

April 7, 2020

Norman Khumalo  
Town Manager  
Town of Hopkinton  
Hopkinton, MA

Dr. Mr. Khumalo,

Attached is the document that you requested regarding the proposed route for the Upper Charles Trail. Jack Madden, Project Engineer for VHB has prepared it for your review.

This cover letter is a summary of the route segments that still need to be processed before the Upper Charles Trail Committee can submit our plan to the Select Board and then to the State DOT for a TIP grant. In order to qualify for the grant, we have to work out all the property acquisition requirements whether they be easements or acquisition. Understand that while the basic route has been established, we still, in several cases, have to complete the complex process of resolving all the property issues so we can satisfy the DOT grant requirements.

One of the conditions of the grant is that the Town provide 20% of cost for design and construction. All of the costs that we have incurred to date and going forward can be credited to the local share, unlike a MA Trails Grant (which has a deadline date of 1.5 yrs.). At the same time the State TIP authorities also told us that the more we do to build and construct, the more favorable they look at the total project which is approximately 8 miles and is expected to cost in excess of \$1 million per mile.

What follows is a listing and summary of the work in process aimed at resolving the various Trail segments.

**#1- Milford to College Street ("Phase 6" on Key Plan 2):** Starting from the Milford (UCT) parking lot, you will notice the two paths on VHB maps: one pink and one yellow. One goes through Milford and follows as closely as possible to the Hopkinton Town boundary on wetlands. The other crosses into Holliston into an upland area, which is our preferred route. This committee has tried numerous times to engage the Town of Holliston to get permission to for access to this preferred route, but to no avail. At this point, we would be asking the Select Board or Town Manager to intervene and help us come to an agreement with the Town of Holliston for an easement. Due to the narrow width, curvature and speeds along Hayden Rowe south of College Street to the Milford UCT parking lot, it would not be feasible to construct a shared use path adjacent to Hayden Rowe and within the existing right of way.

**#2- College St area and Hayden Rowe ("Phase 6" on Key Plan 2):** We looked at an adjacent path on College Street that would exit town property and connect to Hayden Rowe. The trail is not doable along College St. as the road is too narrow and windy, and many of the homes come within short distance of where the path would have to be built. The committee made a decision many years ago not to negatively impact any home if at all possible. The only option we saw was to cross over the Connelly property from College Street to Hayden Rowe. We were not successful dealing directly with that property owner. However, we did hear that a conversation was going on between the Town and that property owner to purchase the Connelly property, which would be the ideal solution. The second option would be to wait for a private developer to purchase the land and then when they come before

the Planning Board, it may be possible to eke out an easement around the perimeter of the property for the trail.

**#3- Granite St. area- (“Phase 7” on Key Plan 2). (south)** We’ve had several meetings with the Milford Water Company, which owns a large parcel west of Hayden Rowe and south of Granite Street. The committee has a verbal agreement with the Milford Water Co. for an easement along the south side of Granite Street, but they are concerned with potential trespass to Lake Echo. This is also an environmentally complicated area with streams and wetlands, which come under State jurisdiction. Granite Street is also a “scenic road” and the Planning Board has jurisdiction. In any event, this is what we have called Phase 7, which would travel through town property onto more town property known as the Hughes Property, where the trail would eventually connect with Hayden Rowe. The committee has voted to complete Phase 7 before moving forward with the Milford Water company and the application is sitting on TM’s desk for signature.

**#4- Hayden Rowe – (“Phase 4” on Key Plan 2). from #192 to #143** The path is proposed along the east side of Hayden Rowe and we require information from the Town to determine whether we can build a trail along the sidewalk without taking private property or minimizing any taking. VHB is assuming the available right of way based on a 40’ to 60-foot width, evidence located in the field and surveyed information gathered for the recent Chestnut Street Signal plan provided by the Highway Department at the request of the TM.

**#5-#143 Hayden Rowe (“Phases 1 and 2” on Key Plan 2). (town property, school controlled).** The UCTC requested and was granted permission to build a trail around the entire Irvine/Todaro property during the Planning Bd process. The trail would exit the school property onto EMC Park property and travel along the south side of the property where we would again cross Hayden Rowe, parallel to McDermott Path. Permission was sought and granted from the School Board to traverse this property to the Center Trail Connection. The Trail would continue along the downtown corridor to the Center School. On going conversations with McDermott Path residents about mitigation continue to be positive. We should know in another few months if our grant application is awarded or not.

**#6 -East Main Street. (“Phase 3, 8, 9 and 10” on Key Plans 1 and 2).** The trail would continue east of Center School through town owned property (Phase 3) down to the town property known as the Methodist Church property (Phase 10). The Town is in the process of negotiating easements on two separate parcels in between the Church property and Town land. The trail would then continue across East Main St onto more town owned property onto Legacy Farms open space property (phase 8) where the committee has already negotiated a common use trail to the north side of Legacy Farms north where it would cross using a small part of Tennessee Gas pipeline, where we have already negotiated an easement (Phase 9) (verbal only at this point).

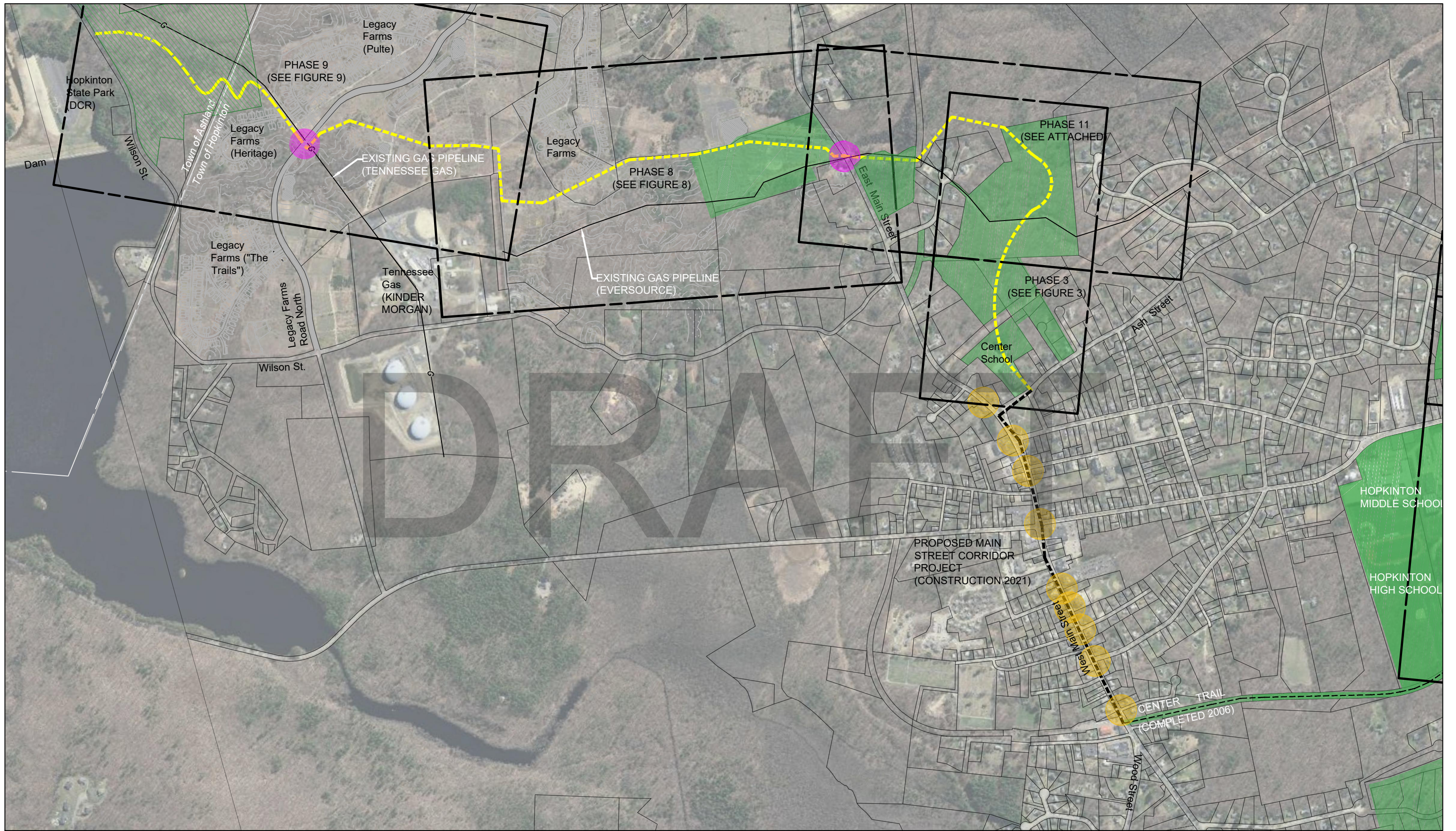
**#7- MA DCR (Hopkinton State Park) (“Phase 9” on Key Plan 2):** Phase 9 would continue easterly onto MA DCR property where they have agreed to let us plan our trail into Hopkinton State Park, however they have asked us to engineer two separate routes onto their property which still needs to be completed. This approach hinged on access to the Tennessee Gas Pipeline which makes at least one off-road option to the State Forest a feasible alternative.

We can be available with our consultant for a review of the attached document at your convenience.

Sincerely,

Jane Moran, Eli Post

Upper Charles Trail Committee



DRAFT

**LEGEND:**

- - - - PROPOSED UCT ALIGNMENT
- - - - PROPOSED BIKE FACILITY (OTHER)
- - - - EXISTING SHARED USE PATH

- EXISTING PEDESTRIAN CROSSING
- PROPOSED BICYCLE/PEDESTRIAN CROSSING

- TOWN-OWNED PARCELS
- OTHER AVAILABLE PARCELS

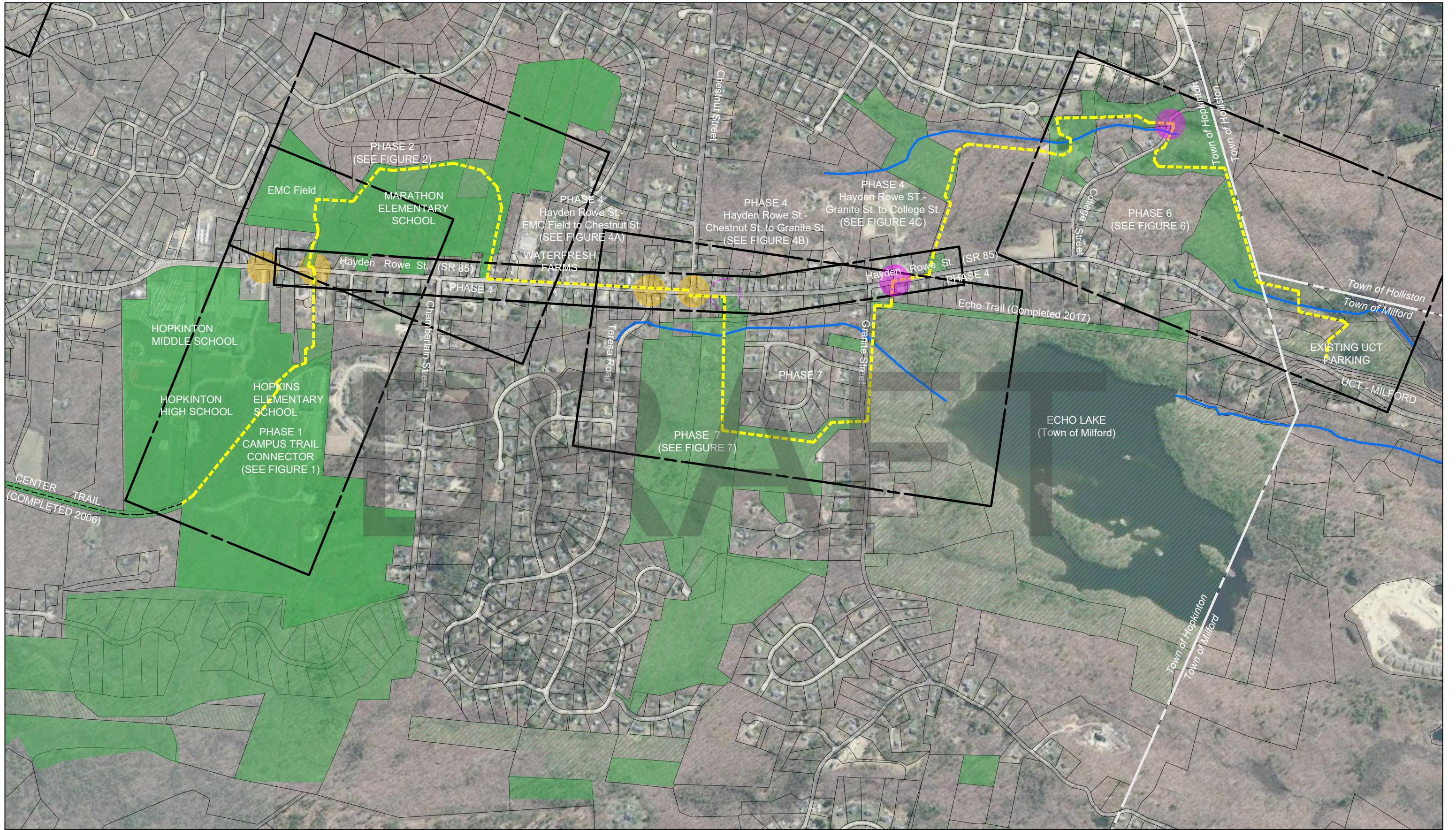
PHASE 1 SEE PHASE DETAIL ATTACHED



Multi-Use Trail Feasibility Study  
Upper Charles River Trail  
Hopkinton, MA  
Overall Schematic

**KEY PLAN 1**

April 3, 2020

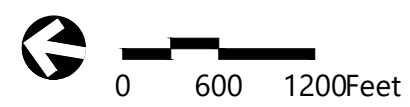


**LEGEND:**

- - - - PROPOSED UCT ALIGNMENT
- - - - PROPOSED BIKE FACILITY (OTHER)
- - - - EXISTING SHARED USE PATH

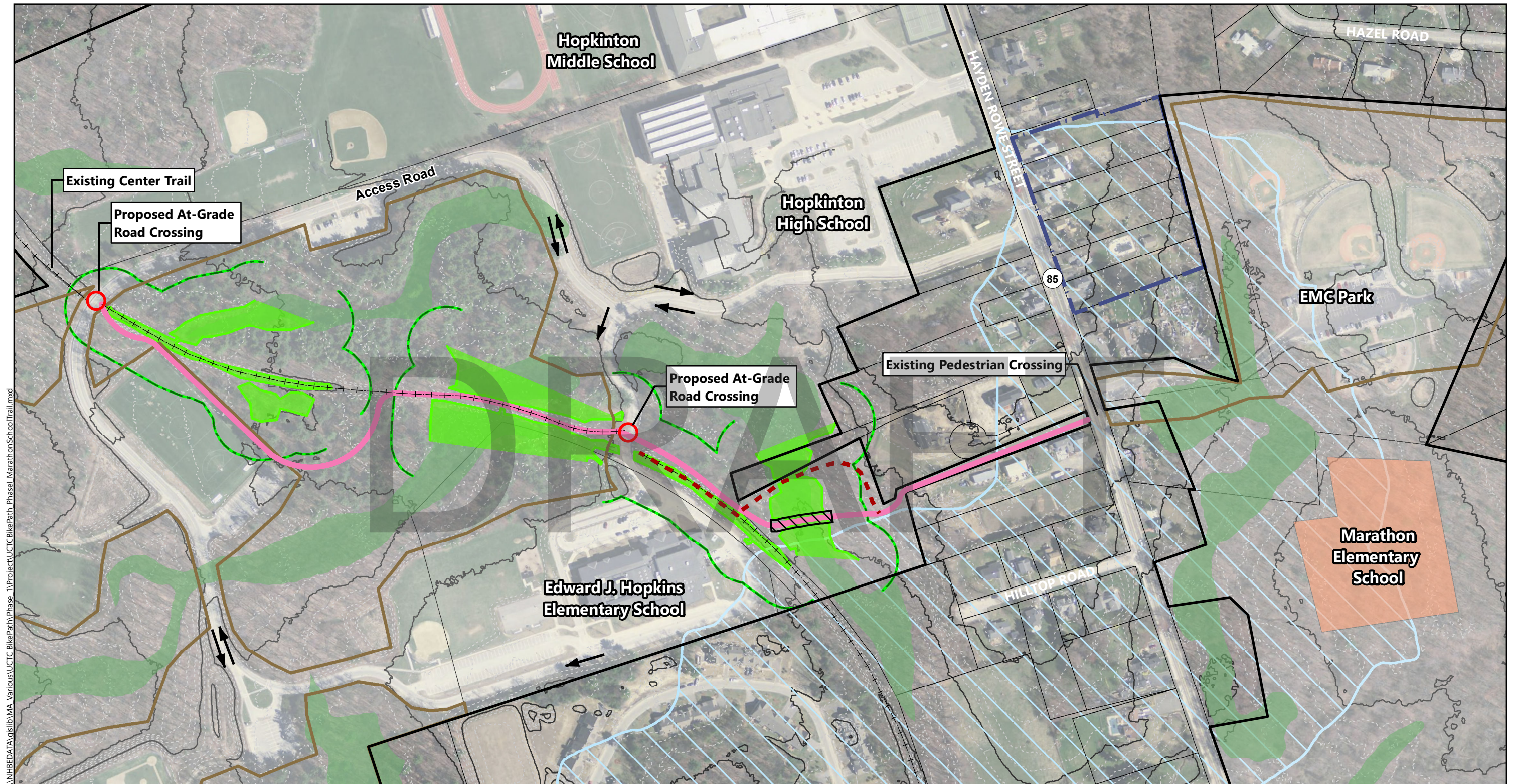
- EXISTING PEDESTRIAN CROSSING
- PROPOSED BICYCLE/PEDESTRIAN CROSSING

- TOWN-OWNED PARCELS
- OTHER AVAILABLE PARCELS
- PHASE 1 SEE PHASE DETAIL ATTACHED

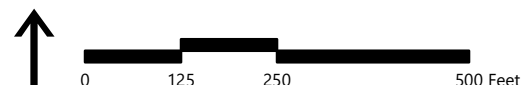


Multi-Use Trail Feasibility Study  
 Upper Charles River Trail  
 Hopkinton, MA  
 Overall Schematic

**KEY PLAN 2**  
 April 3, 2020



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- |  |   |                                 |                            |
|--|---|---------------------------------|----------------------------|
| Proposed Campus Connector Alignment - 10'-wide Shared Use Path | Delineated Wetland Edge (VHB July 2019) | Proposed At-Grade Road Crossing | Conservation/Public Land   |
| Alternative Alignments Considered                              | Wetland Resource Area                   | Railroad Bed                    | MHC Historic District      |
| Town Property Boundary   | Wetlands (MassDEP)                      | Proposed Boardwalk              | Outstanding Resource Water |
| Assessor's Tax Parcel  | 100-ft Wetland Buffer                   | Marathon Elementary School      | 2-ft Contour Intervals     |
|  |   |                                 | 10-ft Index Contour        |

**Upper Charles Trail**

Hopkinton, Massachusetts

**Campus Connector  
Proposed Alignment  
Wetland Delineation  
(VHB - July 2019)**

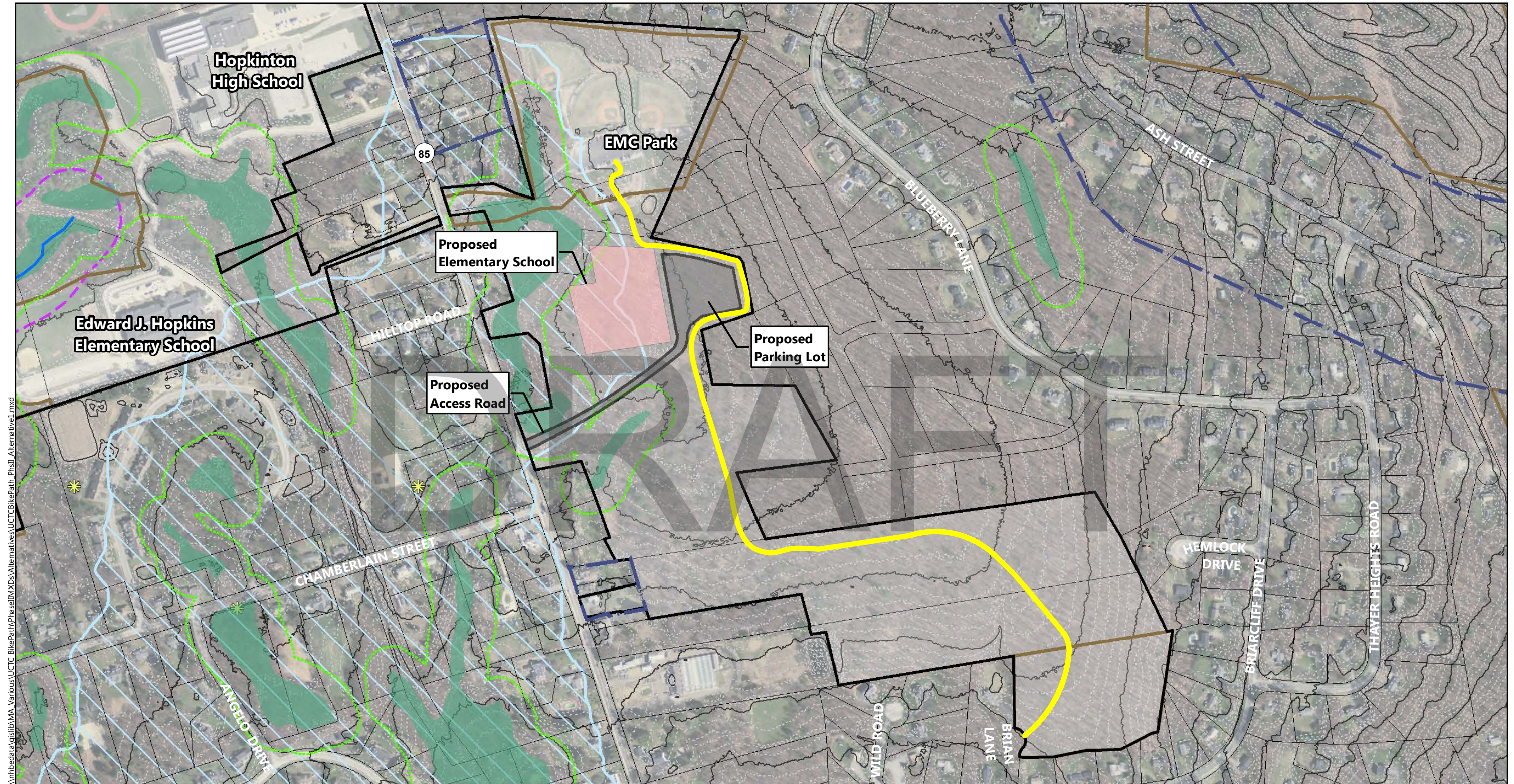
### Impact Assessment - Campus Trail Connector

#	Impact Criteria	Preferred Alternative (Segments 5c,6,7) <sup>2</sup>	Rank <sup>1</sup>
1.	Relocation Impacts and ROW Acquisition	There are no ROW impacts anticipated.	3
2.	Considerations Relating to Pedestrians and Bicyclists	Improved accommodations for recreation and transportation connecting the existing Center Trail with schools and EMC Field. This alternative has the least length of path adjacent to a roadway.	3
3.	Air Quality Impacts	Temporary minor impacts during construction	2
4.	Noise Impacts	Temporary minor impacts during construction	2
5.	Outstanding Resource Water (ORW) Impacts	Segments 1 and 5C may impact ORW. Yes, the off-road bikeway would alter Bordering Vegetated Wetland where necessary to keep the path within Town-owned property.	1
6.	Wetlands	1,406 SF Direct Impacts <sup>3</sup>	2
		25,637 SF 100' Buffer Area Impacts <sup>3</sup>	3
		0 SF 200' Riverbank Impacts	2
7.	Floodplain Impacts	Project limits are not in floodplain.	2
8.	Certified Vernal Pools	There may or may not be certified vernal pools within the project limits.	2
9.	Threatened or Endangered Species (NHESP)	There are no Priority Habitats within the project limits.	2
10.	Areas of Critical Environmental Concern (ACEC)	There are no ACEC's within the project limits.	2
11.	National Register Districts	There are no Historic Resources anticipated within the project limits.	2
12.	Hazardous Waste Sites	There are no Hazardous Materials Sites anticipated within our project limits. Possible mitigation of soils will be reviewed within former rail bed disturbance per State regulations.	2
13.	Construction Impacts	Temporary. Minor traffic control on EMC Field Road and Loop Road.	3
14.	Visual Impacts	Minor impacts due to some clearing and vegetation removal.	2
15.	Public Utilities	There are no utility impacts anticipated.	3
16.	Public Facilities Connections	Connects Hopkinton H.S. and Elementary School to Center Trail and EMC Field, Ceter Trail and Main Street Corridor.	3
17.	Environmental Justice	There are no Environmental Justice areas within our project limits.	2
18.	Construction Cost	\$1,050,000	2
19.	Operations and Maintenance	Recommend a written operations and maintenance plan and an emergency response plan.	2
<b>Final Score<sup>1</sup></b>			<b>47</b>
<b>Final Ranking<sup>1</sup></b>			<b>3</b>

<sup>1</sup> Scoring based on 2016 Feasibility Report ranking of 3 Alternative. 3=Most Preferred, 1=Least Preferred.

<sup>2</sup> Town's Preferred Alternative is based on "Alternative 3" from EMC Field to the Center Trail. Segment 1 including path from EMC field to Hayden Rowe Street.

<sup>3</sup> Impact data from 2016 Feasibility Report updated with VHB field verification completed October 2019. Ranking score not adjusted.



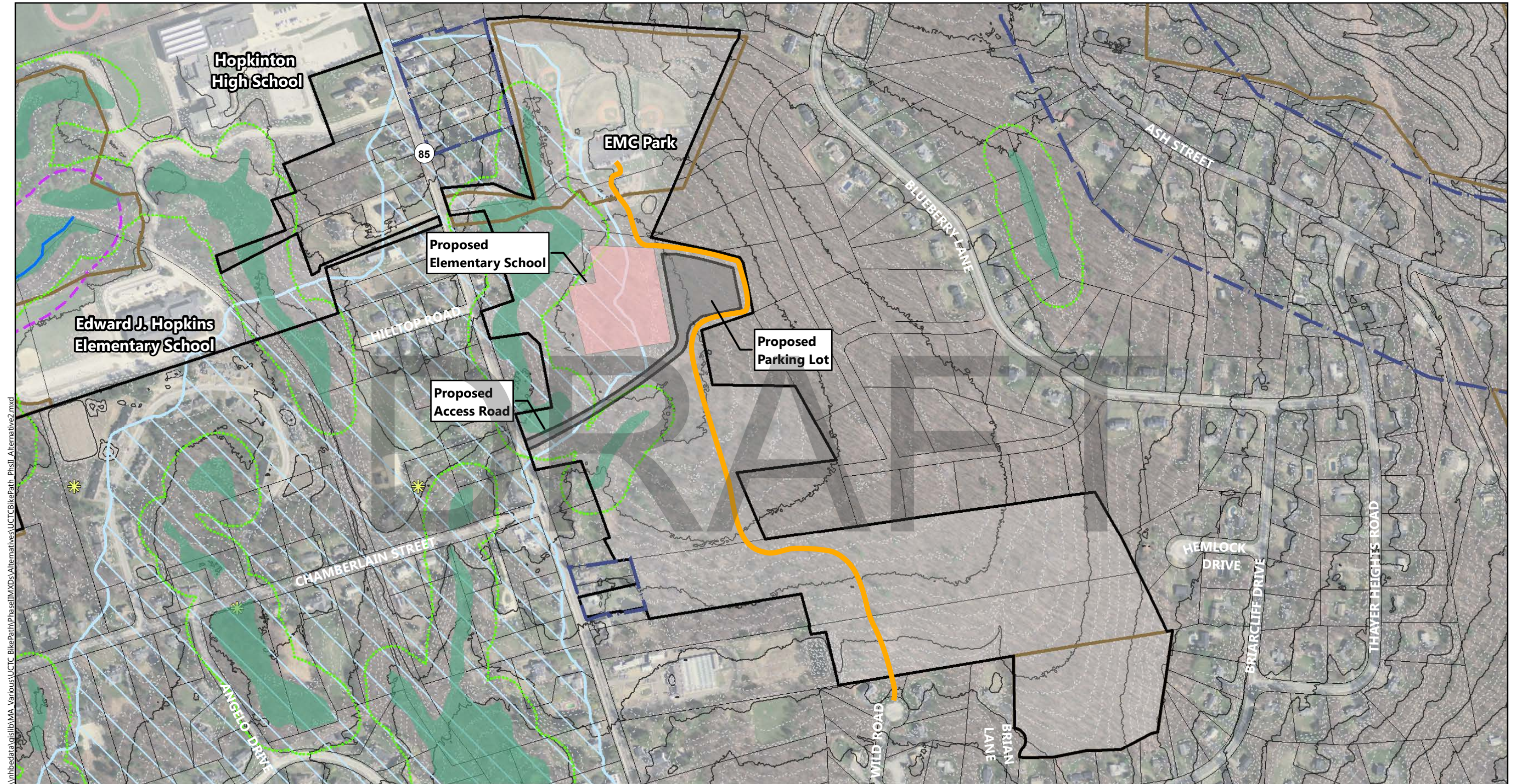
- |                        |                            |                              |                            |
|------------------------|----------------------------|------------------------------|----------------------------|
| Alternative 1A         | Proposed Elementary School | River/Stream                 | Conservation/Public Land   |
| Proposed Parking       | MassDEP Wetland            | MHC Historic District        | Outstanding Resource Water |
| Town Property Boundary | 100-ft Wetland Buffer      | 2-ft Contour Intervals       | 10-ft Index Contour        |
| Assessor's Tax Parcel  | Riverfront Area            | NHESP Certified Vernal Pools |                            |

**Upper Charles Trail**

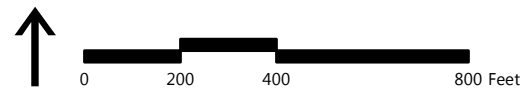
Hopkinton, Massachusetts

**Upper Charles Trail Phase II  
Alternative 1A Overview**





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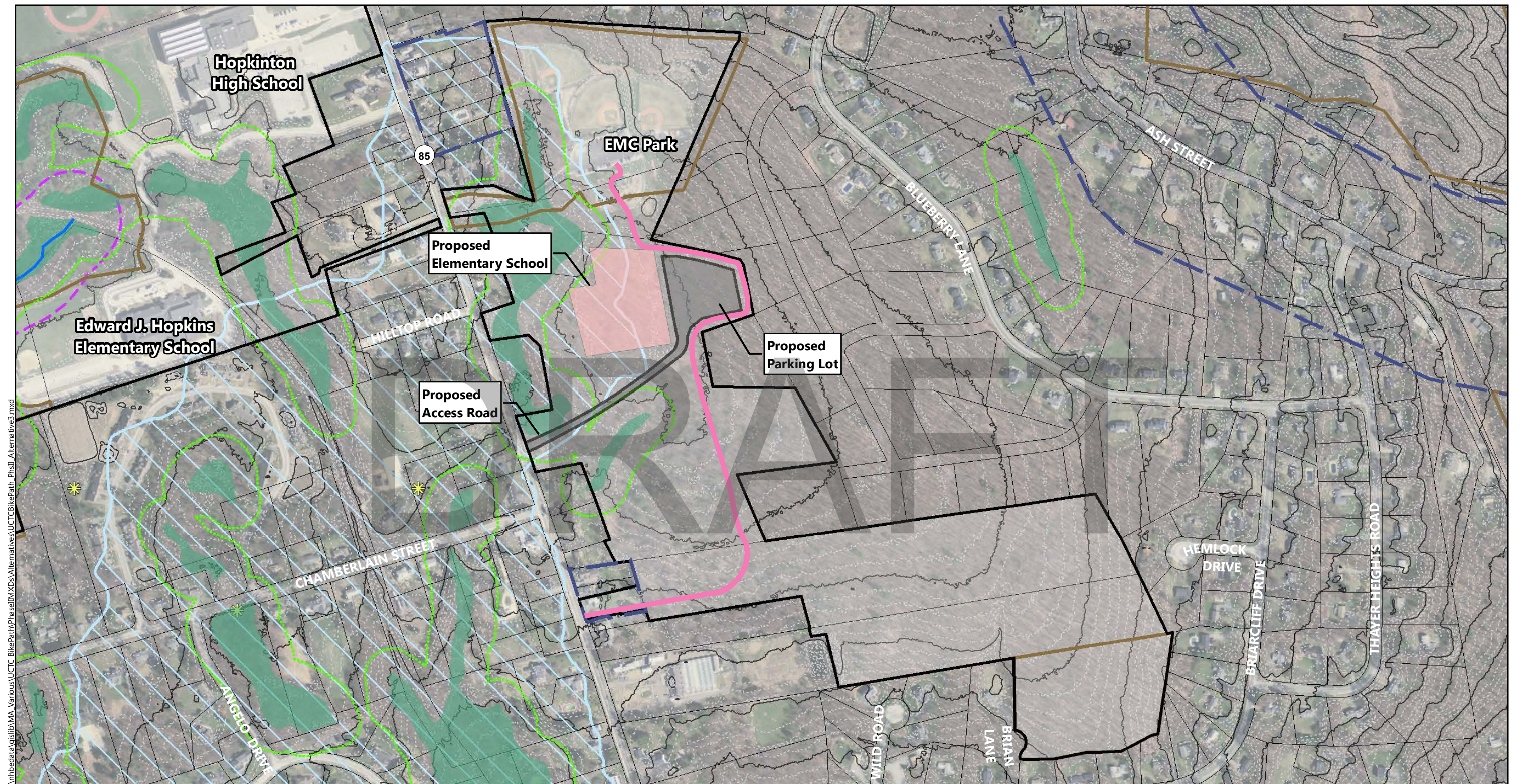


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|------------------------|----------------------------|------------------------------|----------------------------|
| Alternative 1B         | Proposed Elementary School | River/Stream                 | Conservation/Public Land   |
| Proposed Parking       | MassDEP Wetland            | MHC Historic District        | Outstanding Resource Water |
| Town Property Boundary | 100-ft Wetland Buffer      | 2-ft Contour Intervals       | 10-ft Index Contour        |
| Assessor's Tax Parcel  | Riverfront Area            | NHESP Certified Vernal Pools |                            |

**Upper Charles Trail**

Hopkinton, Massachusetts

**Upper Charles Trail Phase II  
Alternative 1B Overview**



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|------------------------|----------------------------|------------------------------|----------------------------|
| Alternative 2          | Proposed Elementary School | River/Stream                 | Conservation/Public Land   |
| Proposed Parking       | MassDEP Wetland            | MHC Historic District        | Outstanding Resource Water |
| Town Property Boundary | 100-ft Wetland Buffer      | 2-ft Contour Intervals       | 10-ft Index Contour        |
| Assessor's Tax Parcel  | Riverfront Area            | NHESP Certified Vernal Pools |                            |

**Upper Charles Trail** | Hopkinton, Massachusetts

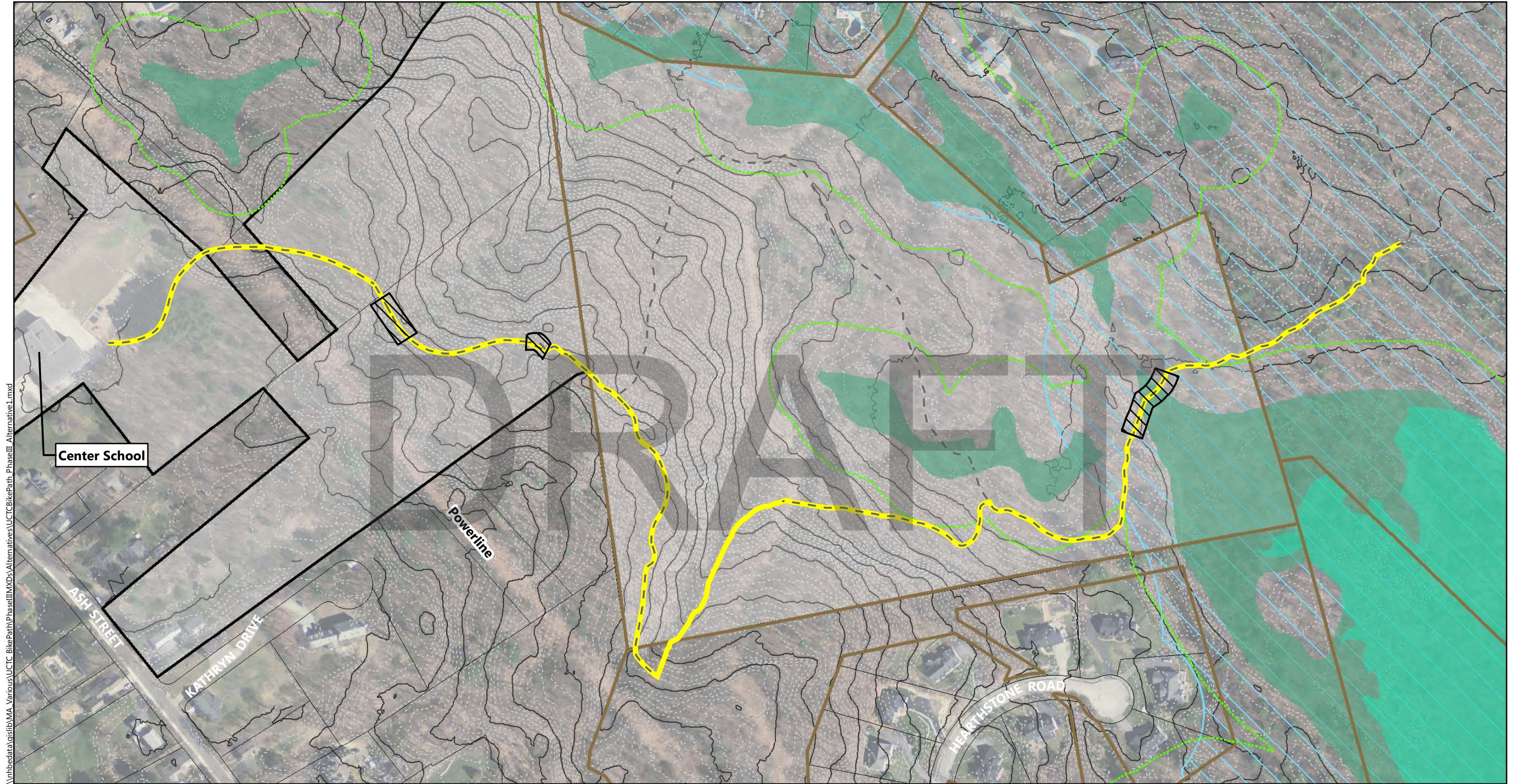
**Upper Charles Trail Phase II  
Alternative 2 Overview**

Phase 2 Alternatives Ranking Matrix

#	Impact Criteria	Alternative 1	Rank <sup>1</sup>	Alternative 2	Rank <sup>1</sup>	Alternative 3	Rank
1.	Relocation Impacts and ROW Acquisition	There are no relocation or ROW impact anticipated with this alignment.	3	Would require a 20' wide easement for approx. 100' at Wild Road connection.	1	May require temporary easement for formal crossing of SR 85.	2
2.	Considerations Relating to Pedestrians and Bicyclists	Improved accommodations for recreation and transportation connecting the existing Center Trail with schools and EMC Field. There is maximum separation with vehicular traffic with this alignment.	3	Improved accommodations for recreation and transportation connecting the existing Center Trail with schools and EMC Field. There is maximum separation with vehicular traffic with this alignment.	3	Improved accommodations for recreation and transportation connecting the existing Center Trail with schools and EMC Field. This alignment terminates at State Route 85 which has sidewalks but no separated bicycle path north of Chestnut Street.	2
3.	Air Quality Impacts	Temporary minor impacts during construction	2	Temporary minor impacts during construction	2	Temporary minor impacts during construction	2
4.	Noise Impacts	Temporary minor impacts during construction	2	Temporary minor impacts during construction	2	Temporary minor impacts during construction	2
5.	Outstanding Resource Water (ORW) Impacts	There are no impacts to Outstanding Resource Water with this alignment.	0	There are no impacts to Outstanding Resource Water with this alignment.	0	There are no impacts to Outstanding Resource Water with this alignment.	0
		There are no impacts to wetlands with this alignment.	0	There are no impacts to wetlands with this alignment.	0	There are no impacts to wetlands with this alignment.	0
6.	Wetlands	0 SF Direct Impacts	0	0 SF Direct Impacts	0	0 SF Direct Impacts	0
		0 SF 100' Buffer Area Impacts	0	0 SF 100' Buffer Area Impacts	0	0 SF 100' Buffer Area Impacts	0
		0 SF 200' Riverbank Impacts	0	0 SF 200' Riverbank Impacts	0	0 SF 200' Riverbank Impacts	0
7.	Floodplain Impacts	Project limits are not in floodplain.	0	Project limits are not in floodplain.	0	Project limits are not in floodplain.	0
8.	Certified Vernal Pools	There are no certified vernal pools within the project area.	0	There are no certified vernal pools within the project area.	0	There are no certified vernal pools within the project area.	0
9.	Threatened or Endangered Species (NHESP)	There are no Priority Habitats within the project limits.	0	There are no Priority Habitats within the project limits.	0	There are no Priority Habitats within the project limits.	0
10.	Areas of Critical Environmental Concern (ACEC)	There are no ACEC's within the project limits.	0	There are no ACEC's within the project limits.	0	There are no ACEC's within the project limits.	0
11.	National Register Districts	Insignificant impact <sup>2</sup>	2	Insignificant impact <sup>2</sup>	2	Insignificant impact <sup>2</sup>	1
12.	Hazardous Waste Sites	There are no Hazardous Materials Sites within our project limits.	0	There are no Hazardous Materials Sites within our project limits.	0	There are no Hazardous Materials Sites within our project limits.	0
13.	Construction Impacts	Temporary.	2	Temporary.	2	Temporary.	2
14.	Visual Impacts	Minor impacts due to some clearing and vegetation removal.	2	Minor impacts due to some clearing and vegetation removal.	2	Minor impacts due to some clearing and vegetation removal.	2
15.	Public Utilities	There are no impacts to public utilities anticipated with this project.	0	There are no impacts to public utilities anticipated with this project.	0	There are no impacts to public utilities anticipated with this project.	0
16.	Public Facilities Connections	Connects EMC Field and proposed elementary school to Chestnut Street corridor.	3	Connects EMC Field and proposed elementary school to Chestnut Street corridor.	3	Connects EMC Field and proposed elementary school to Chestnut Street corridor via State Route 85.	1
17.	Environmental Justice	There are no Environmental Justice areas within our project limits.	0	There are no Environmental Justice areas within our project limits.	0	There are no Environmental Justice areas within our project limits.	0
18.	Construction/Design Cost	\$890,000/\$134,000 - \$178,000	1	\$820,000/\$123,000 - \$164,000	2	\$640,000/\$96,000 - \$128,000	3
19.	Operations and Maintenance	Recommend a written operations and maintenance plan and an emergency response plan.	2	Recommend a written operations and maintenance plan and an emergency response plan.	2	Recommend a written operations and maintenance plan and an emergency response plan.	2
Final Score			22		21		19
Final Ranking			3		2		1

<sup>1</sup> 3=Most Preferred, 1=Least Preferred

<sup>2</sup> Segment 2 is in close proximity to several buildings associated with a MHC identified historic district (Hayden Rowe Streetscape II), but no buildings are designated.



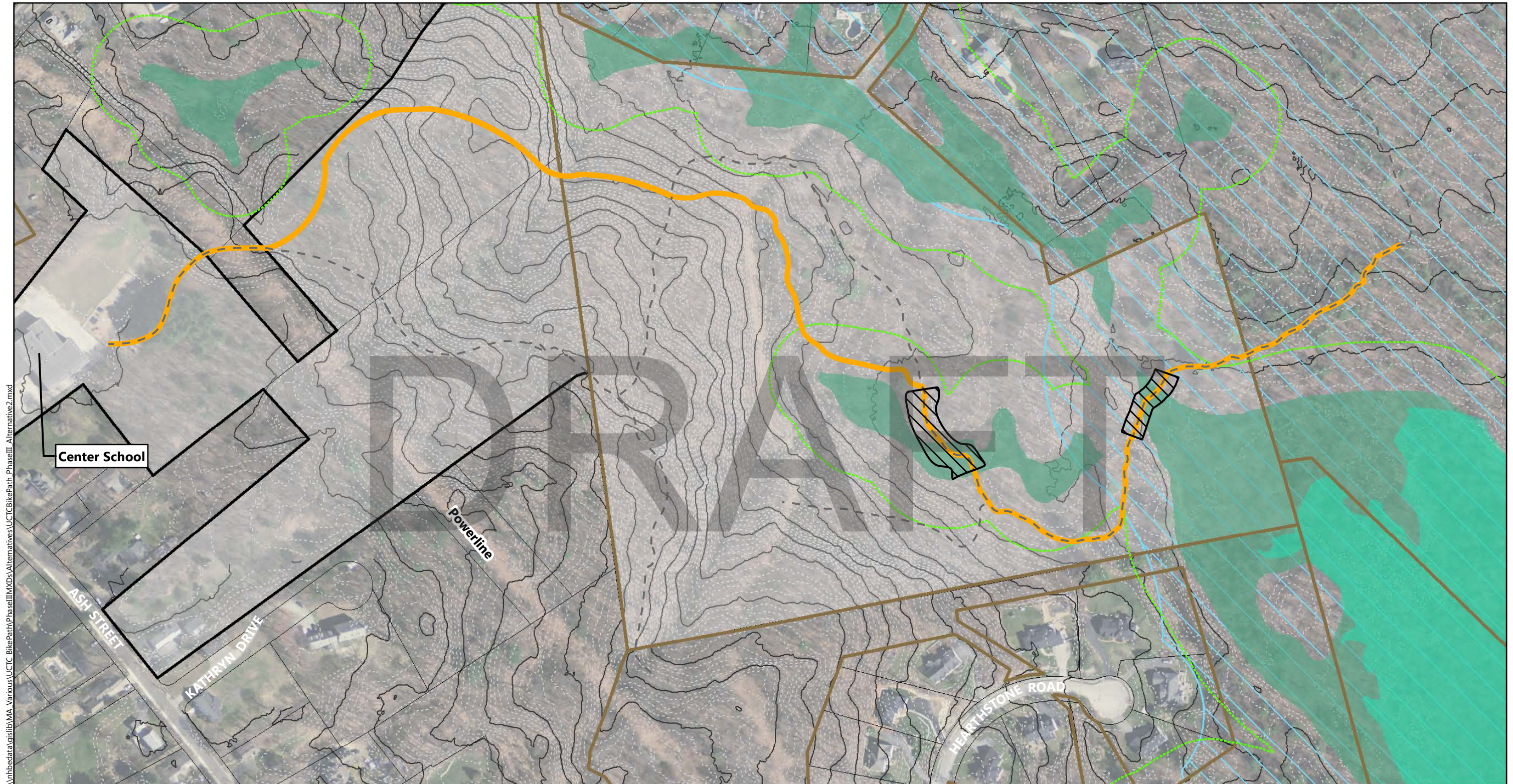
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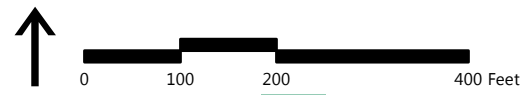
- |  |                          |                             |                        |
|--|--------------------------|-----------------------------|------------------------|
| Alternative 1  | MassDEP Wetland          | National Register Buildings | Proposed Boardwalk     |
| Existing Path  | 100-ft Wetland Buffer    | MHC Historic District       | 2-ft Contour Intervals |
| MassDEP Approved Wellhead Protection Areas (Zone II) | Conservation/Public Land | Town Property Boundary      | 10-ft Index Contour    |
| 100-Year Floodplain                                  | Assessor's Tax Parcel    |                             |                        |

**Upper Charles Trail** | Hopkinton, Massachusetts

**Upper Charles Trail Phase III  
Alternative 1 Overview**



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- |  |                          |                             |                        |
|--|--------------------------|-----------------------------|------------------------|
| Alternative 2  | MassDEP Wetland          | National Register Buildings | Proposed Boardwalk     |
| Existing Path  | 100-ft Wetland Buffer    | MHC Historic District       | 2-ft Contour Intervals |
| MassDEP Approved Wellhead Protection Areas (Zone II) | Conservation/Public Land | Town Property Boundary      | 10-ft Index Contour    |
| 100-Year Floodplain                                  | Assessor's Tax Parcel    |                             |                        |

**Upper Charles Trail**

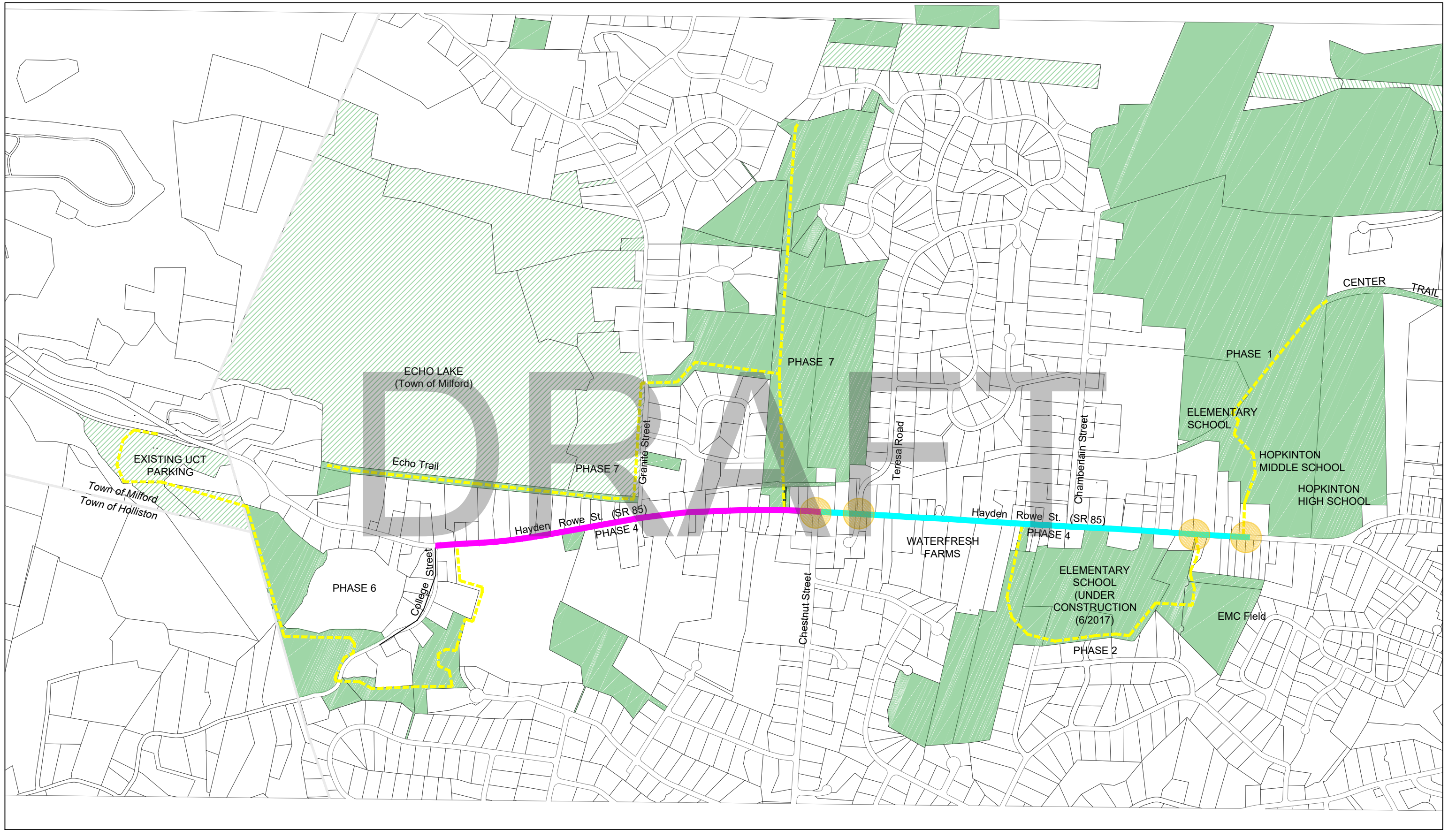
Hopkinton, Massachusetts

**Upper Charles Trail Phase III  
Alternative 2 Overview**

**Phase 3 Alternatives Ranking Matrix**

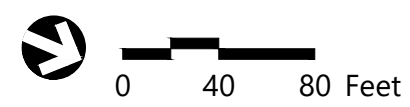
#	Impact Criteria	Alternative 1	Rank <sup>1</sup>	Alternative 2	Rank <sup>1</sup>
1.	Relocation Impacts and ROW Acquisition	May Require minor acquisitions on Segment 2 due to crossing of parcel (U17 50 0) owned by NStar Electric Co. and used as a corridor for power transmission lines	1	May Require minor acquisitions on Segment 2 due to crossing of parcel (U17 50 0) owned by NStar Electric Co. and used as a corridor for power transmission lines	1
2.	Considerations Relating to Pedestrians and Bicyclists	This alternative has the most length of path with grades > 5% (1,650LF).	1	This alternative has the least length of path with grades > 5% (1,570LF).	2
3.	Air Quality Impacts	Temporary minor impacts during construction	1	Temporary minor impacts during construction	1
4.	Noise Impacts	Temporary minor impacts during construction	1	Temporary minor impacts during construction	1
5.	Outstanding Resource Water (ORW) Impacts	There are no Outstanding Resource Waters within our project limits.	0	There are no Outstanding Resource Waters within our project limits.	0
6.	Wetlands	Yes, the off-road bikeway would alter Freshwater Wetlands and 100-Foot Perimeter Wetland located along its route.	2	Yes, the off-road bikeway would alter Freshwater Wetlands and 100-Foot Perimeter Wetland located along its route.	1
		1,594 SF Direct Impacts	2	3,924 SF Direct Impacts	1
		17,447 SF 100' Buffer Area Impacts	2	32,592 SF 100' Buffer Area Impacts	1
		0 SF 200' Riverbank Impacts	0	0 SF 200' Riverbank Impacts	0
7.	Floodplain Impacts	Project limits are not in floodplain.	0	Project limits are not in floodplain.	0
8.	Certified Vernal Pools	There are no certified vernal pools within the project limits.	0	There are no certified vernal pools within the project limits.	0
9.	Threatened or Endangered Species (NHESP)	There are no Priority Habitats within the project limits.	0	There are no Priority Habitats within the project limits.	0
10.	Areas of Critical Environmental Concern (ACEC)	There are no ACEC's within the project limits.	0	There are no ACEC's within the project limits.	0
11.	National Register Districts	There are no National Register Districts within the project limits.	0	There are no National Register Districts within the project limits.	0
12.	MassDEP Approved Wellhead Protection Area (Zone II)	Yes, this alternative does encroach within MassDEP Approved Wellhead protection Areas (19,921 SF).	1	Yes, this alternative does encroach within MassDEP Approved Wellhead protection Areas (18,361 SF).	2
13.	Hazardous Waste Sites	There are no Hazardous Materials Sites within our project limits.	0	There are no Hazardous Materials Sites within our project limits.	0
14.	Construction Impacts	Yes. Clearing and earth work of undeveloped forest right of way 19,500 SF (0.45 Ac ).	2	Yes. Clearing and earth work of undeveloped forest right of way 77,440 SF (1.8 Ac ).	1
15.	Visual Impacts	Yes. Clearing and vegetation removal totalling 116,800 SF (2.68 AC).	2	Yes. Clearing and vegetation removal totalling 125,640 SF (2.88 AC).	1
16.	Public Utilities	May impact existing overhead utilities on Segment 2 (overhead electric) and Segment 9 (underground gas).	1	May impact existing overhead utilities on Segment 2 (overhead electric) and Segment 8 (underground gas).	1
17.	Public Facilities Connections	Connects Ceter School with Town-owned open space.	2	Connects Ceter School with Town-owned open space.	2
18.	Environmental Justice	There are no Environmental Justice areas within our project limits.	0	There are no Environmental Justice areas within our project limits.	0
19.	Construction/Design Cost	\$2,560,000/\$384,000 - \$512,000	1	\$2,330,000/\$349,500 - \$466,000	2
20.	Operations and Maintenance	Recommend a written operations and maintenance plan and an emergency response plan.	2	Recommend a written operations and maintenance plan and an emergency response plan.	2
<b>Final Score</b>			<b>21</b>		<b>19</b>
<b>Final Ranking</b>			<b>2</b>		<b>1</b>

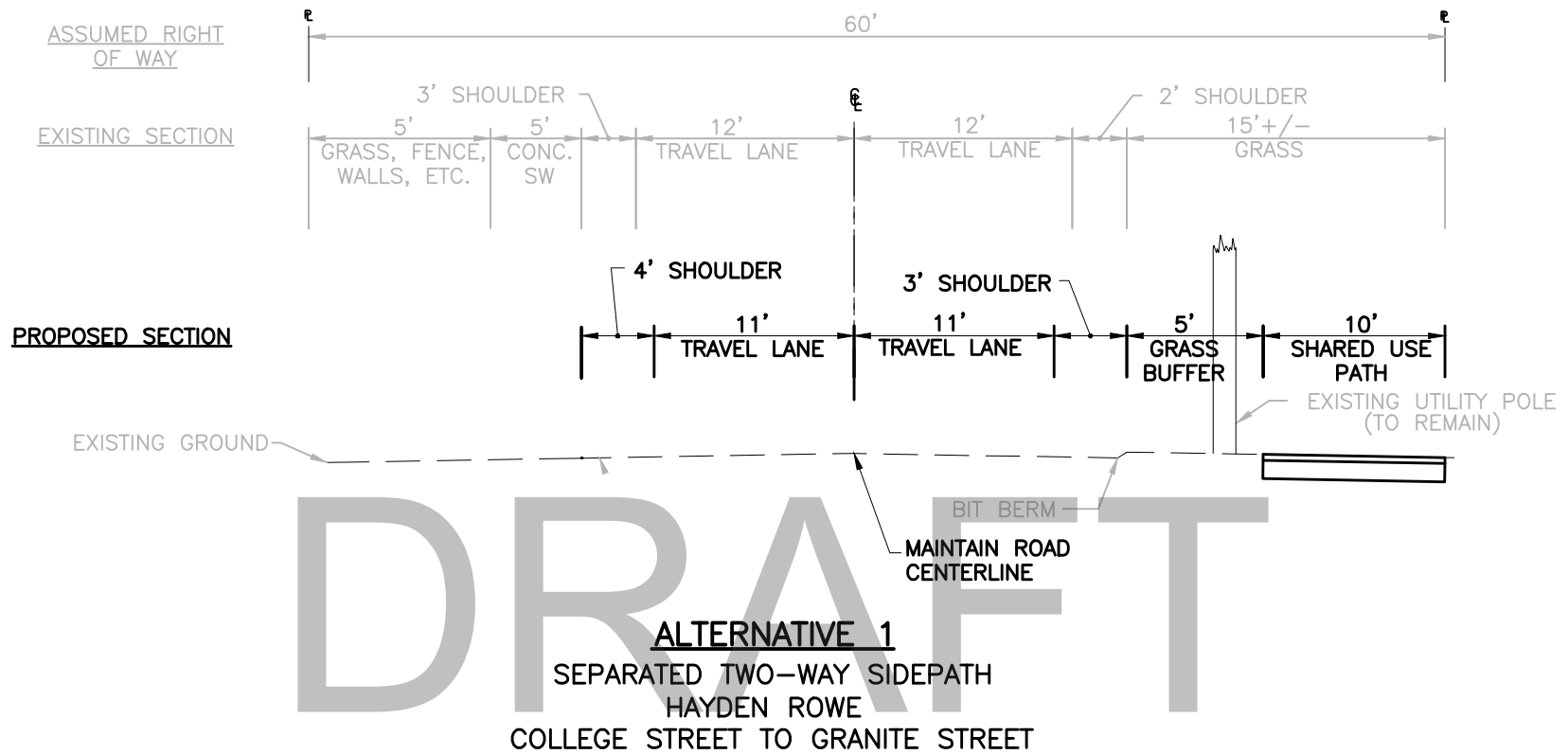
<sup>1</sup> 2=More Preferred, 1=Less Preferred



**LEGEND:**

- PHASE 4 SEGMENT 1  
SEE "ALTERNATIVE 1"
  - PHASE 4 SEGMENT 2  
SEE "ALTERNATIVES 2A, 2B"
- - - PROPOSED UCT ALIGNMENT
  - EXISTING PEDESTRIAN CROSSING
- TOWN-OWNED PARCELS
  - ▨ OTHER MUNICIPAL/UTILITY PROPERTY





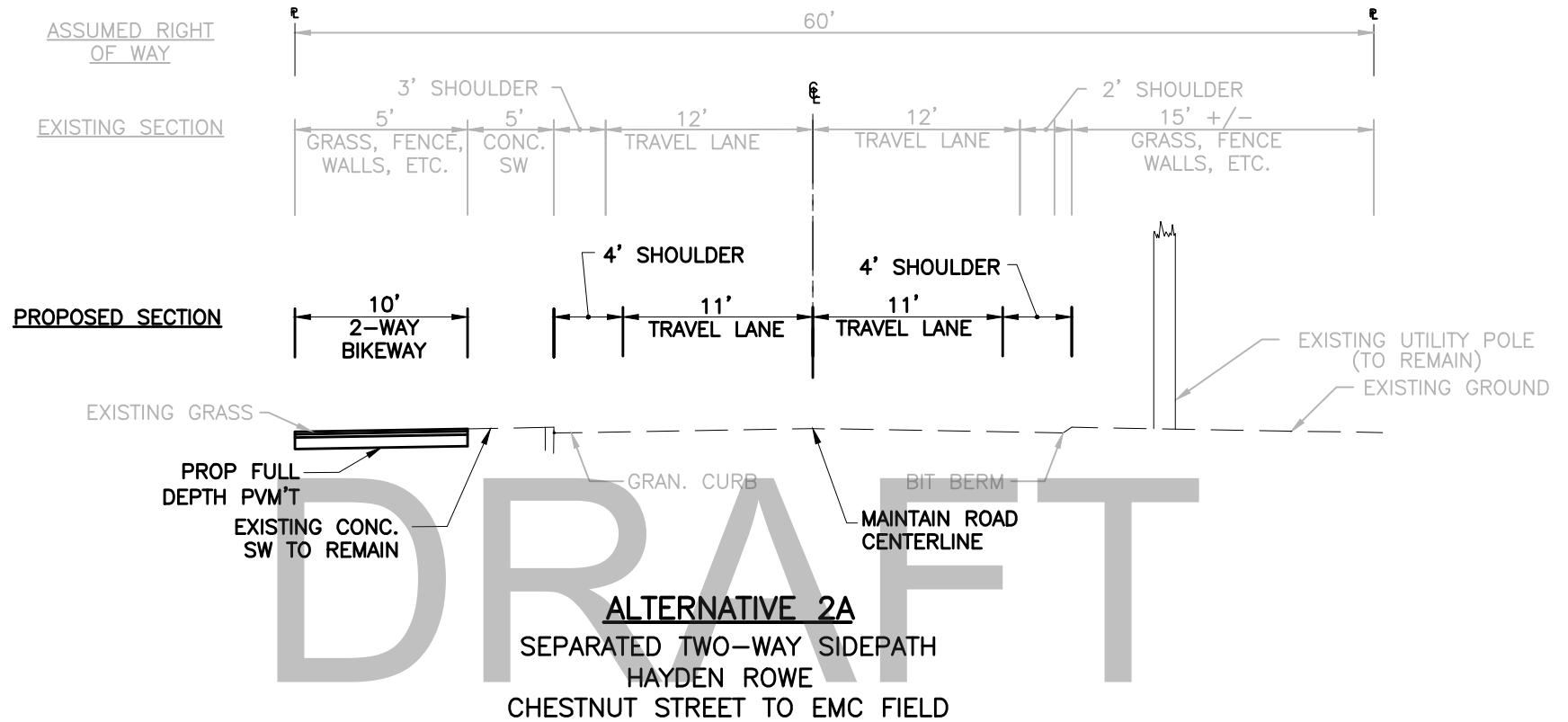
**EXISTING SECTION**  
 HAYDEN ROWE STREET (SR85)  
 COLLEGE STREET TO GRANITE STREET  
 LOOKING NORTH

**NOTES:**

1. RIGHT OF WAY AND LOCATION OF CENTERLINE ASSUMED FROM BEST AVAILABLE INFORMATION PROVIDED BY TOWN DPW 4/22/2020.
2. MODIFICATIONS TO THE HAYDEN ROWE TRAVEL LANES AND SHOULDER WIDTH MAY NEED APPROVAL OF MASSDOT.







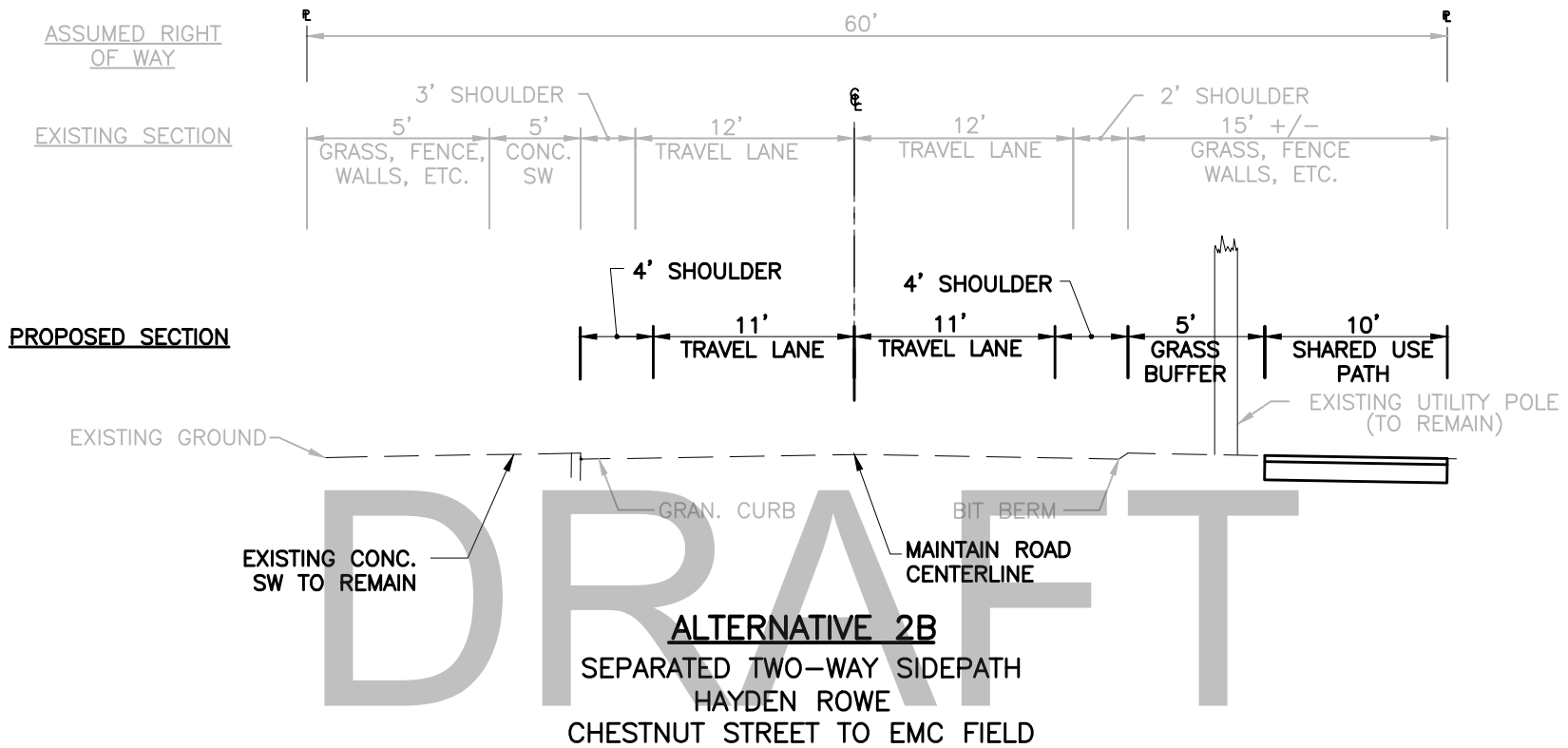
NOTES:

1. RIGHT OF WAY AND LOCATION OF CENTERLINE ASSUMED FROM BEST AVAILABLE INFORMATION PROVIDED BY TOWN DPW 4/22/2020.



**EXISTING SECTION**  
 HAYDEN ROWE STREET (SR85)  
 CHESTNUT STREET TO EMC FIELD  
 LOOKING NORTH





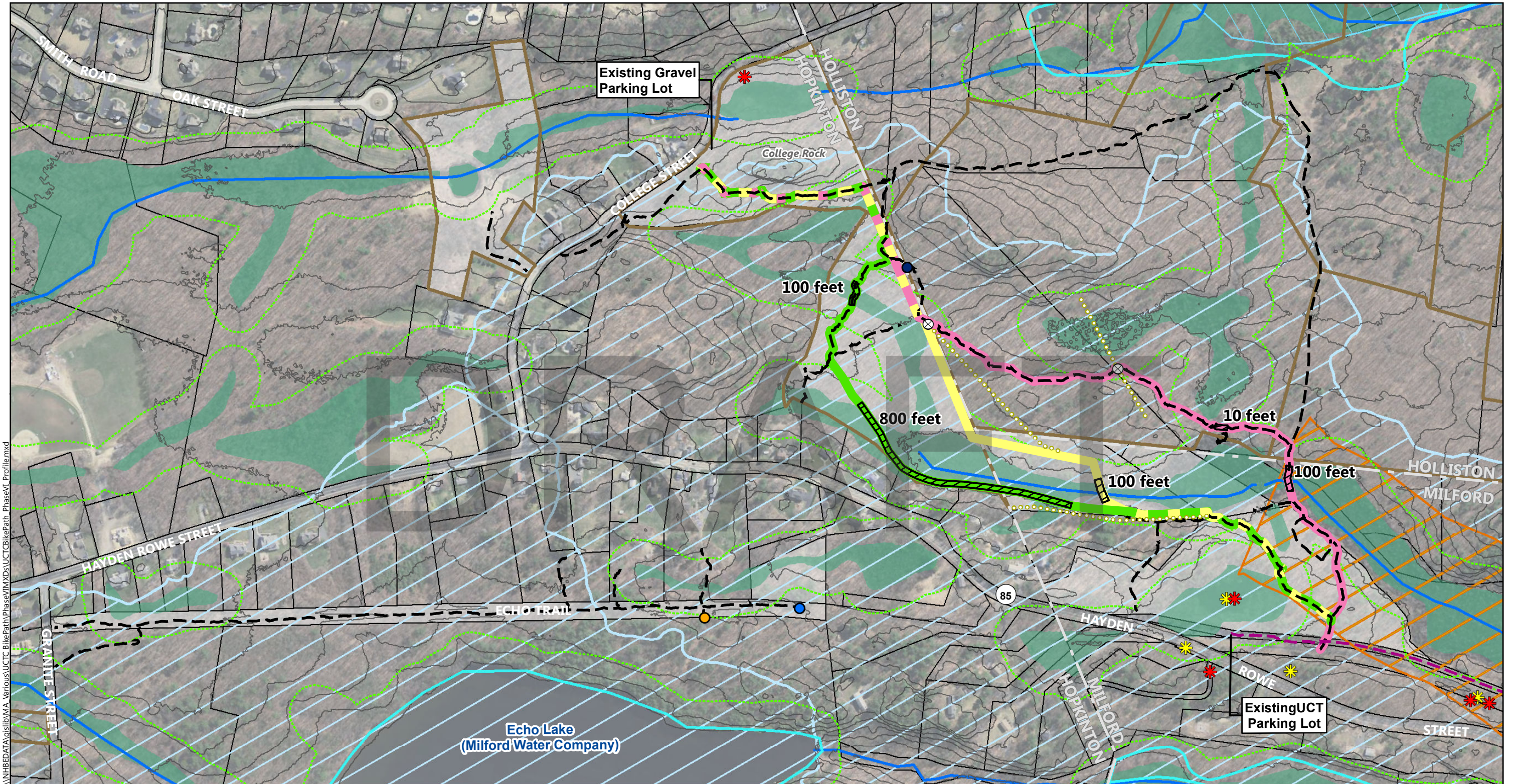
**NOTES:**

1. RIGHT OF WAY AND LOCATION OF CENTERLINE ASSUMED FROM BEST AVAILABLE INFORMATION PROVIDED BY TOWN DPW 4/22/2020.



**EXISTING SECTION**  
HAYDEN ROWE STREET (SR85)  
CHESTNUT STREET TO EMC FIELD  
LOOKING NORTH





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- |                               |                                    |                              |  |                       |
|-------------------------------|------------------------------------|------------------------------|--|-----------------------|
| Proposed Alternative 1        | Existing Footpath                  | NHESP Certified Vernal Pools | 100-Year Floodplain                                  | MassDEP Wetland       |
| Proposed Alternative 2        | Existing Shared Use Path           | NHESP Potential Vernal Pools | Conservation/Public Land                             | 100-ft Wetland Buffer |
| Proposed Alternative 3        | Existing Stone Wall                | Existing Break in Stone Wall | MassDEP Approved Wellhead Protection Areas (Zone II) | Assessor's Tax Parcel |
| Proposed Alternative 1, 2 & 3 | Proposed 12-ft Wide Water Crossing | Chainlink Gate               | NHESP Priority Habitat                               | Town Boundary         |
|                               |                                    | Boundary Marker              | Outstanding Resource Water                           | 10-ft Index Contour   |
|                               |                                    | Stockade Barrier             |  |                       |

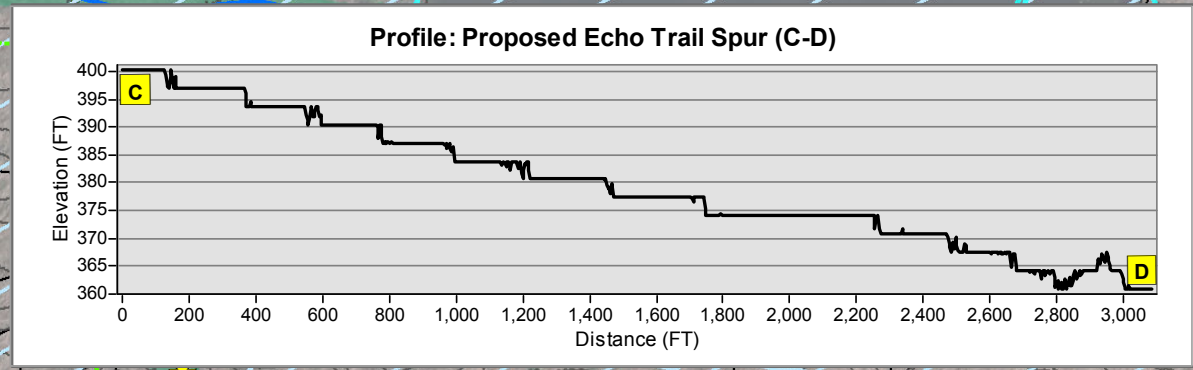
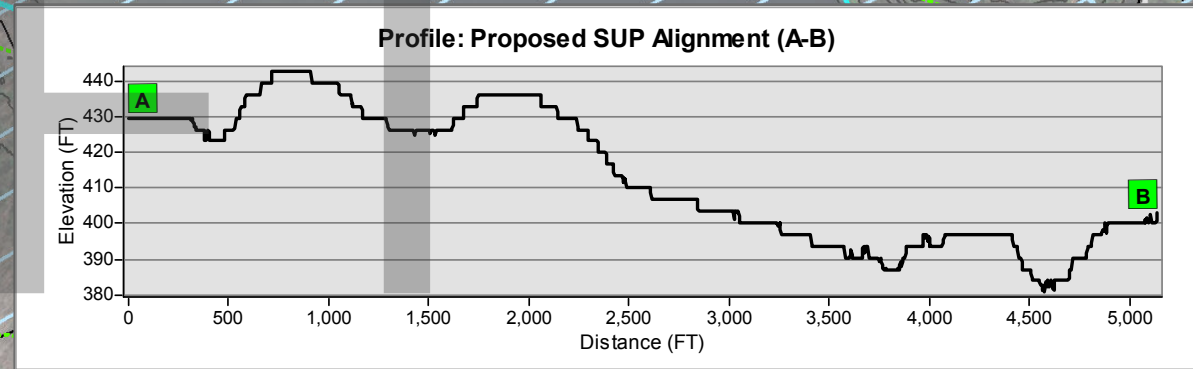
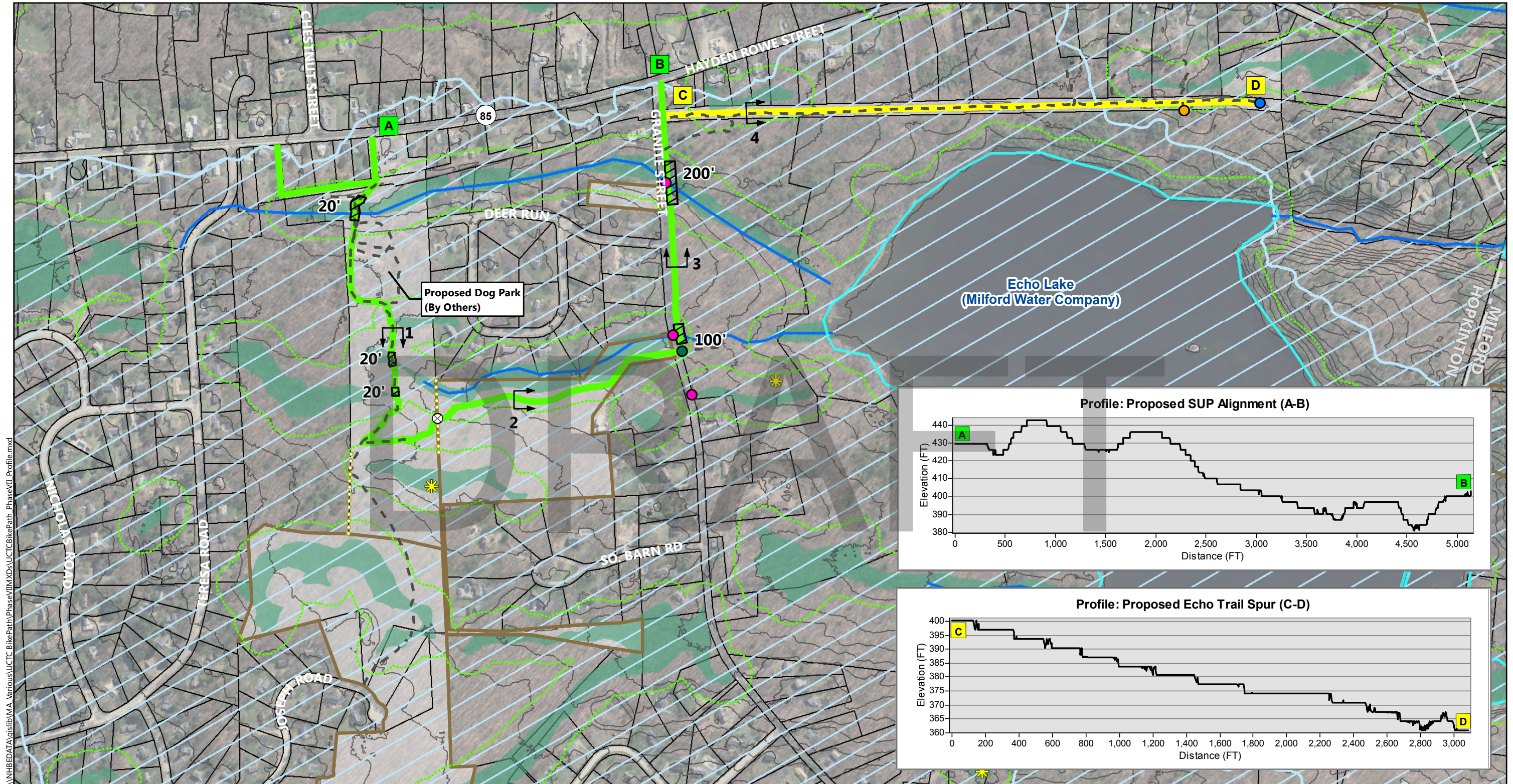
**Upper Charles Trail**

Hopkinton, Massachusetts

The following resources are not present within the project vicinity:

1. Areas of Critical Environmental Concern (ACEC)
2. Chapter 21E Sites
3. Hazardous Waste Generators
4. NHESP Certified Vernal Pools

**Upper Charles Trail Phase VI  
Proposed Shared Use Path**



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0 250 500 1000 Feet

Proposed SUP Alignment	Existing Break in Stone Wall	NHESP Potential Vernal Pools	MassDEP Wetland
Echo Trail Spur	Existing Culvert	Outstanding Resource Water	100-ft Wetland Buffer
Existing Footpath*	Chainlink Gate	100-Year Floodplain	Assessor's Tax Parcel
Existing Stone Wall	Stockade Barrier	Conservation/Public Land	Town Boundary
Proposed 12-ft Wide Water Crossing	Proposed At-Grade Crossing	10-ft Index Contour	Section View

\* This linework shown includes two separate data sets

**Upper Charles Trail** | Hopkinton, Massachusetts

- The following resources are not present within the project vicinity:
1. Areas of Critical Environmental Concern (ACEC)
  2. NHESP Certified Vernal Pools and Priority Habitat
  3. Chapter 21E Sites
  4. Hazardous Waste Generators
  5. NHESP Certified Vernal Pools
  6. MassDEP Approved Wellhead Protection Areas

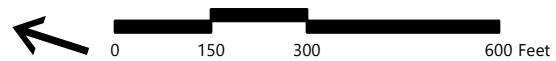
**Upper Charles Trail Phase VII Profile**

**Phase 7 Impact Analysis Summary**

#	Impact Criteria	Proposed SUP Alignment	Proposed Echo Trail
1.	Relocation Impacts and ROW Acquisition	May require minor acquisitions on Segment 1 due to required width for separated sidepath owned by Milford Water Co. as well as along Segment 3 where proposed alignment utilizes an existing 15'-wide easement	No acquisitions are anticipated
2.	Considerations Relating to Pedestrians and Bicyclists	This alignment provides a vehicle-separated facility for bicyclists and pedestrians as much as possible; will be compliant with current ADA regulations, and will improve access for non-motorized users.	This alignment provides a vehicle-separated facility for bicyclists and pedestrians; will be compliant with current ADA regulations; and will improve access to Town-owned parcel for recreational uses.
3.	Air Quality Impacts	Temporary minor impacts during construction	Temporary minor impacts during construction
4.	Noise Impacts	Temporary minor impacts during construction	Temporary minor impacts during construction
5.	Outstanding Resource Water (ORW) Impacts	117,936 SF impact to Outstanding Resource Waters	62,008 SF impact to Outstanding Resource Waters
6.	Wetlands	Yes, the off-road bikeway would alter Freshwater Wetlands and 100-Foot Perimeter Wetland located along its route. 8,705 SF Direct Impacts 70,475 SF 100' Buffer Area Impacts 8,800 SF 200' Riverbank Impacts	Yes, the off-road bikeway would alter Freshwater Wetlands and 100-Foot Perimeter Wetland located along its route. 53 SF Direct Impacts 20,959 SF 100' Buffer Area Impacts 0 SF 200' Riverbank Impacts
7.	Floodplain Impacts	Project limits are <u>not</u> in floodplain.	Project limits are <u>not</u> in floodplain.
8.	Certified Vernal Pools	There are <u>no</u> certified vernal pools within the project limits.	There are <u>no</u> certified vernal pools within the project limits.
9.	Threatened or Endangered Species (NHESP)	There are <u>no</u> Priority Habitats within the project limits.	There are <u>no</u> Priority Habitats within the project limits.
10.	Areas of Critical Environmental Concern (ACEC)	There are <u>no</u> ACEC's within the project limits.	There are <u>no</u> ACEC's within the project limits.
11.	National Register Districts	There are <u>no</u> National Register Districts within the project limits.	There are <u>no</u> National Register Districts within the project limits.
12.	MassDEP Approved Wellhead Protection Area(Zone II)	There are <u>no</u> impacts to MassDEP Approved Wellhead Protection Areas within our project limits.	There are <u>no</u> impacts to MassDEP Approved Wellhead Protection Areas within our project limits.
13.	Hazardous Waste Sites	There are <u>no</u> Hazardous Materials Sites within our project limits.	There are <u>no</u> Hazardous Materials Sites within our project limits.
14.	Construction Impacts	Yes. Clearing and earth work of undeveloped forest right of way 33,000 SF (0.76 Ac ) .	No. Existing cart path will be improved.
15.	Visual Impacts	Yes. Clearing and vegetation removal totalling 116,020 SF (2.66 AC).	No. Existing cart path will be improved.
16.	Public Utilities	May impact existing overhead utilities on Segment 3 (overhead electric).	No impacts to existing utilities are anticipated.
17.	Public Facilities Connections	Provides separated bicycle and pedestrian facility within the Hayden Rowe Street corridor	Provides separated bicycle and pedestrian facility within the Hayden Rowe Street corridor
18.	Environmental Justice	There are no Environmental Justice areas within our project limits.	There are no Environmental Justice areas within our project limits.
19.	Construction/Design Cost	\$1,950,000/\$293,000 - \$390,000	\$650,000/\$97,500 - \$130,000
20.	Operations and Maintenance	Recommend a written operations and maintenance plan and an emergency response plan.	Recommend a written operations and maintenance plan and an emergency response plan.



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- |                                      |                       |  |                          |
|--------------------------------------|-----------------------|--|--------------------------|
| Proposed UCT Bike/Ped and Equestrian | MPSP Trail            | NHESP Potential Vernal Pools                         | Conservation/Public Land |
| Cross Section                        | Utility Easement      | MassDEP Wetland                                      | Parcel Boundaries        |
| Gas Pipeline                         | 100-ft Wetland Buffer | MassDEP Approved Wellhead Protection Areas (Zone II) | Town Boundary            |
| Gravel                               | 2 ft Contours         |  | 10 ft Index Contours     |
| Pavemet                              |                       |  |                          |
| Building                             |                       |  |                          |

**Proposed Alignment**

- Resources Not Present Within The Project Vicinity:
- |   |                               |
|---|-------------------------------|
| 1. Chapter 21E Sites                              | 5. MHC Historic District      |
| 2. Certified Vernal Pool                          | 6. NHESP Priority Habitat     |
| 3. 100- Year Floodplain                           | 7. Outstanding Resource Water |
| 4. Areas of Critical Environmental Concern (ACEC) | 8. RFA                        |

Hopkinton & Ashland, MA

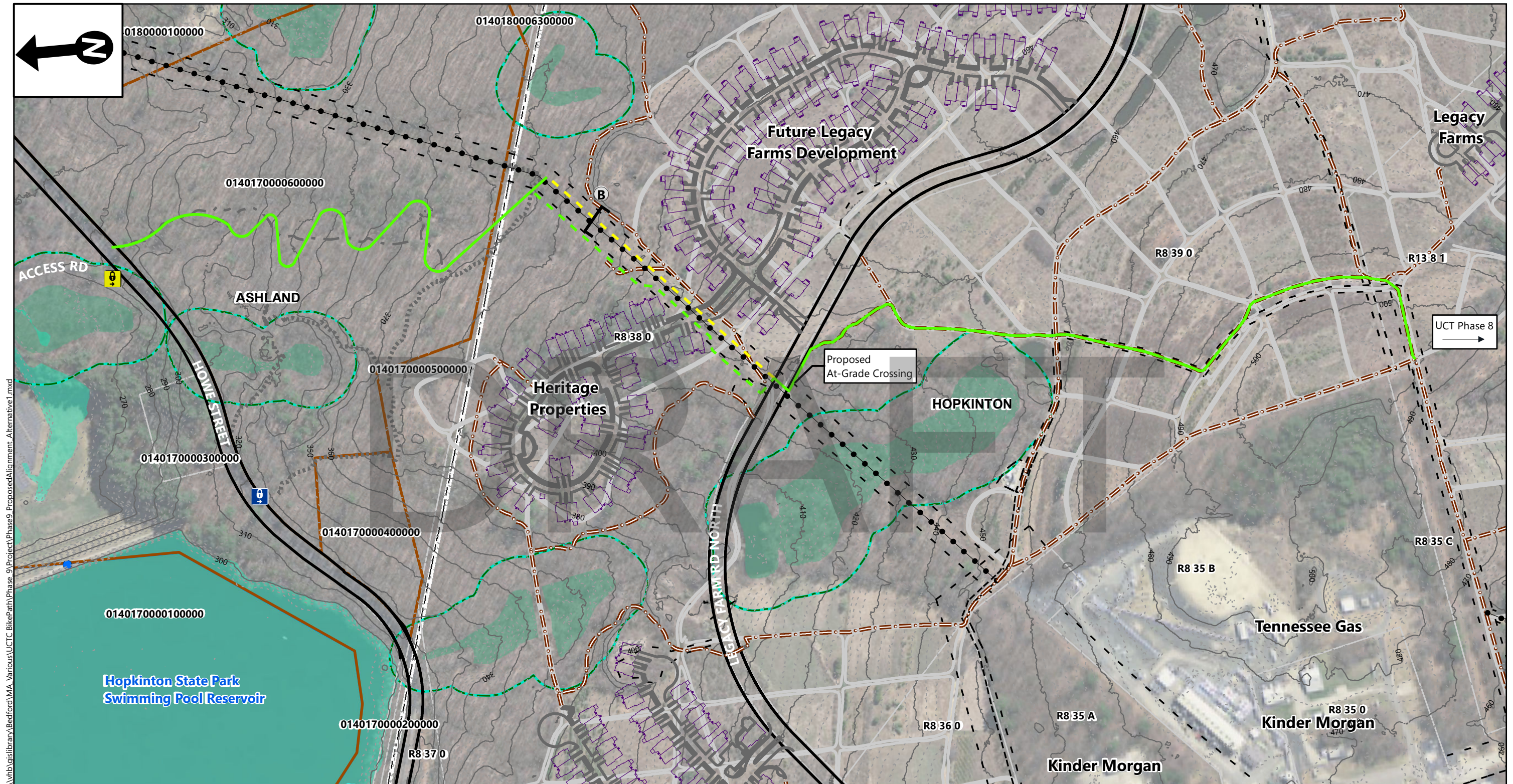
**Upper Charles Trail Phase 8**

Source Info: MassGIS, VHB

**UCT Phase 8 Impact Summary**

#	Impact Criteria	Impact from Proposed Facility
1.	Relocation Impacts and ROW Acquisition	<b>TBD.</b> May require an easement through the Legacy Farms property. <b>MOU pending.</b>
2.	Considerations Relating to Pedestrians and Bicyclists	Facility will provide an ADA accessible path with spur connections to residential, commercial, and public resources. Equestrian access is provided as well. Separation between bicycles/pedestrians and equestrian users shall meet minimal federal standards.
3.	Air Quality Impacts	Temporary minor impacts during construction
4.	Noise Impacts	Temporary minor impacts during construction
5.	Outstanding Resource Water (ORW) Impacts	<b>0 SF</b> impact to Outstanding Resource Waters
6.	Wetlands	<b>2,827 SF</b> impact to 100' Buffer Area <b>0 SF</b> impact to 200' Riverbank Wetlands
7.	Floodplain Impacts	Project limits are not in floodplain.
8.	Certified Vernal Pools	There are no certified vernal pools within the project limits.
9.	Threatened or Endangered Species (NHESP)	There are no Priority Habitats within the project limits.
10.	Areas of Critical Environmental Concern (ACEC)	There are no ACEC's within the project limits.
11.	National Register Districts	There are no National Register Districts within the project limits.
12.	MassDEP Approved Wellhead Protection Area (Zone II)	<b>56,718 SF</b> impact to MassDEP Approved Wellhead Protection Areas.
13.	Hazardous Waste Sites	There are no Hazardous Materials Sites within our project limits.
14.	Construction Impacts	Area impacted = 4,750' X 30' = <b>142,500 SF (3.3 Ac)</b>
15.	Visual Impacts	Plan minimizes visual impact from adjacent residential properties.
16.	Public Utilities	Impact to existing utilities is not anticipated.
17.	Public Facilities Connections	Phase 8 improves connections to/from Legacy Farms to UCT corridor including local employment, schools, and recreational facilities.
18.	Environmental Justice	There are no Environmental Justice areas within our project limits.
19.	<b>Construction/Design Cost</b>	<b>TBD</b>
20.	Operations and Maintenance	Recommend a written operations and maintenance plan and an emergency response plan.

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- |  |                              |                     |                  |                       |                          |
|--|------------------------------|---------------------|------------------|-----------------------|--------------------------|
| Proposed UCT Phase 9 Bike/Ped and Equestrian | Cross Section (See Figure 4) | Existing Foot Trail | Existing Roadway | MassDEP Wetland       | Conservation/Public Land |
| Proposed UCT Phase 9 SUP-Only Bike/Ped       | Chain Link Gate              | MPSP Trail          | Pavemet          | 100-ft Wetland Buffer | Parcel Boundaries        |
| Proposed UCT Phase 9 Equestrian-Only         | Yellow Gate                  | Utility Easment     | Gravel           | 100-Year Floodplain   | Town Boundary            |
|  | Flagged Path                 | Gas Pipeline        | Building         |                       | 2 ft Contours            |
|  |                              |                     |                  |                       | 10 ft Index Contours     |

**Proposed Alignment**

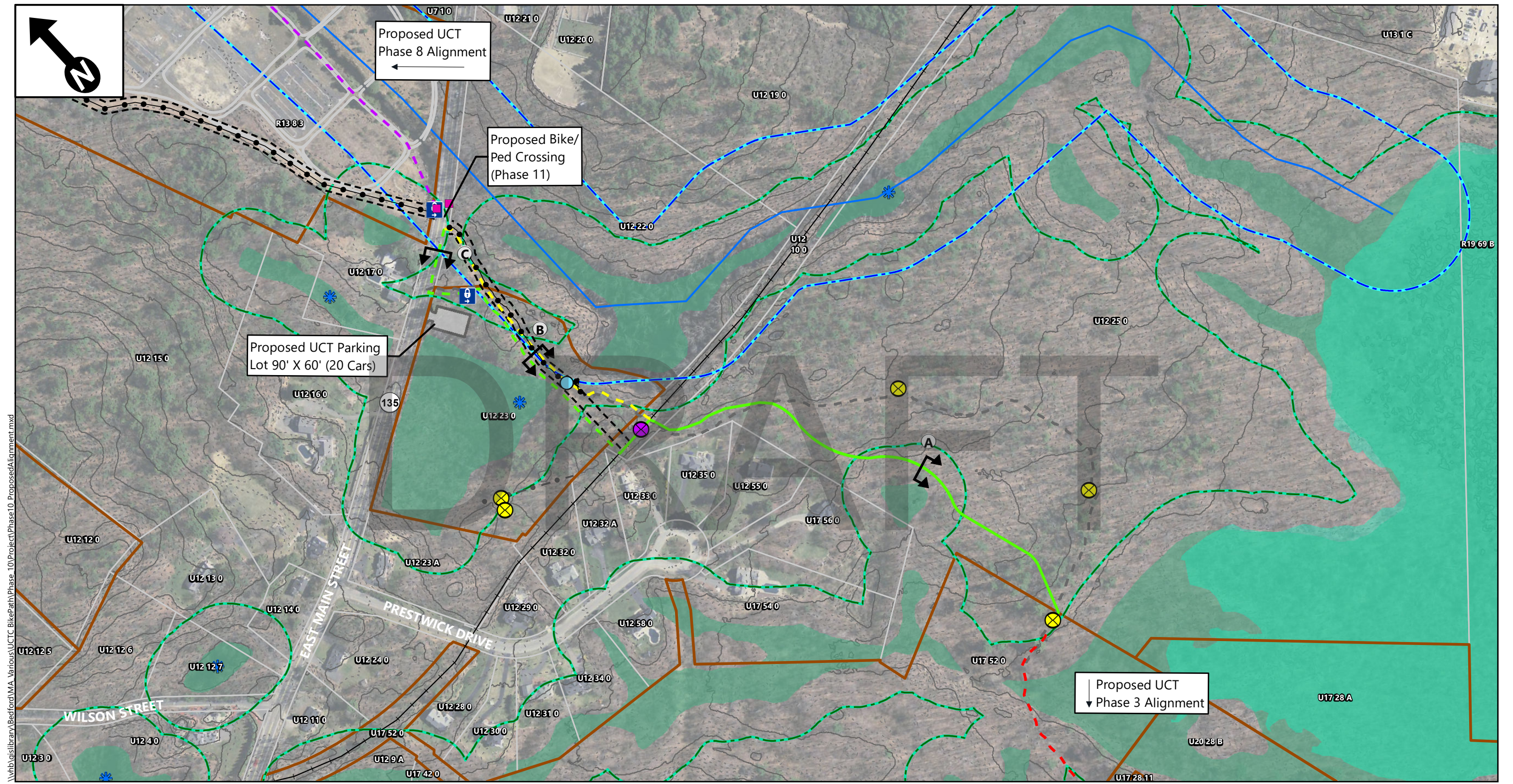
- Resources Not Present Within The Project Vicinity:
- Chapter 21E Sites
  - MHC Historic District
  - NHESP Priority Habitat, CVP & PVP
  - Outstanding Resource Water
  - RFA
  - Areas of Critical Environmental Concern (ACEC)

Hopkinton & Ashland, MA

**Upper Charles Trail Phase 9 Alternative 1**

Source Info: MassGIS, VHB





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**Figure 1 - Proposed Alignment**

Hopkinton, MA

- |   |  |                           |                        |                              |                          |
|---|--|---------------------------|------------------------|------------------------------|--------------------------|
| Proposed UCT Phase 10 Bike/Ped and Equestrian | Phase 8 Proposed UCT Bike/Ped and Equestrian | Utility Easement          | Gate                   | NHESP Potential Vernal Pools | Cross Section            |
| Proposed UCT Phase 10 Bike/Ped Only           | Proposed UCT Phase 3: Alternative 1          | Gas Pipeline              | Culvert                | River/Stream                 | Conservation/Public Land |
| Proposed UCT Phase 10 Equestrian Only         | Existing Foot Path                           | Gravel                    | Granite Cattle Xing    | MassDEP Wetland              | Parcel Boundaries        |
|   | Stone Wall                                   | Pavemet                   | Existing Wall Crossing | 100-ft Wetland Buffer        | Town Boundary            |
|   |  | Building                  | Existing Water Xing    | 200-ft River Front Area      | 2 ft Contours            |
|   |  | Rail Road Bed (Abandoned) | Proposed Parking Lot   | 100-Year Floodplain          | 10 ft Index Contours     |

- Resources Not Present Within The Project Vicinity:
1. Areas of Critical Environmental Concern (ACEC)
  2. Chapter 21E Sites
  3. Certified Vernal Pool
  4. MHC Historic District
  5. NHESP Priority Habitat
  6. Outstanding Resource Water

**Upper Charles Trail Phase 10**

Source Info: MassGIS, VHB

**Table 1: UCT Phase 10 Impact Summary**

#	Impact Criteria	Impact from Proposed Facility
1.	Relocation Impacts and ROW Acquisition	Final Property Acquisitions, <b>TBD</b>  Estimated Areas: U12 10 0 = 14,800 SF ( <b>0.34 AC</b> ); U12 25 0 = 416,000 SF ( <b>9.6 AC</b> )
2.	Considerations Relating to Pedestrians and Bicyclists	Facility will provide an ADA accessible path with spur connections to residential, commercial, and public resources. Equestrian access is provided as well. Separation between bicycles/pedestrians and equestrian users shall meet minimal federal standards.
3.	Air Quality Impacts	Temporary minor impacts during construction
4.	Noise Impacts	Temporary minor impacts during construction
5.	Outstanding Resource Water (ORW) Impacts	<b>0 SF</b> impact to Outstanding Resource Waters
6.	Wetlands	<b>211 SF</b> impact to DEP wetlands
		<b>15,606 SF</b> impact to 100' Buffer Area
		<b>2,477 SF</b> impact to 200' Riverbank Wetlands
7.	Floodplain Impacts	Project limits are not in floodplain.
8.	Certified Vernal Pools	There are no certified vernal pools within the project limits.
9.	Threatened or Endangered Species (NHESP)	There are no Priority Habitats within the project limits.
10.	Areas of Critical Environmental Concern (ACEC)	There are no ACEC's within the project limits.
11.	National Register Districts	There are no National Register Districts within the project limits.
12.	MassDEP Approved Wellhead Protection Area (Zone II)	<b>35,652 SF</b> impact to MassDEP Approved Wellhead Protection Areas.
13.	Hazardous Waste Sites	There are no Hazardous Materials Sites within our project limits.
14.	Construction Impacts	Area impacted = 2,240' X 30' = <b>67,200 SF (1.5 Ac)</b>
15.	Visual Impacts	Plan minimizes visual impact from adjacent residential properties.
16.	Public Utilities	Potential impact within Gas Easement (Algonquin): Area of unpaved equestrian trail alignment within easement = 500'X8' = <b>4,000 SF.</b>
17.	Public Facilities Connections	Phase 10 improves non-motorized connections along UCT corridor including local employment, schools, and recreational facilities.
18.	Environmental Justice	There are no Environmental Justice areas within our project limits.
19.	Construction/Design Cost	<b>TBD</b>
20.	Operations and Maintenance	Recommend a written operations and maintenance plan and an emergency response plan.

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