Point 17 – This point is located on a spur trail that leads off the property towards Orchard Court. There is a low point on the trail with a seasonal stream that could be crossed with a small plank bog bridge.



Point 22 – This area is located on Camp Kent. A wet area is crossed using a log corduroy as well as some old wooden planks. This should be removed and replaced with a more permanent bog bridge.



Water Control

There are a few different areas in the Powow Hill trail network that could benefit from water control measures.

Point 1 – Water is pooling at the end of a bridge. The trail should be contoured to shed water off to the right side of the photo. The left side of the photo could be built up with some rock armoring to provide users with a dry tread to walk on. Some of the soil could be dug out, gravel could be placed down, and some large stones could be set in the gravel to provide a dry trail surface.



Point 2 – Point 2 is a low dip in the trail where water flows across. This could be fixed by a bog bridge, but it could alternatively be fixed with rock armoring. The dip could be filled with small diameter gravel and larger rocks could be set into this gravel as a surface for users to walk on.



Point 3 – This area is located at the bottom of the Silvermine Trail where it connects to the Stagecoach Trail. Flowing water is beginning to wash out the trail tread. A series of water bars/steps could be installed here. This would help to hold in the soil and break the flow of water as well as provide a comfortable series of steps for users to walk down. An alternative solution would be to re-route this section of trail across the slope of the hill to the northwest, to create a more gradually sloping connection to the Stagecoach trail.



Point 19 - The spur trail heading down to the lake, directly across Stagecoach Trail from the Silvermine Trail is also suffering from the same erosion issue. If steps/water bars are added at point 3, they should also be added here.



The remainder of the water issues are on the Powow Trail.

Point 6 – There is a steep section of trail, followed by a bend in the trail. This bend in the trail is a good location to contour the trail and direct water off the trail tread. By cutting down the lip of the trail at the bend and contouring the surface in this area to flow towards the low area in the lip, you can shed some of the water from the trail at this point.



Point 7 – This is a good spot to add a water bar. As can be seen in the photo, water is flowing down a low valley in the center of the trail. By adding a water bar here and directing all this water off the trail you will help to minimize water issues and erosion further down the trail.



Point 8 – At point 8 there is heavy water flow following the trail tread. As can be seen in the photo the water is flowing down the left side of the trail, while the right side of the trail is higher. Users should be directed to the higher right side of the trail and the lower left side of the trail should be dedicated to the flow of the stream. In some areas this may take a bit of work to remove obstacles and high points that are blocking the flow of water to keep water flowing in the low areas and to keep the trail tread on the higher ground.



Point 10 – This is a low point on the trail where water is flowing over it during the wet season. During our visit we noted that there are many large, loose rocks scattered throughout this trail. These rocks can be used for rock armoring to cross wet areas. This section of trail would be a good candidate for rock armoring to bring the trail surface above the wetness.



Point 14 – I wanted to mention point 14, as this is an area where the trail has a good switchback heading up the hill and is effectively shedding water off the low side of the trail. This section of trail is a good area to look at when thinking about how to contour and shape a trail.

Points of Interest

The last thing of note in this area is the view from the top of Powow Hill at Point 5. Unfortunately, some young white pine trees are beginning to get tall enough to obscure these views. We recommend that these white pines be removed while they are still small to prevent the view from being obscured any further. Once the pines are removed the area can be planted with native low-growing wildflowers and shrubs so that the area can remain naturally vegetated and the view can be preserved. It is important that this view be preserved as it is the main attraction of this area. Benches are currently set up for users to be able to sit and enjoy the view and the Silvermine Trail, Batchelder Trail, Powow Trail, and the new trail all lead to this point.

Point 5 – The view from Powow Hill beginning to get obscured by young white pines.

