

McLean Trail Assessment

prepared by the

New England Mountain Bike Association



for the

Town of Belmont Land Management Committee

October 17, 2001

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SUMMARY

This report is an assessment of the trails on the McLean Hospital property in Belmont, Massachusetts. The assessment was conducted by the New England Mountain Bike Association (NEMBA) for the Land Management Committee of the Town of Belmont. The assessment was based on a detailed field review of the trail system, analysis of topographic maps, and input from various trail users and trail design experts. The findings are:

- o Many of the current trails were made by casual trail users, thus creating a trail system that provides convenient access to significant attributes of the property; without concern for good trail design
- o Many of the current trails have sections with significant erosion caused by poor trail layout
- o Based on erosion issues and poor trail layout, significant erosion control and rerouting of some trail sections are needed
- o In order to maintain through access (from Pleasant St. to Mill St.) and to simultaneously prevent usage from converging on just a few trails, most of the trails need to remain open to all users
- o This trail system as a whole gets relatively little use compared to other metropolitan open spaces

The details of the assessment consist of a description of each trail's layout and surface condition, and any changes brought on by the proposed development, followed by recommendations for maintenance and future recreational use.

INTRODUCTION

This trail assessment was conducted by the New England Mountain Bike Association (NEMBA), with input from:

- o Various Belmont residents representing a cross-section of trail users (hikers, bikers, dog-walkers, bird watching enthusiasts, etc.)
- o International Mountain Bike Association's Trail Care Crew (IMBA-TCC)
- o Belmont Town survey (topographic and development maps)

The goals NEMBA hopes to support by this assessment are to

- o Preserve the ecology and biodiversity of the property
- o Promote a self-sustaining trail system for recreational use
- o Encourage shared-use trails that offer users a variety of experiences
- o Eliminate user conflicts
- o Eliminate bottlenecks by offering trail choices to common destinations
- o Maintain the existing integrity of the Belmont-Lexington-Waltham greenway
- o Foster further discussion between all user groups

The majority of the McLean trail system was never properly designed. However, the trails still provide users with plentiful access to the valuable natural assets offered by this and surrounding open spaces (such as Audubon's Habitat, Rock Meadow, and others). At first glance, it might seem that there is nothing wrong with the current trail system. At closer inspection, it becomes obvious that many trail sections are eroded, some to the point where narrow smooth trails have been replaced with wide rocky swaths devoid of topsoil. The fundamental difference between poorly designed and properly designed trails is that poorly designed trails often develop badly eroded sections while trails designed by a practiced trail builder can function for decades. Highly eroded trails are at best an eyesore and at worst both dangerous for users and detrimental for the surrounding ecosystem. This is why trail maintenance is on every park manager's list of highest priorities. Since trail maintenance is very labor-intensive, the incentive is high to "get it right" on the first try by designing the trails to be self-sustaining. Existing trails that were not designed properly can often be changed to become more self-sustaining. These changes range from simple drainage improvements, such as adding rolling grade dips, to complete trail reroutes. Although rerouting a trail may seem like a drastic measure, it is often the best solution to eliminate steep sections where the combined effect of trail usage and water flowing down the fall line will rip through any trail surface (other than asphalt).

For example, in order to climb a 30' hill and maintain a grade below 10%, the trail must be at least 300' long. This assessment identifies a number of trails on the McLean property which contain very steep sections and makes specific recommendations for changing these sections to make the trails more self-sustaining.

Poor trail design can also cause other problems that are specific to user types and can contribute to user conflicts. In particular, steep trails and lack of sight-lines along trails are two of the biggest contributors. The best designed trails have many twists and turns to naturally keep mountain bikers speed in check, while providing hikers with aesthetically pleasing trails. Walking along such trails tends to emphasize the experience of being out in nature, as opposed to being in a man-made environment.

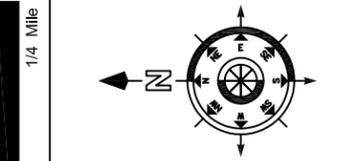
A small trail system, such as the one at McLean, does not have enough trails to offer an exclusive set for each usage type (hiking vs. biking trails). In particular, using the existing trails at McLean (and even with some new trails added) could not enable exclusive through access from Pleasant St. to Mill St. along two separate sets of trails. In addition, most users greatly appreciated the ability to travel in loops along trails, i.e., not having to back-track on the same trails. Providing separate loops for hikers and bikers is infeasible with such a small trail system. The logical alternative is a system of well designed, shared-use trails. By making as many trails as possible shared-use, the traffic is spread out over more trails and chance encounters between user types become more rare. This trail assessment recommends a few exceptions to the shared-use trail designation. These trails are referred to as "solitude trails" in the following pages and the intent is to provide secluded trails that bikers would be discouraged from using.





LEGEND	
	Meadow
	Woods
	Intersection
	Trail Property Line
Contour Interval = 10'	
McLean Trail Assesment	
Overall Plan	
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LEGEND



1/4 Mile
1/8 Mile
1/16 Mile
0

Contour Interval = 10'

-  Meadow
-  Woods
-  Intersection
-  Trail
-  Property Line

McLean Trail Assesment

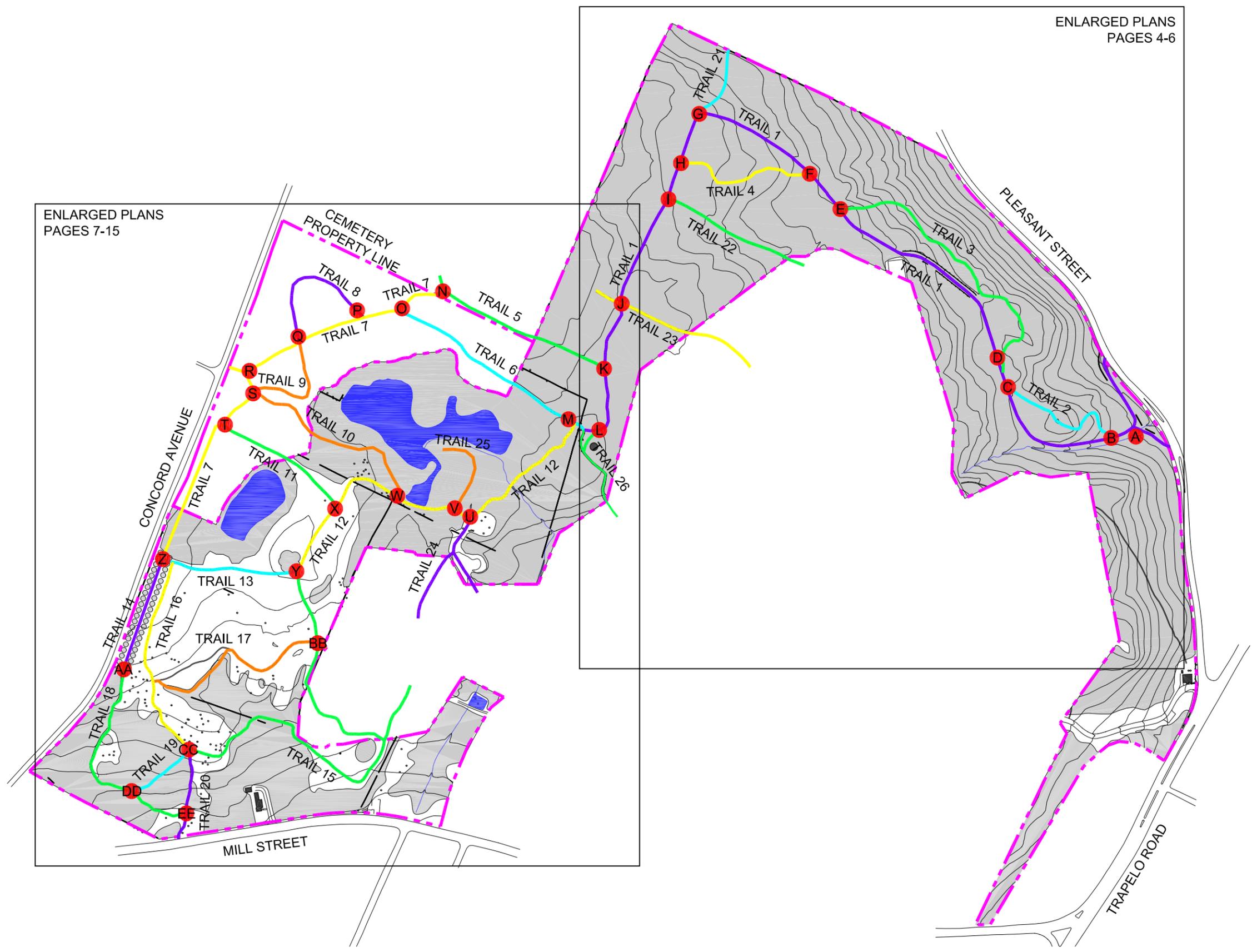
Open Space Plan
Trail Map

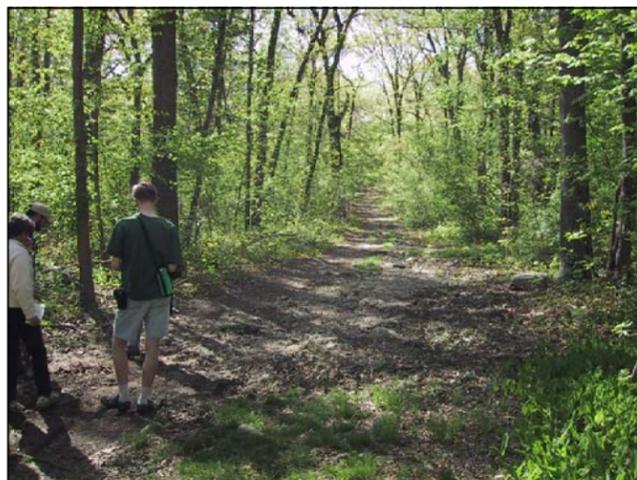
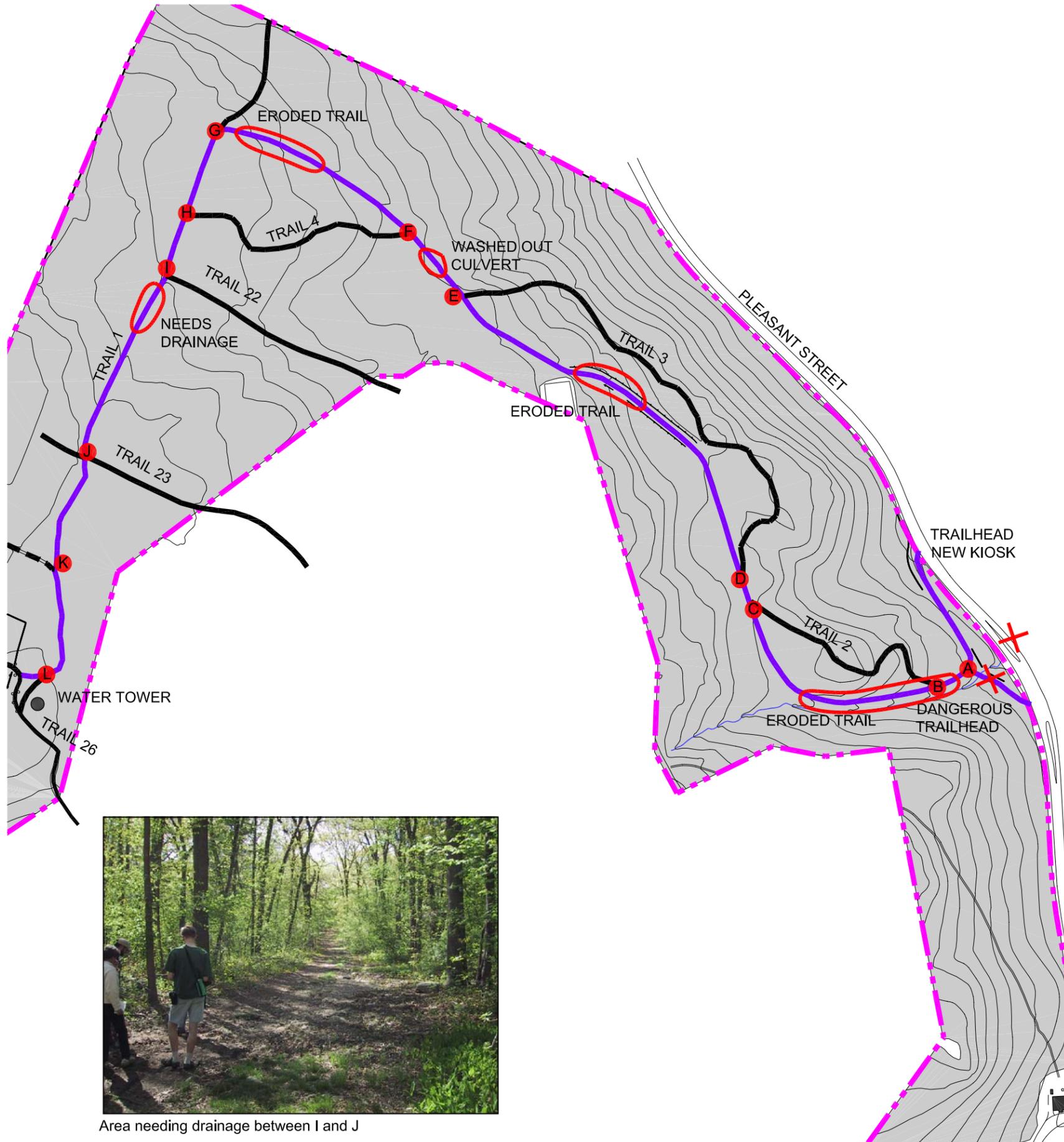


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ENLARGED PLANS
PAGES 4-6

ENLARGED PLANS
PAGES 7-15





Area needing drainage between I and J

TRAIL DESCRIPTION

Known as the Coal Road, this trail is the southeast entrance to the McLean trail system and is arguably the most frequently used entrance to the property. It is currently a vehicle access road and large parts of it coincide with a road dating back to the original McLean road system. This trail has eight connectors to trailheads: two from Pleasant Street to point A, one from Snake Hill Road to point G, one from McLean campus zone 4 to point I, one from McLean campus zone 5 to point J, one from the Belmont Day School soccer field to point J, and two from McLean campus zone 5 to point L. It also provides access to the southeast portion of the property. Generally, the trail runs uphill (some sections are very steeply) from Pleasant St. into the center of the property and runs through mature forest.

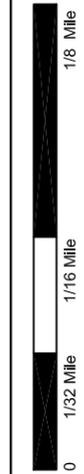
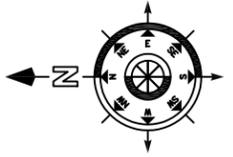
TRAIL CONDITION

The first section of this trail from the entrance of Star Market to intersection A has a varied surface type including old asphalt, rock, crushed stone and dirt. The tread width varies from 3 to 12 ft. Significant attributes include: a dangerous trailhead onto Pleasant Street, a crossing of Junction Brook and old stone walls. A short section of the trail is too steep to maintain proper drainage. In contrast to this, the trailhead off Pleasant Street with a gate has a more consistent surface type of old crushed stone, dirt, and rocks. The tread width is consistent around 6 ft., with a trail width to 20 ft. There is a sustainable grade up from the road to A. Significant attributes include: a trailhead to Pleasant St., steel gate, and stonewalls. The section of the Coal Road between points A and E has a surface type of old crushed stone, dirt, and rocks. The tread width is consistent around 6 ft., with a trail width to 20 ft. There is major erosion in the center of the road between points A and L. Significant attributes include: stone walls, a parallels alignment with Junction Brook for a short distance, some minor erosion occurring close to point G, some larger half exposed rocks, grass and one water collecting (low) spot between G and L.

RECOMMENDATIONS

The trailhead opposite the entrance to Star Market should be closed entirely to all users. The trail enters the road on a bad curve making it dangerous to users and would need significant work to make it safe and drain properly. All users should be directed to the other trailhead opposite Belmont Springs. This should be the primary access point to the property and the Belmont/Waltham Greenway, and will provide a safer way to access Pleasant St. and an excellent site for an entrance kiosk with map and information. The remainder of the trail should be open to all users with some modifications. The section of the road between A and C will require some serious repair. The road is too steep with respect to the overall grade in this section and that makes it susceptible to erosion. Since this trail is a crucial fire road it cannot be closed and it would not be feasible to re-route. Since the road consists of a hardened surface it should be able to resist some erosion if properly graded to prevent water from running down its length. This may require heavy equipment. Other sections would require some simple erosion protection features that would be compatible with vehicle use. There is a culvert between points D and E that has been washed out. The diameter of the culvert should be enlarged and covered. The low section between I and J should be filled in with gravel and runoff should be directed around this area.

LEGEND



-  Meadow
-  Woods
-  Intersection
-  Trail

Contour Interval = 10'

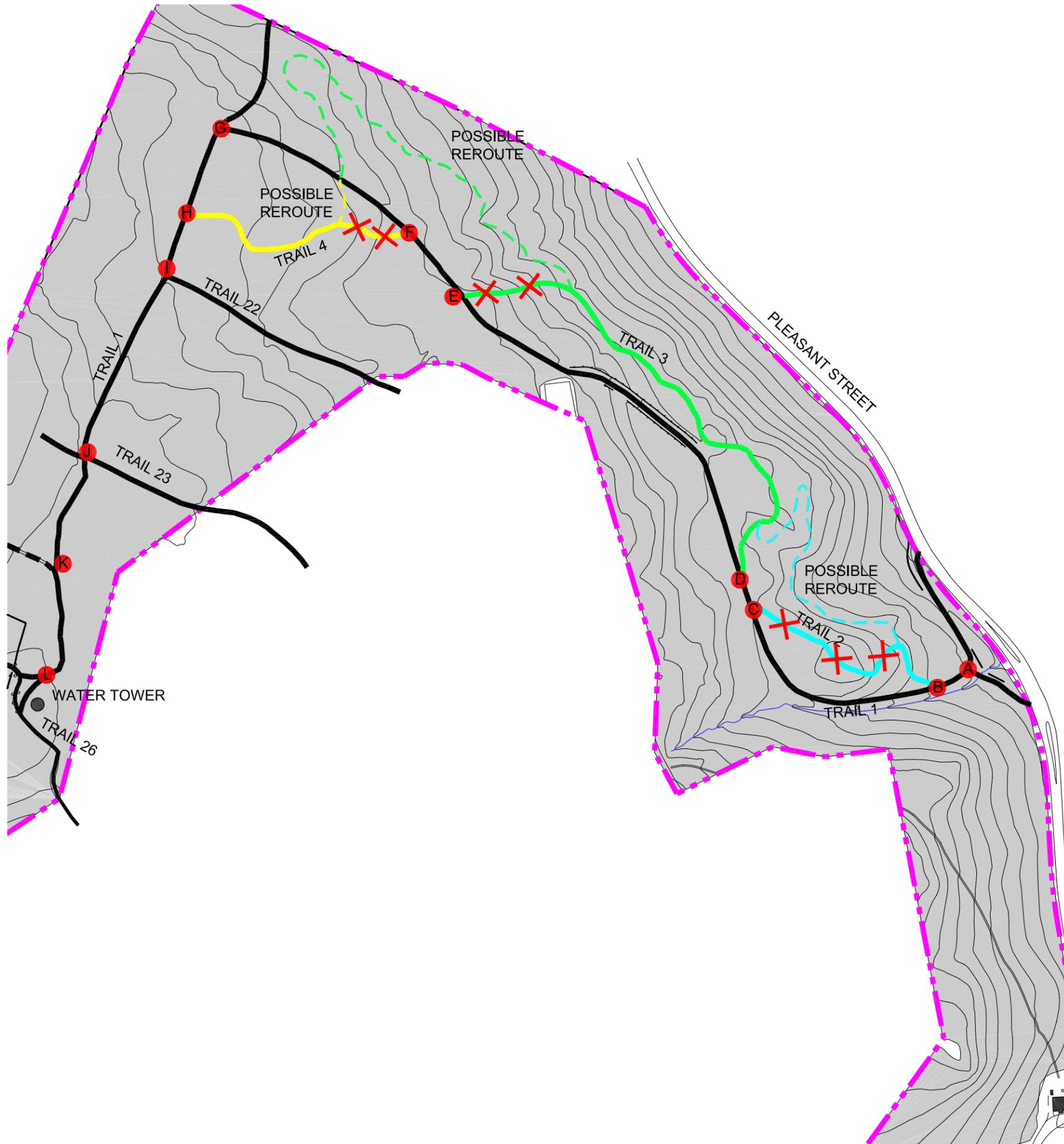
McLean Trail Assessment

TRAIL 1
SHARED USE TRAIL



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TRAIL DESCRIPTION

These trails are characterized as singletrack and in sections run steeply up the fall line, through mature forest and over some ledges along the Coal Rd. from points B and H. They provide an alternative to the Coal Rd. and access to the southeast area of the property. These trails were created within the last 3-5 years.

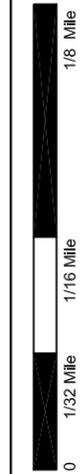
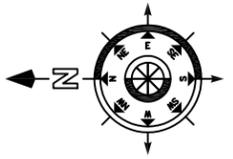
TRAIL CONDITION

The tread width varies from 1-3 ft. and the surfaces are generally bare earth. Some roots and rock ledges are exposed. Sections of these trails follow the fall line and in some spots are very steep. Many of these steep sections have become eroded but the sections that follow the natural contours are proving to be sustainable. The forest floor in this area has numerous patches of poison ivy.

RECOMMENDATIONS

Explore opportunities to reroute sections of these trails away the fall line and maintain as a more remote singletrack and an alternative to the Coal Rd. The goal for this trail would be to diversify usage by providing an alternative to the Coal Road. The trail should be rerouted around areas that are becoming eroded. The rerouted sections should be less steep but still maintain rolling grade changes and frequent turns while maintaining good sight lines around those turns. This will effectively result in a much slower traffic and a different trail experience from the Coal Road.

LEGEND



- Meadow
- Woods
- Intersection
- Trail

Contour Interval = 10'

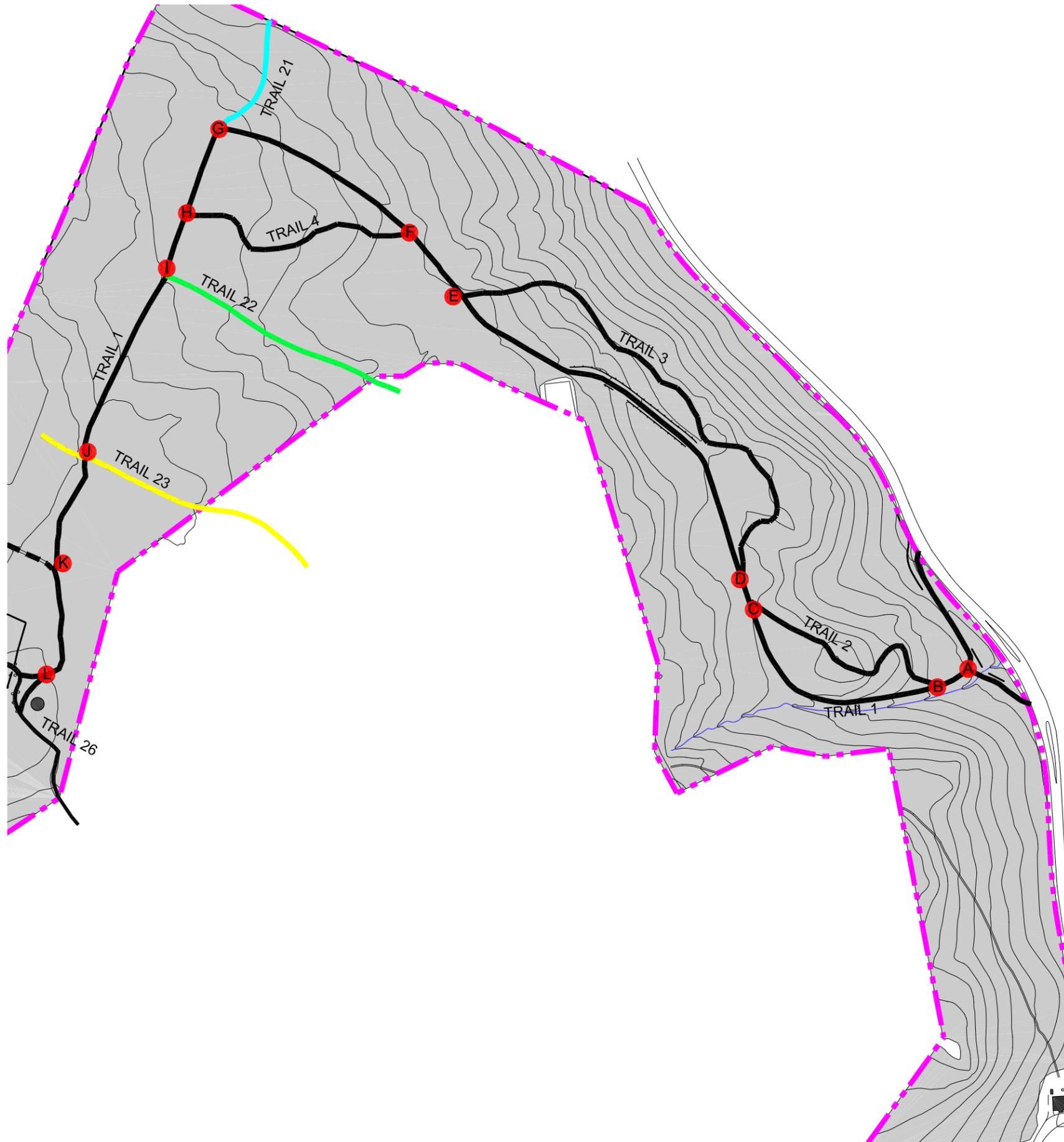
McLean Trail Assesment

TRAILS 2, 3 & 4
SHARED USE TRAILS



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TRAIL DESCRIPTION

These trails would be characterized as vehicle access type and gradually run downhill from the Coal Rd. to the McLean campus through mature forest. The exception to this is trail 21 that runs from point G on the Coal Rd. downhill to Snake Hill Rd. Significant attributes include: access to McLean campus and Snake Hill Rd.

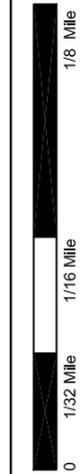
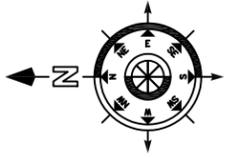
TRAIL CONDITION

The tread widths are 2-6 ft. with overall trail widths of 20+ ft. The surfaces are a mix of grass, rock and dirt. Some small areas of erosion are evident. Trail 21 takes exception to this; its tread width is 3-5 ft., the surface is compacted earth with rocks and there is significant erosion in some areas due to the trail running directly down the fall line.

RECOMMENDATIONS

Open to all users. These have no significant recreational value in their current form, though they may be useful to create other solitude trails in the future. They also may provide some value as vehicle access trails, with the exception of trail 21. Regarding trail 21, it should be left open, but not "advertised" as an official trail. This trail offers minimal destination options and correspondingly sees little use. It would take a significant reroute to make this trail sustainable and based on its minimal use should be left as is.

LEGEND



-  Meadow
-  Woods
-  Intersection
-  Trail

Contour Interval = 10'

McLean Trail Assessment

TRAIL 21, 22 & 23
RESIDENTIAL CONNECTOR



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TRAIL DESCRIPTION

This trail runs NE from the Coal Rd. enters the Belmont Day School property. For half its length, the trail abuts the cemetery zone. There is a connector trail from point N to a trailhead at the Belmont Day School parking lot. Significant attributes include: connection to the Belmont Day School, a stone maze, and an alternative to trail 6.

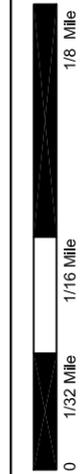
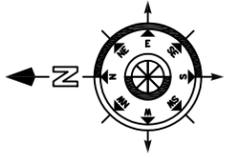
TRAIL CONDITION

The tread width is 3-5 ft. with overall trail widths of 8-12 ft. The surfaces are a mix of grass, rock and dirt. The general grade is flat with one short incline. Some erosion is evident on the incline. The trail runs through open forest.

RECOMMENDATIONS

The trail should remain open to all users. Belmont Day School has expressed an interest in maintaining access to the open space via this trail. The stone maze should be recognized as an attraction (historical, educational and/or spiritual) and access should be maintained. There is also a possibility that the cemetery design will interfere with this trail.

LEGEND



- Meadow
- Woods
- Intersection
- Trail

Contour Interval = 10'

McLean Trail Assesment

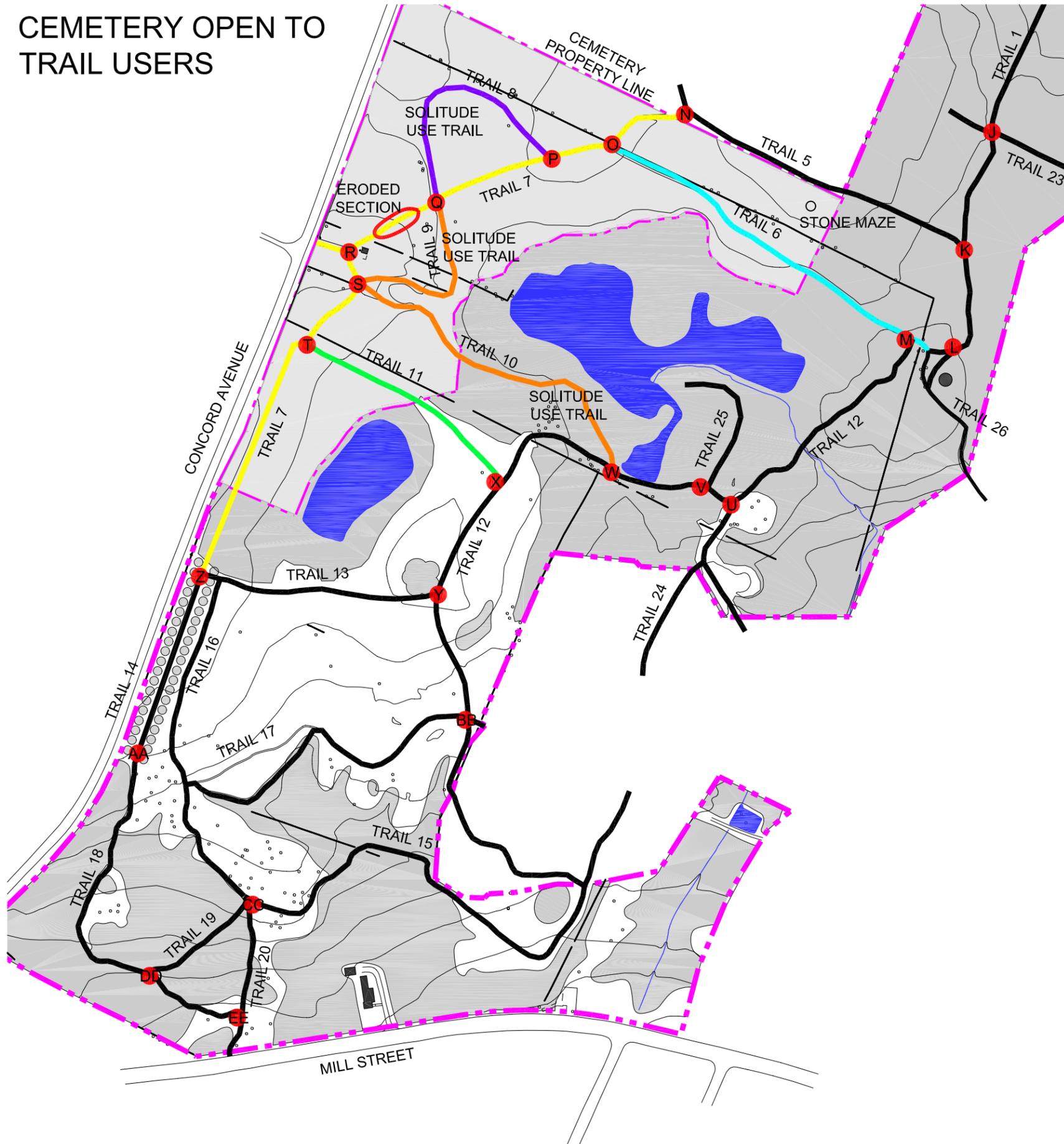
Trail 5
Shared Use Connector



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CEMETERY OPEN TO TRAIL USERS



Trails 6 - 11 all intersect the proposed Town Cemetery area. Since cemetery usage differs significantly from the usage of a nature reservation, it is to be expected that special requirements for trails and paved paths will exist for this area. Our recommendations for these trails will presumably be overruled by the cemetery usage guidelines, when they become available. However, the fact remains that the ultimate status of these trails will affect usage patterns on many trails outside the cemetery area. Rather than trying to guess how cemetery guidelines will affect each trail individually, we present our recommendations for two scenarios: one which assumes that all trails intersecting the cemetery will be closed (or made unattractive to most trail users by being paved over), and another which assumes that all intersecting trails will remain open.

TRAIL DESCRIPTION

Trail 6 runs parallel to Trail 5 through the same section of forest. It gets much recreational use by all user types; some treating it as an alternative to Trail 5, while others use it to form a loop with trail 5 and the connecting section of Trail 1. Trail 6 provides vehicle access continuing via Trail 7 to Concord Avenue, thereby providing vehicle access for the north side of the McLean campus (development zone 5) both to Pleasant Street (via the Coal Road) and to Concord Avenue. The northern half of this trail is inside the proposed cemetery area. Trail 7 starts at the eastern boundary of the cemetery, connecting to Trail 5 at point N (where there is a trailhead to Belmont Day School property). At point O it connects with Trail 6, continuing the vehicle access out to a trailhead on Concord Avenue (at point R) and onwards to Trail 11, which also supports vehicles. This trail continues from point T in narrower form to point Z along the Pine Allee, named after the straight rows of tall trees that border the trail on both sides. There is another trailhead to Concord Avenue at point Z. The trail is mostly contained inside the town cemetery zone. Trail 8 provides a short side-loop to a section of Trail 7. It is fully contained inside the town cemetery zone. It is a narrow trail that gets much less use than Trail 7. Trail 9 used to be a continuation of Trail 8, but it has been impassable for years due to over-growth. It passes by the ruins of the old Highland Stock farm. It is mostly contained inside the town cemetery zone. Trail 10 used to provide an alternative to Trail 11, but it has been impassable for years due to over-growth. The north half of it is inside the cemetery zone. Trail 11 connects Trail 7 to Trail 12, providing vehicle access from Concord Avenue to Lone Tree Hill. It gets less recreational use than Trail 13, which also provides access from Concord Avenue (via Pine Allee) to Lone Tree Hill. The north half of it is inside the cemetery zone.

LEGEND	
	<ul style="list-style-type: none"> Meadow Woods Intersection Trail
Contour Interval = 10'	
McLean Trail Assessment	
Trails 6-11 Cemetery Open Scenario	
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TRAIL CONDITION

Trail 6 is in very good condition. It is wide enough to support vehicle access, but it has the appearance of a smooth, partly grassy trail. Trail 7 is mostly in good condition. It has only recently been widened for vehicle access, and hence the actual tread is narrow and well defined running down the middle of the much wider trail. The section from point O to point Q crosses an open field. Near point Q, there is a short steep section that is eroded from water running down the fall line. The section from point Q to point T is level and winds between tall bushes. The Pine Allee section between points T and Z is rougher due to exposed roots. Trail 8 gets very overgrown from the bushes and trees on both sides. About half of trail 9 is fully overgrown by thick bushes; only the section nearest point Q is still passable. The southern section of trail 10 is still passable, but the northern section (mostly inside the cemetery region) is fully overgrown by thick bushes. Trail 11 has only recently been widened to become a fire-road. It is in good condition, mostly grass covered.

RECOMMENDATIONS

Given trail 6's extensive recreational use, ideally it should remain open to all user types. No specific maintenance is called for. It is highly desirable to keep Trail 7 open for all users. With three trailheads, it is the primary entry and exit point for many users to this trail system. It also contains half of the Pine Allee, which due to its unique landscaping is an appealing destination for many users. The surface of the one short eroded section near point Q needs to be rebuilt, and possibly a switch-back installed. The surface of the Pine Allee section between points T and Z needs to be raised slightly to cover most exposed roots (for example with wood chips). Trail 8's main value is as a "solitude" trail and therefore it is recommended that it be closed to bikers. Some cutting back of bushes on both sides is recommended to prevent the trail from gradually becoming impassable. Trail 9 should be reopened as a "solitude" trail. In connection with Trail 8, it would provide a very pleasant secluded path through the forest of the cemetery region. Obviously, significant cutting back of bushes would be required. Trail 10 should be reopened as a "solitude" trail. It would provide a very pleasant secluded path as an alternative to Trail 11. Significant cutting back of bushes would be required on the northern section. Trail 11 should remain open as an alternative path from Concord Avenue to Lone Tree Hill. No specific maintenance is called for.



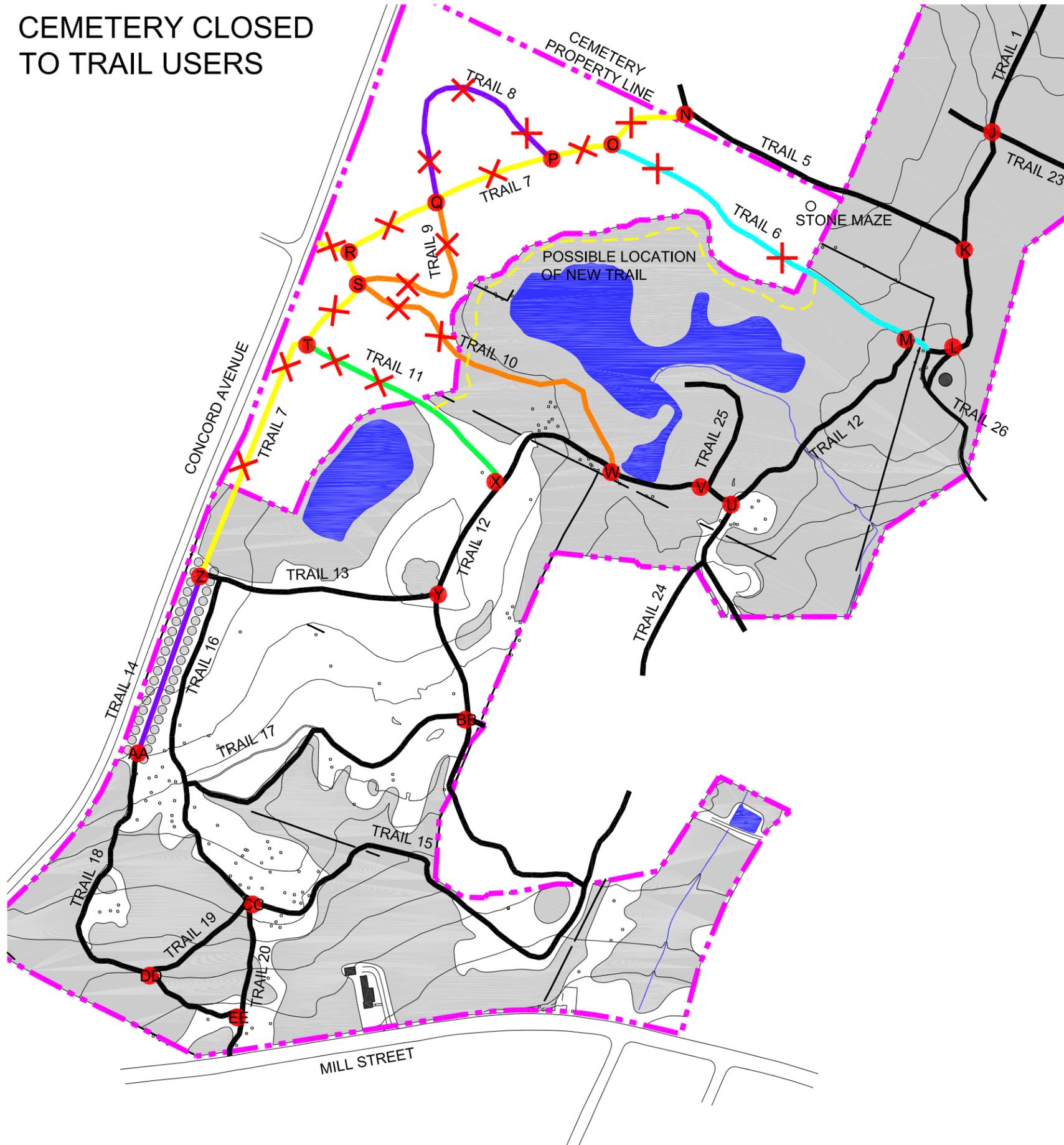
Entrance to Trail 8



IMBA Trail Care Crew inspecting the Pine Allee

LEGEND	
	<ul style="list-style-type: none"> Meadow Woods Intersection Trail
Contour Interval = 10'	
McLean Trail Assessment	
Trails 6-11 Cemetery Closed Scenario	
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CEMETERY CLOSED TO TRAIL USERS



RECOMMENDATIONS

In the scenario where all trails will be closed (for some or all user types) at the point where they intersect the cemetery, only the south halves of Trails 6, 10, and 11, and the west end of Trail 7 will remain open. In this scenario, all traffic will be funneled to Trail 12, stressing that trail unduly and increasing the number of chance meetings between different types of users. For this scenario, it is therefore recommended that a new trail be laid from the closing point on Trail 6, along the cemetery boundary, to the closing point on Trail 11. Alternatively, if the region between Trails 10 and 11 proves too difficult to traverse due to density of forest, then this new trail could end at the closing point on Trail 10 and the southern half of Trail 10 be reopened for access to Trail 12 (which only involves relatively minor cutting back of bushes along the overgrown trail). Likewise, a trailhead to Concord Ave should be added on Trail 7 by the closing point, to provide some opportunity for through access on the remaining section of the Pine Allee on Trail 7.

LEGEND	
<p>1/8 Mile 1/16 Mile 1/32 Mile 0</p>	<p>Meadow Woods Intersection Trail</p>
Contour Interval = 10'	
McLean Trail Assesment	
Trails 6-11 Cemetery Closed Scenario	
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TRAIL DESCRIPTION

Due to its central location and connectivity to other popular trails and destinations, this trail provides the backbone to the whole McLean trail system. In particular, it provides access from the Coal Road to Lone Tree Hill. It also connects via Trails 24 and 26 to three trailheads on the McLean campus and it provides access to a vernal pool via Trail 25. Most of this trail winds through forest, only the western most section from Lone Tree Hill (point Y) to point X runs through an open meadow. Trail 24 connects Trail 12 to two trailheads on the McLean campus, one in zone 5 and the other in zone 1A. Trail 25 is a nearly over-grown trail and provides access from Trail 12 to a secluded vernal pool. Trail 26 is a fire-road connecting Trail 1 to a trailhead on McLean development zone 5.

TRAIL CONDITION

With a couple of exceptions, this trail is in good condition. A short section just south of the stream-crossing (midway between points M and U) is widened and eroded to the point that silt flows directly into the stream in heavy rains. The current bridge, however, is recent and in good condition. A very short section (less than 10') between points V and W runs through wetland. There are signs of a culvert having been installed there in the past, but it is no longer functional. Consequently, this section gets rapidly muddy in wet conditions, but recovers in dry conditions. Finally, the step-up into the meadow midway between X and W is eroded.

RECOMMENDATIONS

This trail should remain open to all users. In particular, if Trails 5 and 6 become restricted in some way due to their course through the cemetery zone, then this trail is the only remaining access from the Coal Road to Lone Tree Hill and Pine Allee, two of the most popular destinations on the McLean trails. The eroded section south of the stream is best dealt with by a minor reroute (a switchback). The short section crossing wetland needs to be re-turpiked (raised and drainage provided). This, and the step-up into the meadow, would probably best be taken care of in the upcoming water-main construction project, slated to run under this trail. Another issue related to the water-main project: it would be highly desirable to reconstruct the trail as close as possible in its present winding and fairly narrow form. Almost all trail users covet the aesthetic appearance of a narrow winding trails, and this is one of few popular trails in the McLean trail system that fits that description.

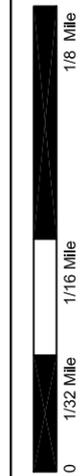
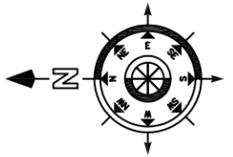


Eroded section at bridge



Trail above bridge

LEGEND



- Meadow
- Woods
- Intersection
- Trail

Contour Interval = 10'

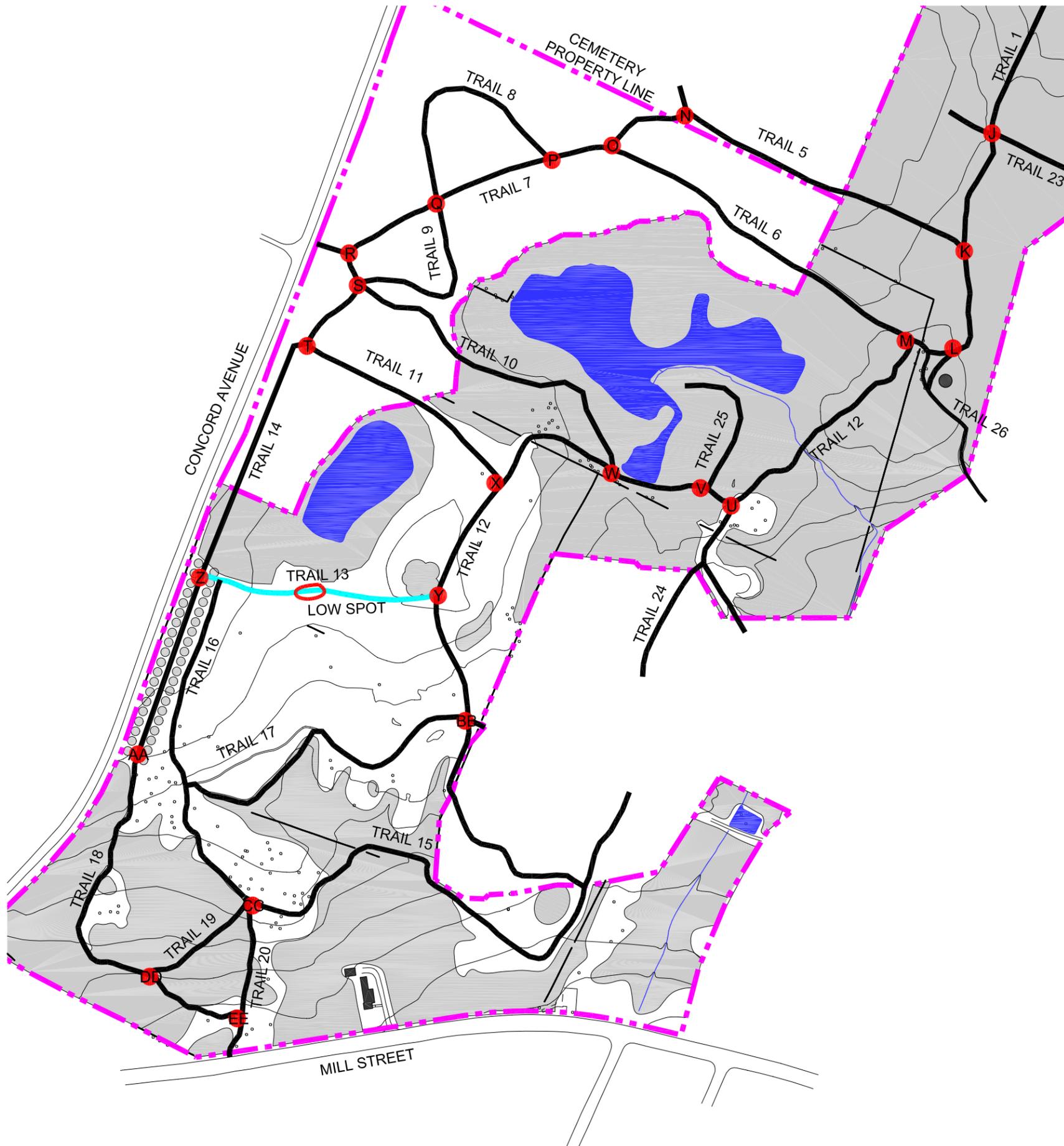
McLean Trail Assessment

TRAIL 12 & 24 - 26
SHARED USE TRAIL



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TRAIL DESCRIPTION

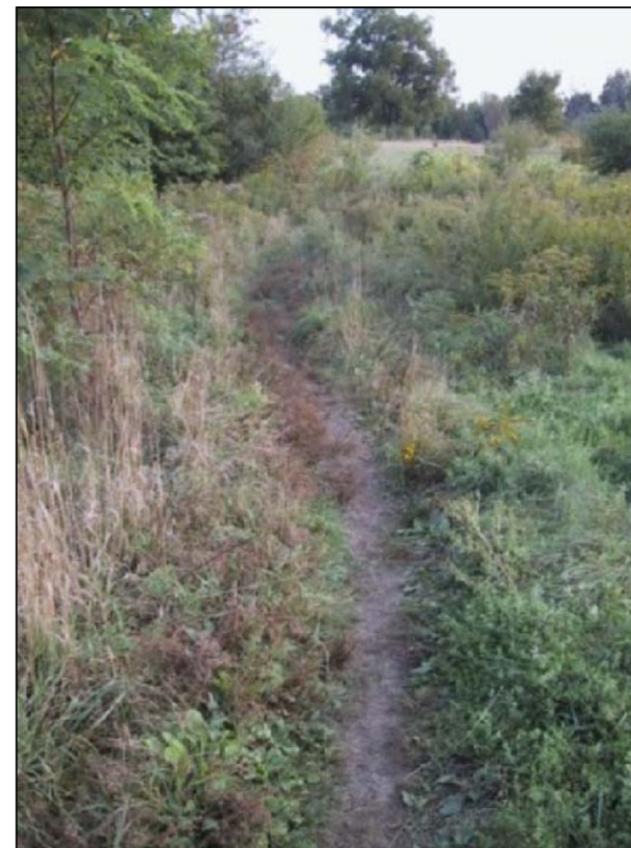
This very popular trail connects Lone Tree Hill and Pine Allee. It offers views over an open meadow to the west, and possibly the most spectacular sunset viewing site in Belmont.

TRAIL CONDITION

This trail is in excellent condition, narrow and smooth, everywhere apart from one short section (about 20') near the middle which dips down into a wetland. Consequently, that low spot gets muddy in prolonged wet conditions and recovers in dry conditions. This problem is most noticeable in the early spring, when this section gets braided and widened as users try to avoid the muddiest parts. However, due to the lush vegetation on both sides, it recovers fully every spring and returns to the form of a narrow smooth trail with no sign of past widening.

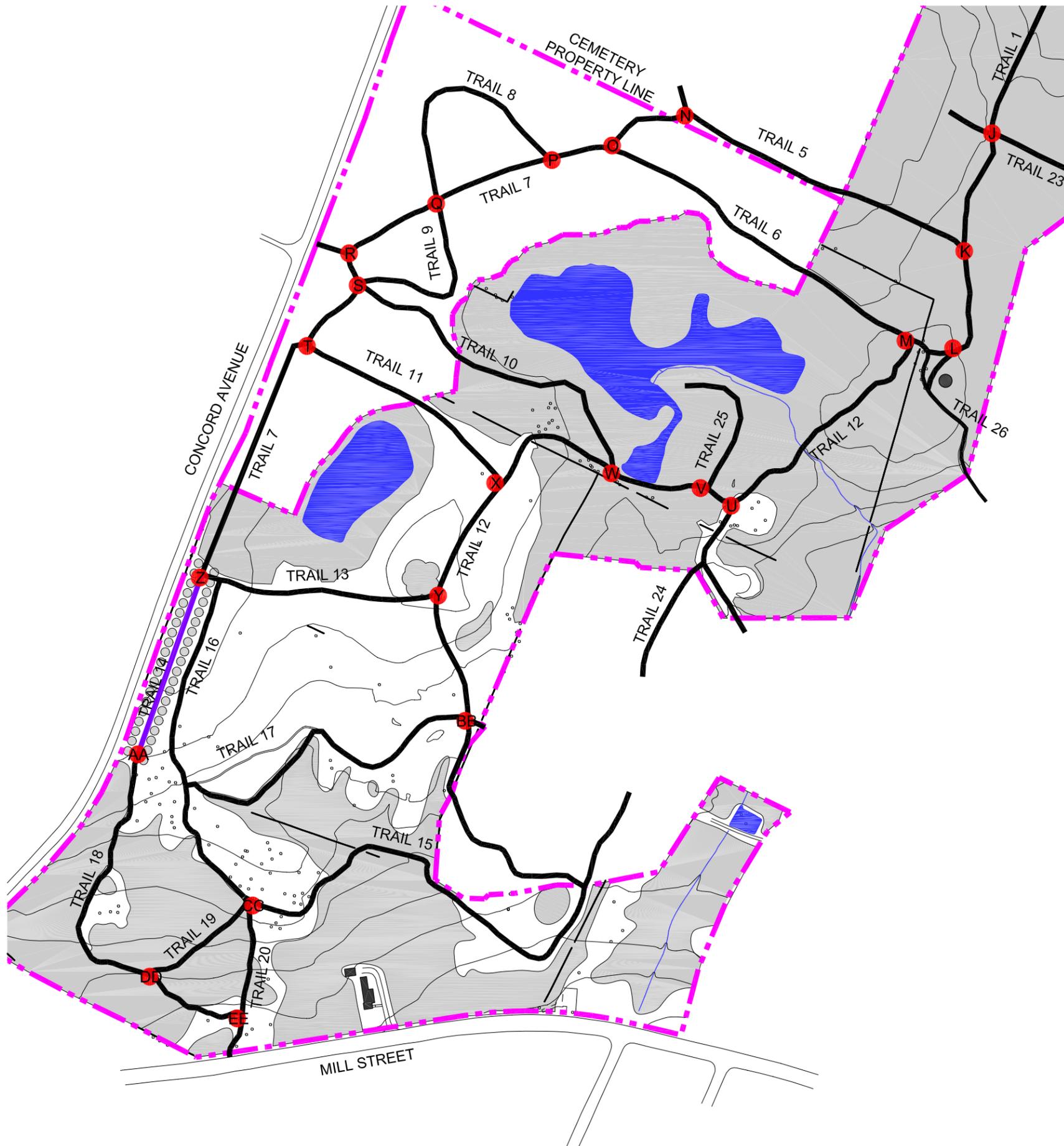
RECOMMENDATIONS

This trail is so well-liked by all users that closing it to any one user type would prove very unpopular and difficult. Once the seasonal wetness issue has been dealt with via turnpiking the low spot, it will easily sustain heavy usage. Thus, this trail should remain a shared use trail.



Low spot on trail 13

LEGEND	
	<ul style="list-style-type: none"> Meadow Woods Intersection Trail
Contour Interval = 10'	
McLean Trail Assesment	
TRAIL 13 SHARED USE TRAIL	
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TRAIL DESCRIPTION

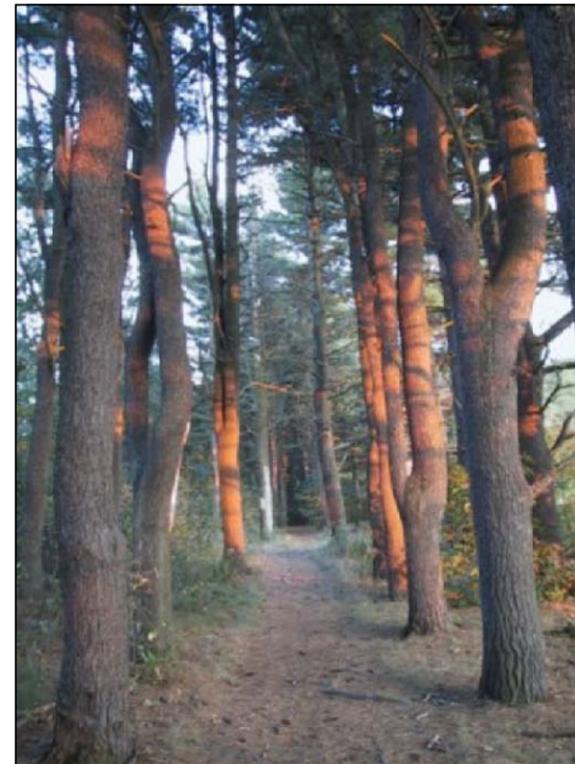
Trail 14 contains the western section of the Pine Allee, the section that will not be affected by the cemetery. The trail runs next to Concord Avenue, with a trailhead at point Z. These characteristics, a unique landscaped appearance and easy access to Concord Avenue, make it a very popular trail with all users.

TRAIL CONDITION

The trail is fairly wide without a clear tread and little erosion, but some sections are rough due to exposed roots. Many of the trees on both sides are also showing their age, and some are dead.

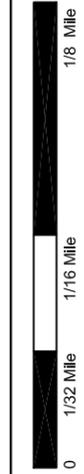
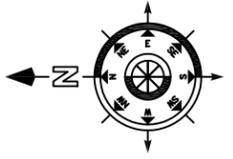
RECOMMENDATIONS

The unique nature of this trail makes it equally attractive to all user types, and the trail is clearly capable of sustaining significant traffic. Thus, this trail should remain a shared use trail. The surface needs to be raised slightly to cover most exposed roots (for example with wood chips). Some thought should also be given to whether dead trees should be replaced with new planted trees.



View down pine allee

LEGEND



-  Meadow
-  Woods
-  Intersection
-  Trail

Contour Interval = 10'

McLean Trail Assesment

TRAIL 14
SHARED USE TRAIL



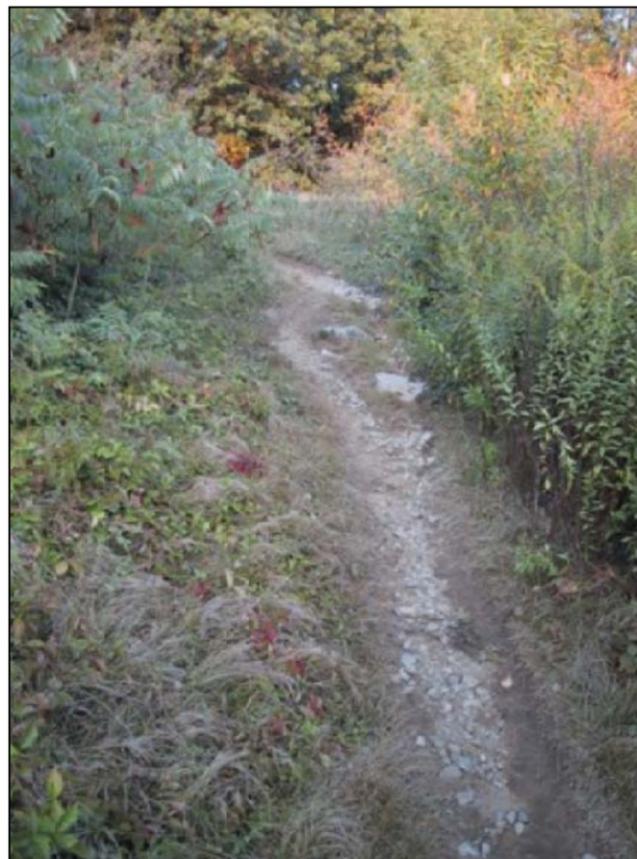
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TRAIL DESCRIPTION

Trail 15 currently one of the longest contiguous trails on the property, but a section of it intersects development zone 1A and will have to be closed. The two remaining sections are from Lone Tree Hill to point BB where there currently is a trailhead and fire-road access to McLean zone 1A, and from point CC towards the south where it gets cut off halfway around a large loop that currently continues to point BB. Trail 16 runs parallel to the Pine Allee and continues down the hill to point CC where it meets with trails 15, 19, and 20. Where it runs along Pine Allee, it offers spectacular views to the south, towards Lone Tree Hill. Since it runs right next to Pine Allee, it connects with it in many places. Trail 17, nearly abandoned, runs across the field west of Lone Tree Hill and in between thick bushes near trail 16. Trail 18 is the continuation of Pine Allee, connecting it to Trail 20 and hence providing access to Mill Street. It is a long trail that passes through mostly sparse forest with some steep sections and a thickly forested section closer to point DD. Coming down from Lone Tree Hill, trail 19 provides an alternative to trail 20 for continuing down the hill to Mill Street. Starting at point CC, it provides a narrower and more heavily forested alternative to trail 20. It is a less direct way to Mill Street, since it curves north to point DD where it meets with trail 18. Trail 20 leads to a trailhead on Mill Street, which is directly across from the main entrance and parking lot for the Rock Meadow trail system. The trail winds through a sparse forest, straight down a steep grade. For McLean trail users arriving from Mill St., this trail provides the most obvious and direct approach to Lone Tree Hill.

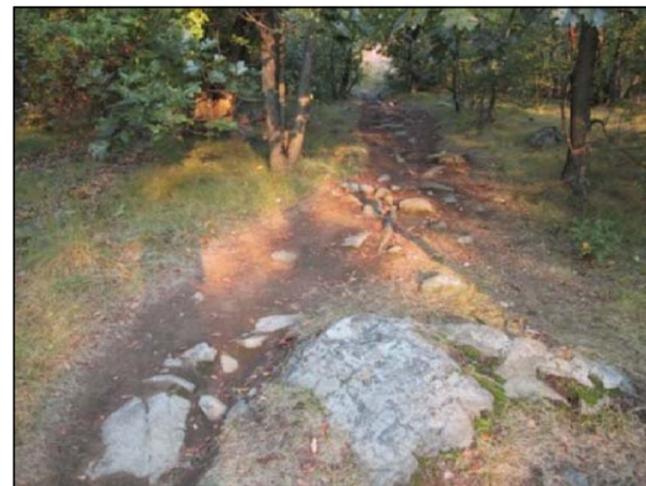


Trail 16 West of location AA

LEGEND	
Contour Interval = 10'	
McLean Trail Assesment	
TRAILS 15 - 20 SHARED USE TRAILS	
	PAGE 14
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TRAIL CONDITION

The section of trail 15 from Lone Tree Hill down to point BB is steep and follows the fall-line, but it is also a very firm trail (vehicle access capable) and hence it has not been adversely eroded by water flow. One part of the other remaining section (approx. 200' to 500' south of point CC) runs through a wet area with very dense vegetation. The section of trail 16 paralleling Pine Allee is in good condition. The section from point AA to point CC has one section (near AA) that follows the fall-line and has become quite deep from water erosion and somewhat rocky, as the photo below shows further down the hill, closer to point CC, the trail makes an S-turn through some bushes that tend to grow over the trail each year. Sections of trail 17 are completely overgrown with poison ivy. Consequently the trail is only used in winter, and even then only seldom. The connection with trail 16 (approx. 100' below point AA) is not obvious, just a break in the bushes on the south side of trail 16. Closer to point BB, this trail runs through a dump. Some sections of trail 18 from AA to DD are heavily eroded from free-flowing water. The photo shows one section, west of point AA (looking east, towards Pine Allee). The worst erosion is on a steep section north of point DD, shown in the photo below on the right (looking north). The DD to EE section is less steep and not as eroded. Other than a number of exposed roots, trail 19 is not eroded. This is probably due to low traffic volume, since most users follow trail 20 to Mill Street. The intersection with trail 18 at point DD is not a T-junction, but rather a Y-junction where both trails 18 and 19 basically point north. The photo below is taken up the trail, from point DD. It shows how the trail bifurcates, with a steep shortcut going down to the right in the photo, towards the south. The section of trail 20 from CC to EE is a steep fall-line trail, heavily eroded by water and usage. As the figure below shows, braids have formed where users have abandoned the most eroded routes and started adjacent ones. The section from point EE to the trailhead is level and generally dry, but somewhat eroded from the high usage volume (being currently the only trailhead to Mill St).



Trail 20 East of location EE

RECOMMENDATIONS

The two remaining sections of trail 15 should be reconnected, allowing the trail to continue providing an alternative route from Lone Tree Hill to Mill Street for all users. This reconnecting will involve scouting out a new route west from point BB to connect with the other remaining section somewhere south of point CC. Given the varying density of the forest in that area, this may become a rather serpentine path. In fact, this should be a deliberate goal, since twisting singletrack trails are in short supply on this property. After this reconnection, there will be a section remaining south of the reconnect point, which will not be part of any loop. That section could be used as a trailhead to the new housing in development zone 1A, and/or it could be extended slightly to provide a new trailhead onto Mill Street. The latter option would reduce the traffic on the currently overused trail 20, but the safety of pedestrians and bikers entering traffic from that trailhead should also be considered. The most likely new trailhead location is either opposite Stanley Road, or opposite the access road to the Kendall Farmhouse (midway between the existing trailhead and Stanley Rd.). Trail 16 is an important access route for all users and should remain a shared-use trail. The steep section near point AA should be rerouted by looping north over to the top of Trail 18, which is already connected to this trail a little further up. The S-turn section could benefit from a little cutting back the bushes on both sides of the trail. Trail 17 should be reopened and designated a "solitude trail", as a secluded alternative to trail 15, assuming that trail 15 gets reconnected and remains shared-use. Reopening this trail involves removing significant amounts of poison ivy. Cleaning up the dump (requiring removal of some large concrete blocks) and moving the intersection to trail 16 (because of the recommended reroute of that section of Trail 16) is also recommended. The two badly eroded sections of trail 18 must be rerouted such that they do not follow the fall line of the hill. Unfortunately, it seems there may not be space for such a reroute anywhere near the upper half of this trail. Unless such a reroute is found, it is recommended that the upper half of this trail be closed to all users. The Pine Allee would remain well connected to Trail 16. The lower half of trail 18 remains in good shape and could even be extended to meet up with a slight reroute of Trail 19, to create a single continuous trail that meanders through the forest to the north and ends up at point CC where Trails 15 and 16 meet. On trail 19, a significant increase in usage might cause erosion at point DD, where people coming down the trail and turning left on trail 18 (towards the Mill Street trailhead) are likely to choose the steep shortcut. Bending the bottom of Trail 19 more north and meeting a rerouted Trail 18, as described above, can circumvent this. The section of trail 20 from CC to EE needs to be rerouted to prevent free-flowing water following the fall line from eroding the remaining topsoil. Rerouting this section requires looping through the sparse forest to the south where the grade is more uniform. The section from EE to the trailhead may need future maintenance, but no immediate action is required. After rerouting and with proper maintenance, this trail can easily support both hikers and bikers and should remain a shared-use trail.



Trail 18 West of location AA



Trail 20 West of location CC



Trail 19 at location DD

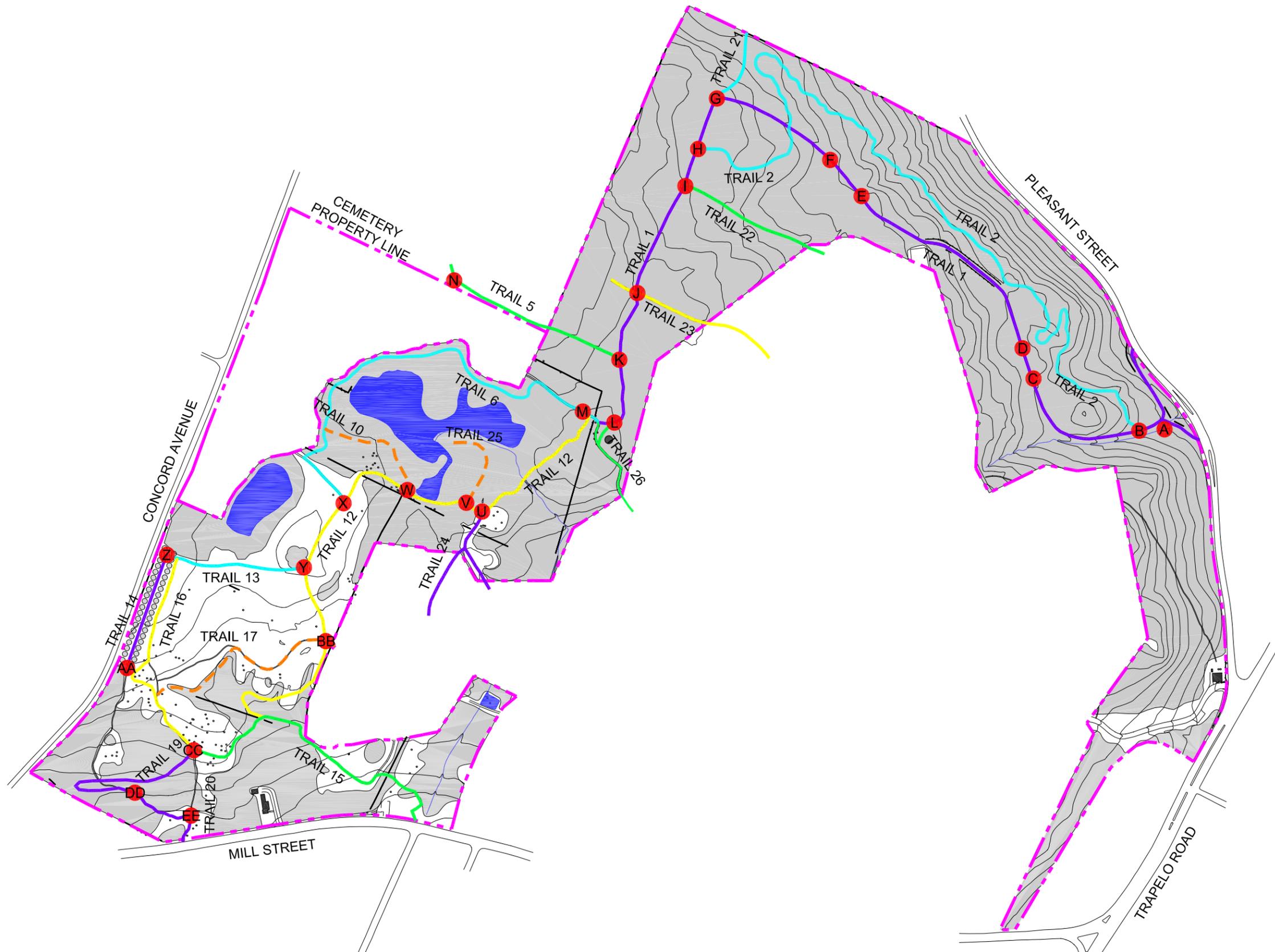


Trail 18 East of location DD

LEGEND	
	<ul style="list-style-type: none"> Meadow Woods Intersection Trail
Contour Interval = 10'	
McLean Trail Assessment	
TRAILS 15 - 20 SHARED USE TRAILS	
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LEGEND	
	Meadow
	Woods
	Intersection Trail Property Line
Contour Interval = 10'	
McLean Trail Assesment	
PROPOSED TRAILS WITH OPEN CEMETERY	
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LEGEND	
	Meadow
	Woods
	Intersection Trail Property Line
Contour Interval = 10'	
McLean Trail Assesment	
PROPOSED TRAILS CLOSED CEMETERY	
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