

Towpaths to Trails

Also Using Railroads and Utilities

How the Old Canal Towpath and Other Rights of Way
Can Bridge Some Gaps in Regional Multi-Use Trails



Presentation to the Quarterly Meeting

Middlesex Canal Association

18 Feb 2024

Doug Chandler
MCA Proprietor
& Chelmsford Rep to
Middlesex Canal Commission



Agenda

- Introduction – multi-use trails
- Why use existing ROWs?
 - Middlesex Canal Towpath
 - Billerica Branch Rail-with-Trail
 - Power and Gas Lines
- Bay Circuit Trail and Local Gaps
- Current Projects
 1. Riverneck Road proposal aka Thoreau Towpath
 2. Lowell Heritage Park proposal
 3. Concord River Greenway link
- Canal Considerations and Costs
- Long Term, This Year, Current Work
- Conclusion

Refs

Towpath Topics, various

BayCircuit.org

RailstoTrails.org/towpaths

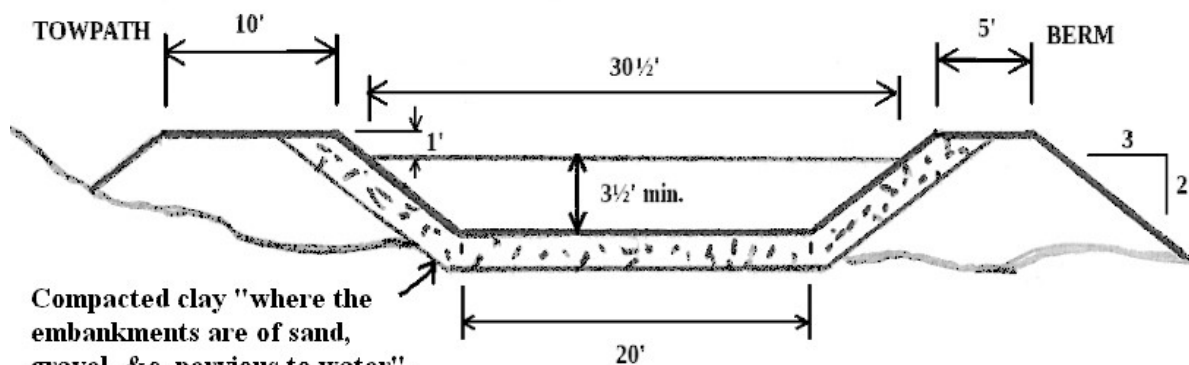
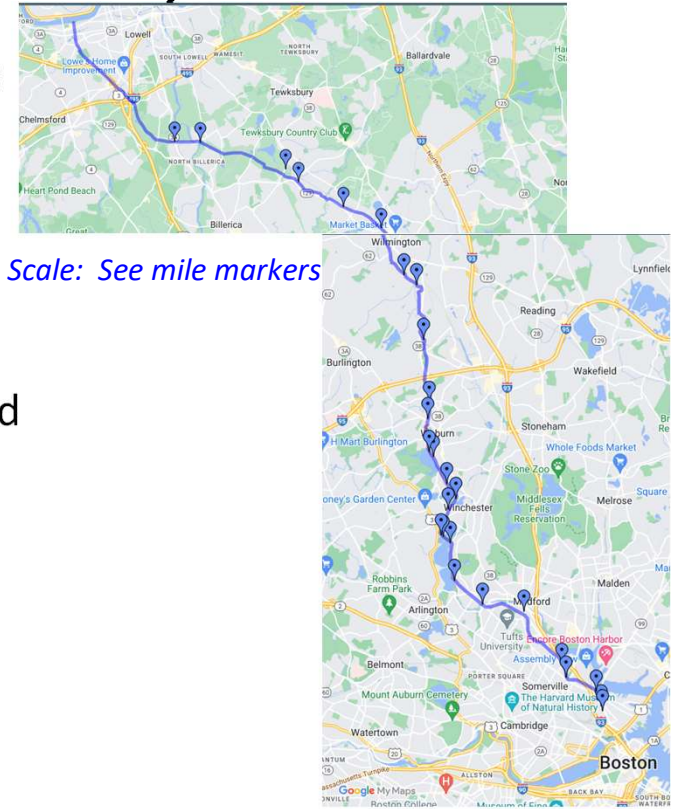
Wikipedia.org/towpaths

Introduction

- Multi-use trails are good for people of all exercise levels from cyclists, wheel chairs, runners, joggers, walkers, and school children to baby carriages
- Why are abandoned railroads favorites for bike paths?
 - Smooth
 - Level
 - Wide
 - Out of motor traffic
- Canal towpaths have all the same features!
- Powerline and pipeline Rights of Way (ROWs) share most of these features
- This talk explores how the Middlesex Canal may fit into regional multi-use trail plans
 - Mutually benefiting canal awareness and access
 - Preserving canal borders, by active open space use, from encroachment by development
 - As well as local biking, walking, and running
- MCA members are currently championing three short trail ideas that will link up gaps in the existing regional trail network
 - An informal group calls itself FORTT = Friends of Regional Trails and Towpaths
 - Jay Breen, Marlies Henderson, Andrew Jennings, Bill Kuttner, Chris Clark, and Doug Chandler

Review: Middlesex Canal Towpath

- Connected New Hampshire barge traffic at Middlesex Village (then Chelmsford) 27 miles to Charles River at Boston
 - Avoided Pawtucket Falls and transferring goods to ocean-going ships to get from Newburyport to Boston
 - Made the Lowell Mills economically possible
 - Passed through 9 towns, Lowell to Boston
 - Active 1803-1853, until eclipsed by faster steam railroad
- Some miles of canal, berm, and towpath remain
- Towpath makes a great bike path
 - 10 feet wide, totally flat and nearly level
 - Woburn is starting a multi-use trail on MC towpath



Compacted clay "where the embankments are of sand, gravel, &c. pervious to water", 2' minimum thickness.

CANAL SECTION

Revised 2014, J.Breen. See p. 19, /The Middlesex Canal/ by Lewis Lawrence.



Other Rights of Way

Billerica Branch Railroad



Power and Gas lines



Bay Circuit Trail (BCT) Overview

Bay Circuit Trail

"The Bay Circuit Trail and Greenway or Bay Circuit is a Massachusetts rail trail and greenway connecting the outlying suburbs of Boston from Plum Island in Newburyport to Kingston Bay in Duxbury, a distance of 200 miles."

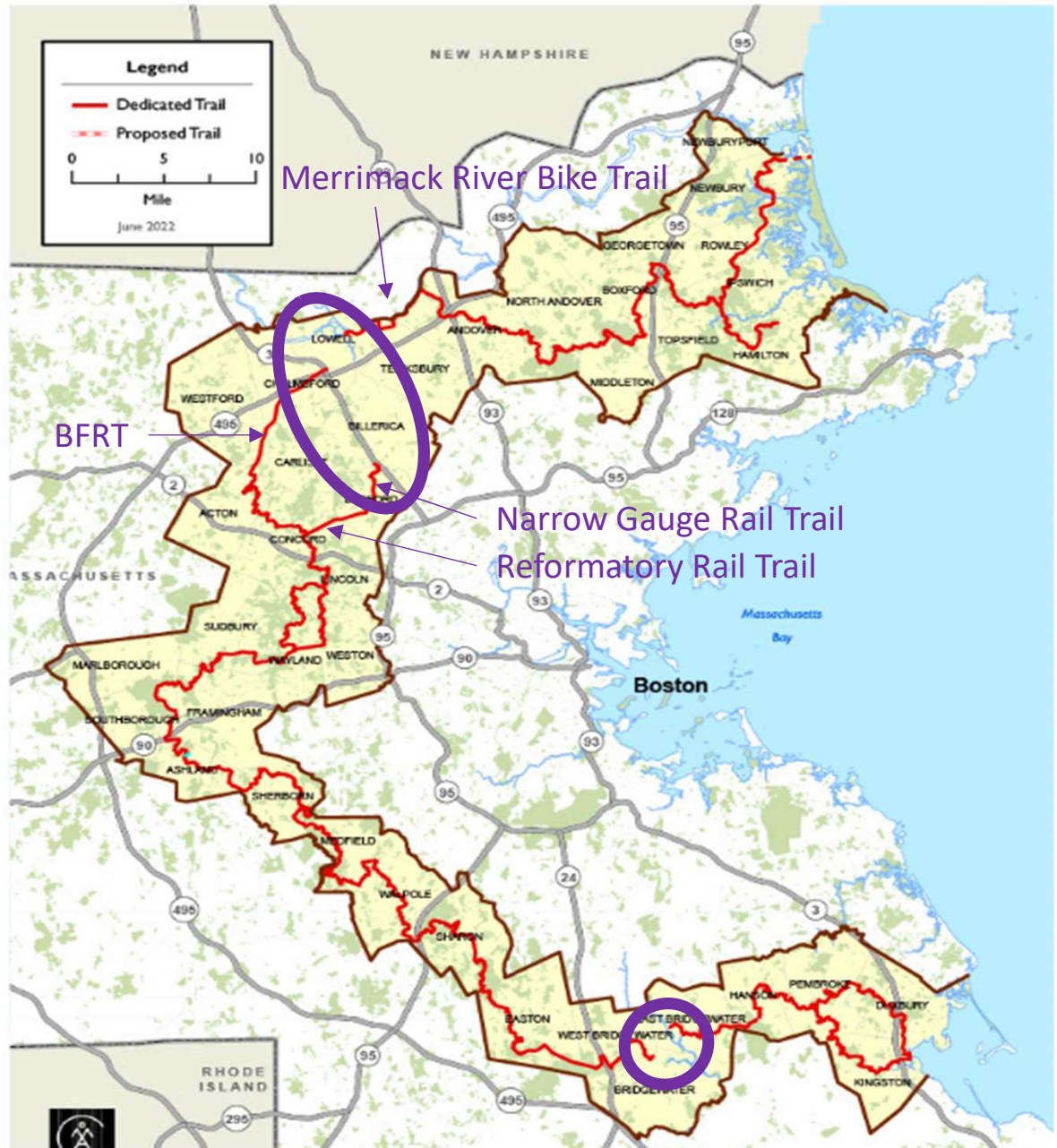
[Wikipedia](#)

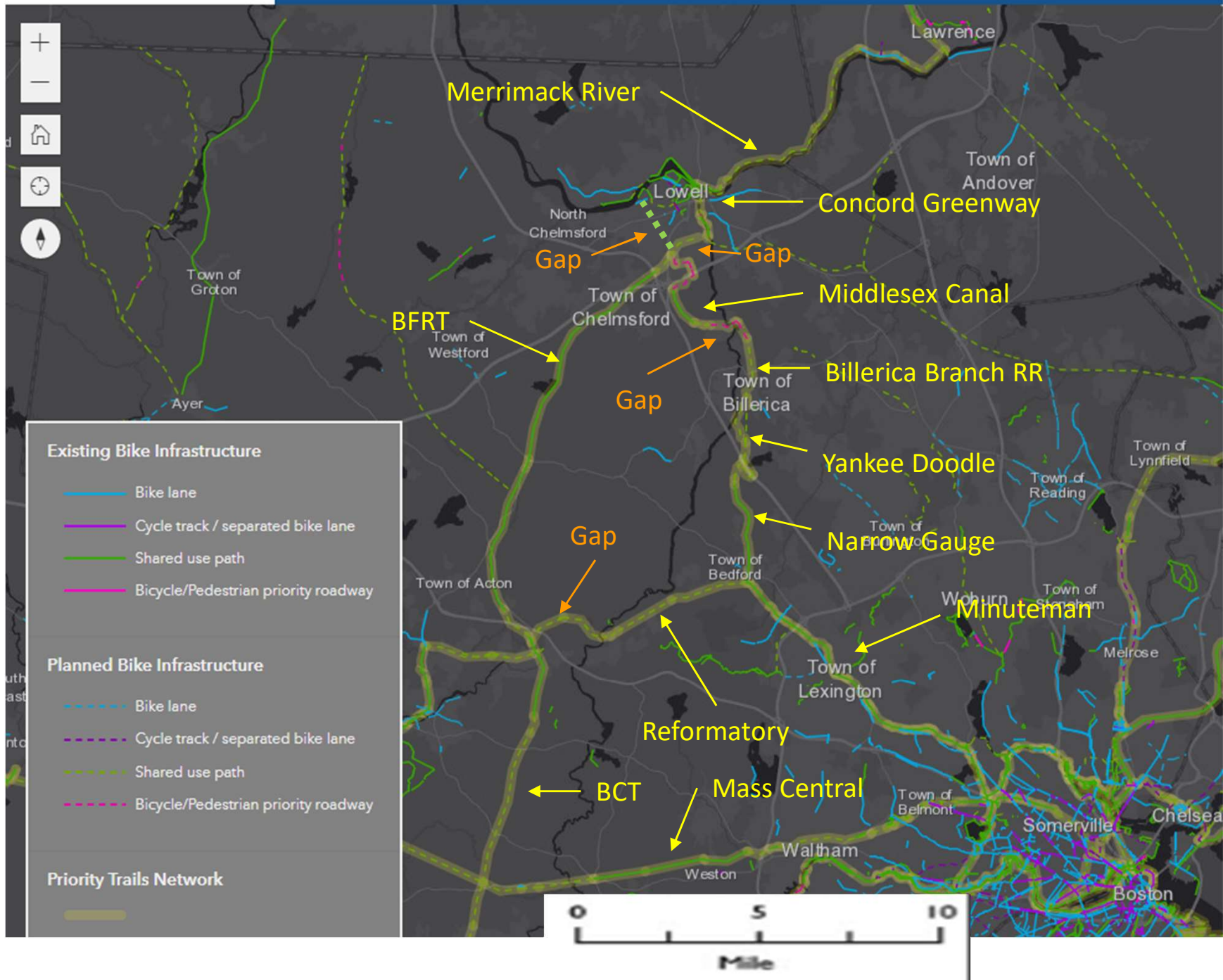
In over 200 miles of trails assembled from trails in 37 towns linked together, there are some gaps left to complete the circuit.

Greater Lowell and Bridgewater are the notable gaps.

Note east & west branches north of Concord

<https://www.baycircuit.org/>





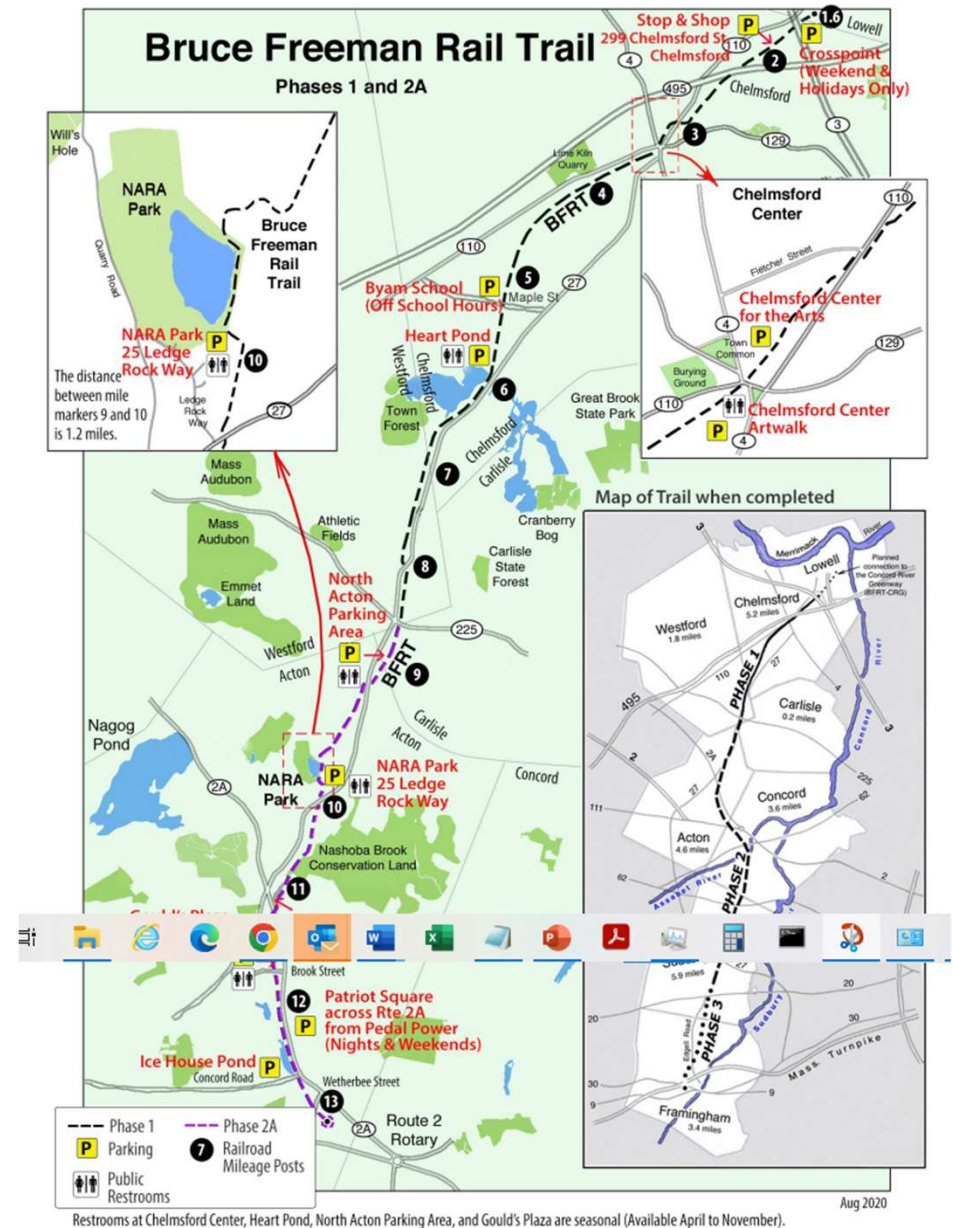
First Project

“Thoreau Towpath” or “Riverneck Road”

- 5.7 miles connecting the open ends of
 - BCT West Branch = Bruce Freeman Rail Trail (BFRT) in Chelmsford
 - BCT East Branch = Yankee Doodle (YD) Rail Trail in Billerica
- Using the historic canal towpath, old RR, woods, & streets

Bruce Freeman Rail Trail (BFRT)

- Acton/Carlisle/Westford/Chelmsford section of the BCT west
- Starts near Concord rotary
- Perfect trail all the way:
 - good surface
 - guard rails wherever needed
 - crossing signs on small roads
 - automatic flashing signs on major roads
 - bridge over 2A in Acton
 - tunnels under 495 & 3 at Lowell
- Formal BFRT ends just into Lowell at Cross Point (Wang) Tower
- Extension in progress and passable up to behind Target just off the Connector
- Gap getting to Concord River Greenway and thence BCT to Newburyport



Scale: See mile markers

Bruce Freeman Rail Trail (BFRT)



Fall trail in Acton



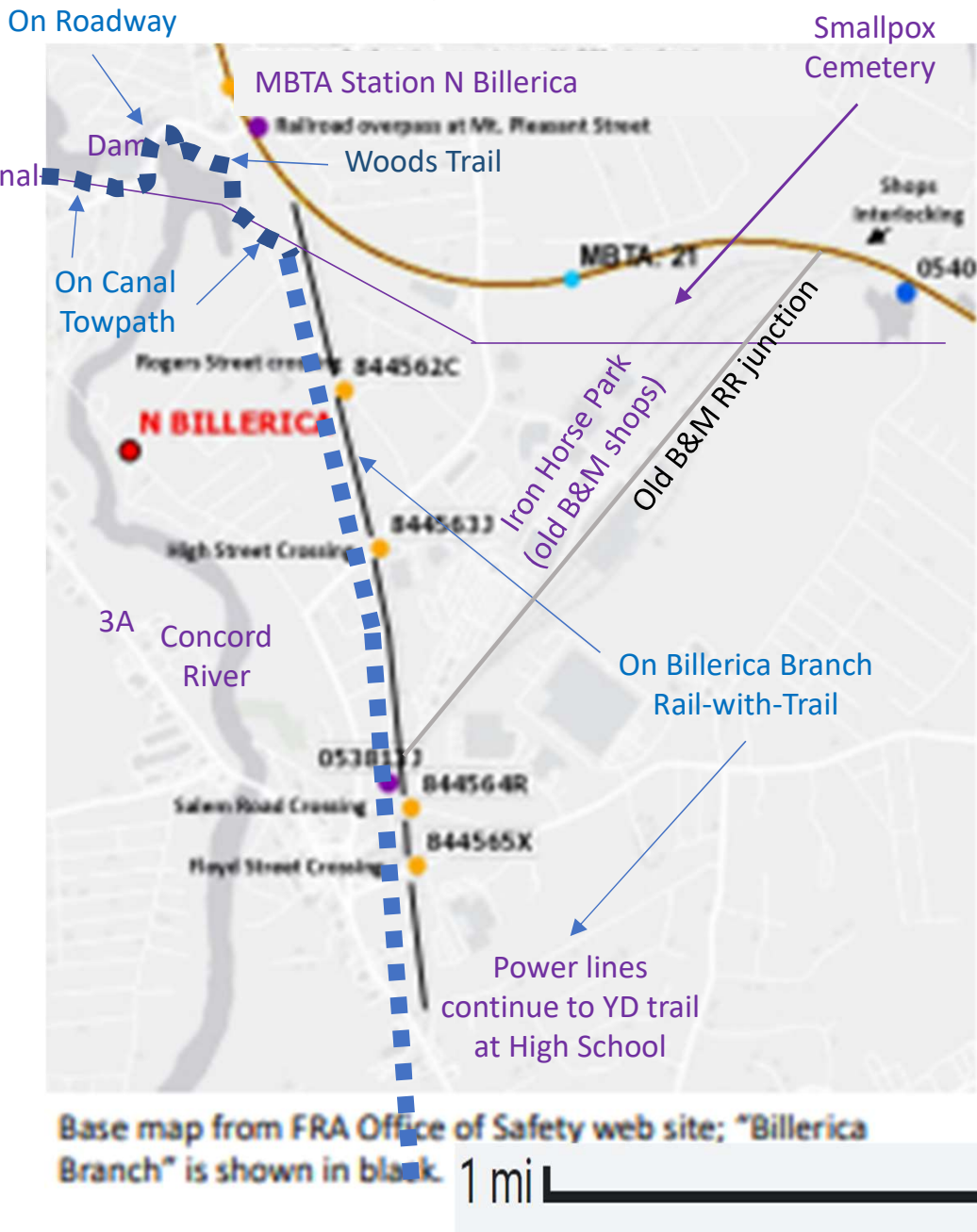
Westford DPW workers Jacob Rowe and Rick Savory removed a downed tree that was blocking the trail after a late summer storm.

Pix from <https://brucefreemanrailtrail.org/>



South section: via “Billerica Branch” of old B&M RR

Originally the Billerica & Bedford Narrow Gauge RR



- The line is a little less than 2 miles long, extending from a switch off the inbound track of the Lowell Line south of Mt. Pleasant street to almost Heritage Road.
- There are no rail served industries on the line.
- A connection to tracks in Iron Horse Park is located north of Salem Road.
- For this presentation I have described this line as the “Billerica Branch” because
 - That was the name given to the branch in a Boston and Maine employee timetable
 - It avoids confusion with the existing “Narrow Gauge Rail Trail” in Bedford
 - It is a distinct project from the “Yankee Doodle Bike Path Phase 1” even though it is a logical addition to that project



From “MBTA’s Billerica Branch”, Presentation to Billerica's Open Space and Recreation Plan Committee”, 13Jan2023, Andrew Jennings

Typical Canal and Towpath

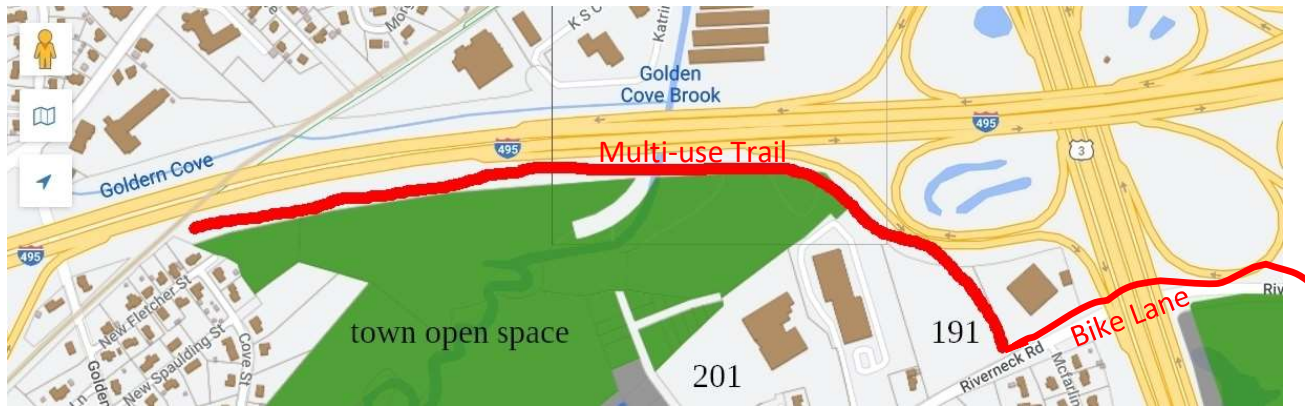
Canal St, East Chelmsford



North Section: via Road and Woods Crosses Rt 3 on Riverneck Road

Original Idea

- Connect to BFRT south of tunnel
- Run along highway right of way, far below traffic, like Yankee Doodle beside Route 3
- Easement at east side of 191 property to Riverneck Road
- Riverneck Road over Rt 3 and under Lowell Connector, to Middlesex Canal via Canal St, thence Yankee Doodle to Bedford



Alternate Idea

- Avoid dealing with MA DOT by using town open space and Water District road

Common Factors

- Public land ¾ mile from BFRT to highway ramp 495 to 3
- Need to squeeze between ramp and buildings and cross private land for last couple hundred yards



BFRT to Riverneck Road - Photos



BFRT Tunnel from
495E Right of Way
to NW



Off-Highway
Right of Way
to NE



River Meadow Brook,
Bridge Needed
to NW



Trail off End of
New Fletcher St
to W



Trail on Town
Open Space
to E



Possible Easement
at Riverneck Road
to N

Wide Enough for a Legal Bike Path



Before you say it

- Of course this is a long term plan - maybe another decade with work by many groups:
 - Easement/permission from MA DOT below 495 won't be trivial
 - nor for town open space "protected wetland"
 - River Meadow Brook needs a real bridge, not culvert
 - Riverneck Road needs painting & maybe widening for bike lane
 - Town Engineer says it is wide enough to do this
 - Water Districts may want to protect well field south of Canal St, but
 - Canal St seems to be a town road and multi-use trail (per MassDOT)
 - Middlesex Canal Association has two easements already from owners
 - Canal towpath between Canal St and 3A is seasonal, very boggy
 - About a half mile needs a boardwalk (or tons of fill)
 - Bridge by the Concord dam is dangerous for cars, much less bikers
 - Connection from dam to Billerica Branch RR needs easement
 - Billerica Branch RR track and power line south to Billerica High is good for trail, but still MBTA owned
- However, decades of patient work in steps is how we got BFRT, BCT, Yankee Doodle, Middlesex Canal Museum, etc

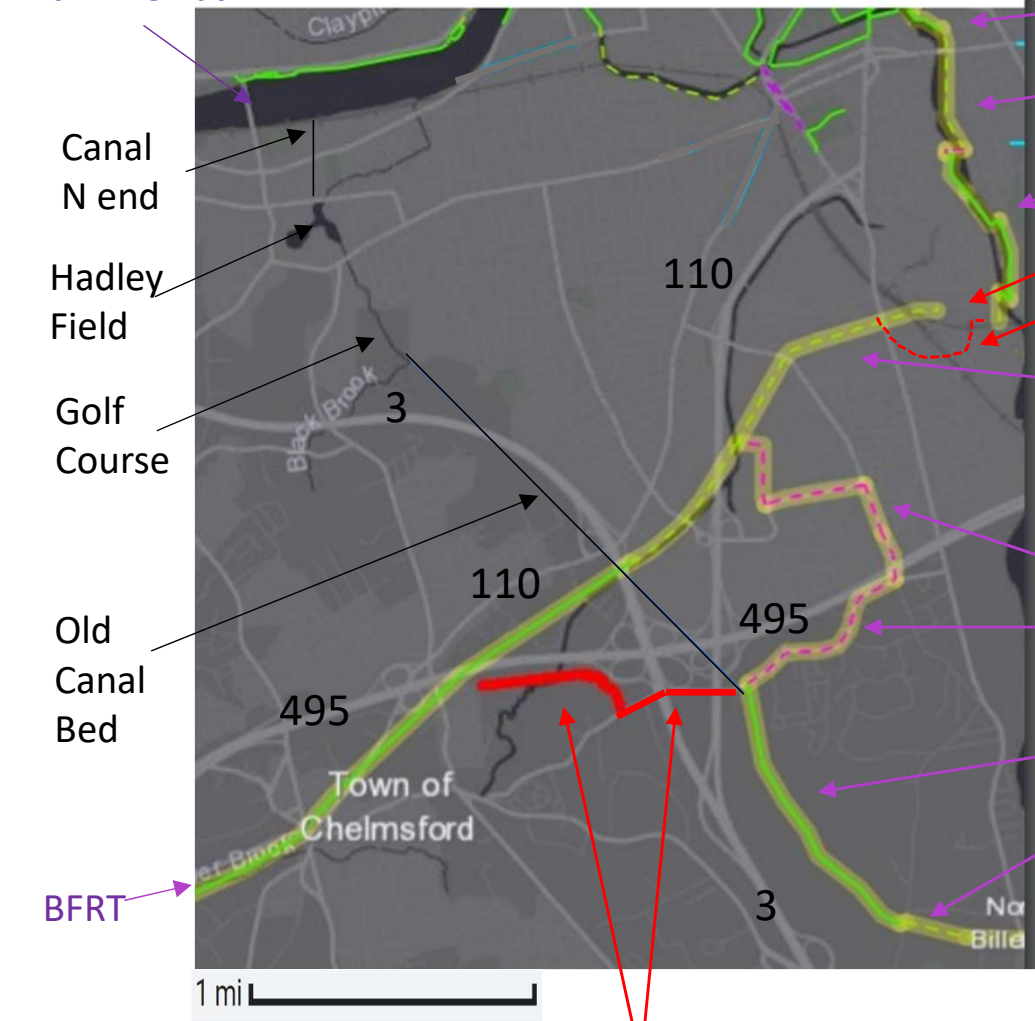
Second Project

Lowell Middlesex Canal Heritage Park and Trail

- Also a “Thoreau Towpath”
- 2.7 miles connecting the ends of
 - BCT West Branch = Bruce Freeman Rail Trail (BFRT) in Lowell
 - Esplanade Trail at Rourke Bridge, thence Merrimack River Trail and other BCTs to Newburyport
- Using the old canal towpath, old RR, woods, and streets

Area Trails and Plans – North End

New Rourke Bridge with Bike Path
 Merrimack River Bike Trail to Lawrence & Newburyport, with bike lane in new 110 project
 To BCT to Newburyport



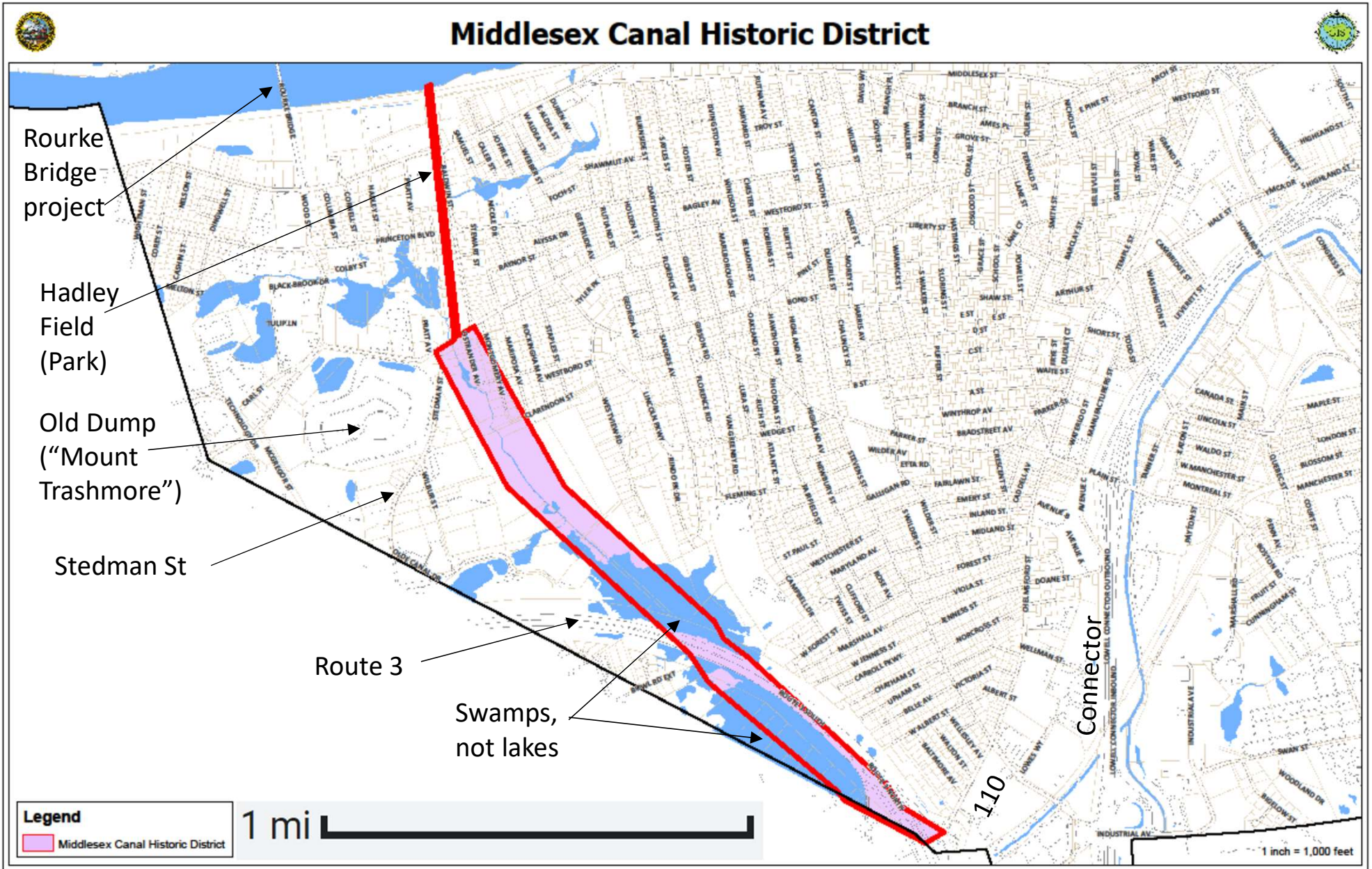
Concord River Greenway
 New Trail Bridge
 Railroad-yard gap
 Pete Sutton & Lowell idea
 MassDOT Plan
 ~ 1 mile of city streets + crossing active rail yard
 Old MassDOT Plan
 ~ 1 mile of city streets + 1 mile of busy country road
 Canal St
 Middlesex Canal
 To Yankee Doodle Trail

Riverneck Idea
 ~ 1 mile of woods trail + ½ mile of bike lane

Trails Legend

- Existing
- In progress
- Proposed
- Background

Continuation of BFR T and Canal Towpath Trail Through Lowell to Merrimack River



Origin, Terrain, and Funding

- Some members of the Middlesex Canal Commission and Association are helping to plan a park, nature trail, and multi-use path to commemorate the Middlesex Canal section in Lowell
- Terrain
 - Merrimack end of the old canal is obliterated by development
 - South of that, canal remains as a water hazard on the golf course
 - South of golf course is a quarter mile of the best preserved canal in 27 miles, with water and towpath intact
 - In the middle, the canal is now under swamps and Route 3
 - To east, there are two Lowell schools that would benefit from nature trail and shortcuts for neighborhood kids
 - South of the swamp is excellent ROW for a multi-use path to 110
 - Just across 110 is the Cross Point end of BFRT
- Funding would be from federal and state grants
- Following discussion proceeds S to N, easy to hard

Easy Trail: Via Pipeline & Powerline, BFRT/110 to Schools = 0.7 miles



Starts just across the Cross Point parking lot from east end of BFRT (old Middlesex Canal route)

Pipeline (west route):

OK as is for walking/running or mountain bike

Six 1-2 foot stream jumps

Enter from Alpine Butcher

Powerline (east route):

Flat and level but overgrown

Enter behind brick pump house

Paths overlap in some places

Either one is almost as good as a railroad right of way to build on

Choice depends on easements and safety rules

All land owned by City or Electric Co

Pipeline & Powerline Route



Looking North from MA Route 110 at Cross Point Towers

Nat Grid Trail Policy



Recreational Trails Policy

Information for Towns and Organizations About
Recreational Trails in the Utility Corridors of
National Grid.

WRITTEN PERMISSION IS REQUIRED

In order to install, maintain, and operate electrical lines safely and reliably, National Grid must restrict activities within rights-of-way. Typically, the actual right-of-way extends a considerable distance beyond the company's actual facilities.

If the company agrees to allow specific activities within a right-of-way, a written agreement detailing the work to be done must be executed by the company and the applicant. The written agreement explains the specific activities that are allowed.

No activities on a right-of-way are allowed without written permission from the company.

TO CONTACT US

If you have additional questions, please call us at
508.389.9119

Extracts from
National Grid
Tri-fold pamphlet

National Grid operates a network of high and low voltage electrical transmission lines, and gas pipelines, throughout New England and New York.

These lines and utility corridors (also commonly referred to as rights-of-way) are a critical part of the region's electrical grid. To operate the grid in a safe and reliable manner, National Grid needs to manage its rights-of-way.

National Grid limits activities within the rights-of-way in order to protect the public and avoid damage to the electrical system.

Although rights-of-way are sometimes viewed as public lands, they are actually the private property of National Grid. National Grid evaluates proposals to use its utility corridors for recreational trails on a case-by-case basis.

The following guidelines will assist you in submitting a proposal for a recreational trail on a National Grid right-of-way.

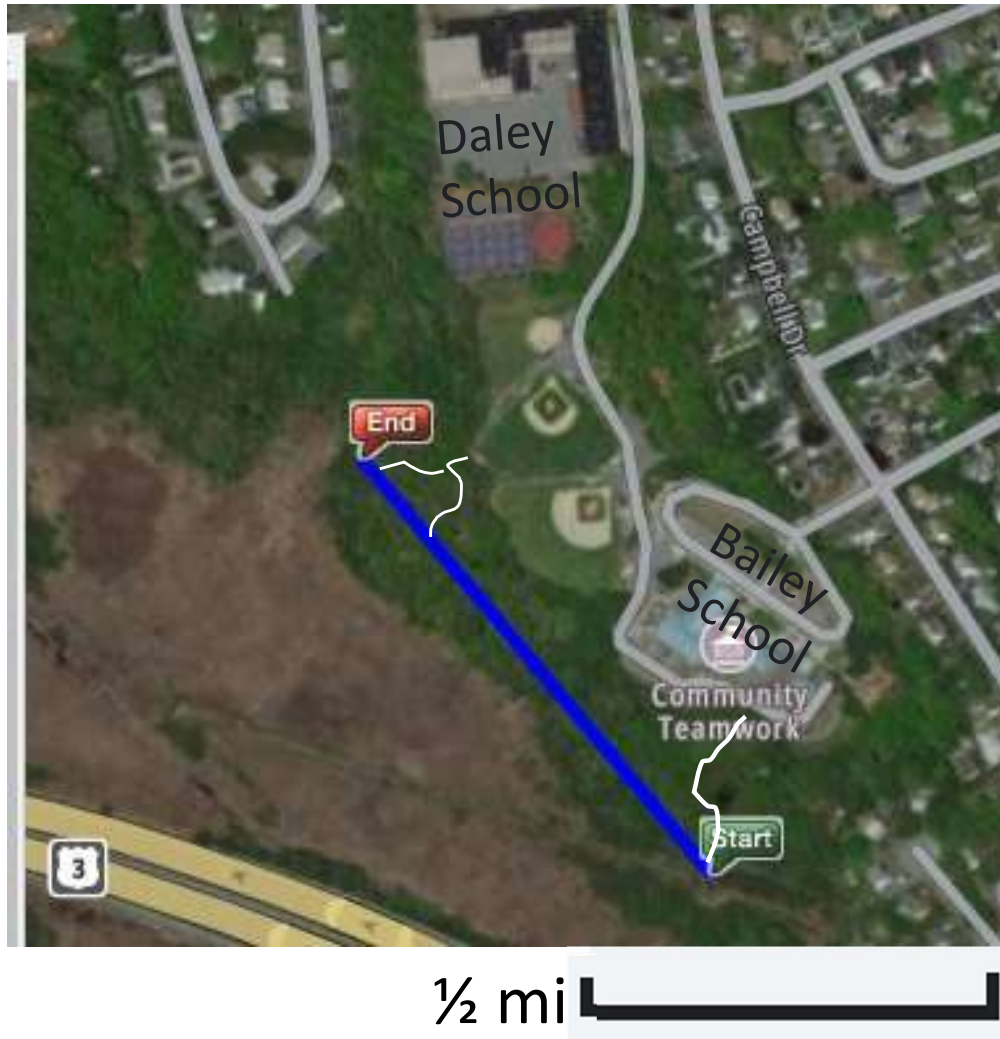
WHAT'S ALLOWED

Limited activities that do not interfere with the safe operation, maintenance and future use of the right-of-way may be permissible. To the extent that a proposed recreational trail can coexist on the right-of-way, we will consider it.

Typically walking, jogging, bicycling and similar uses may be acceptable. **No motorized vehicles will be allowed**, except for wheelchairs or other devices which allow handicapped people access to the recreational trail.

For safety reasons or to minimize the risk of damage that could cause power outages, we sometimes must decline requests for recreational trails.

Easy Park and Nature Trail: Swamp to Schools = 0.3 miles



Flat woods:

- Above the waterline
- Downhill from schools and ball fields
- About 1000x200 feet (5 acres) of flat land
- Good for nature trail, park, picnic tables, etc
- Well-worn easy paths already
 - “Start” to Bailey School
 - “End” to ball fields

All land in this segment is owned by the City of Lowell

Park & Nature Trail



Five acres of flat land down hill from the schools

Hard Trail: Schools to Local Streets or Canal = 0.3 miles



East side - Hard to find a good route that is:

- Above the waterline
- Flat, smooth, and gentle enough for bike path

West side – 3 possible not perfect routes:

- #1 to Westview
- #2 to canal
- #3 side trip to canal

Land owned by:

- City
- Eastern Salt Co
- a few private owners

Schools to Golf Course

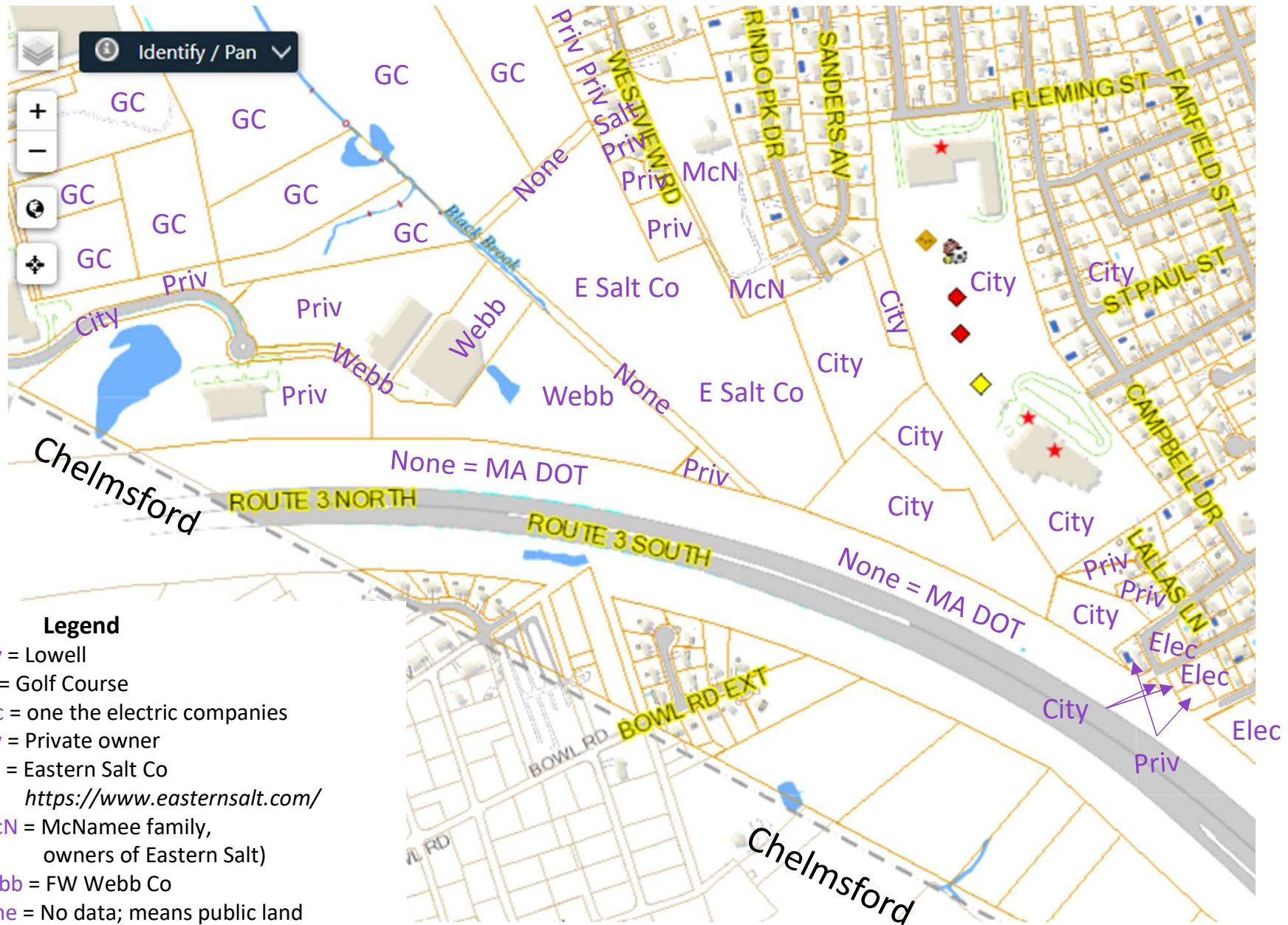


Typical Steep and Rocky



Typical Wet Areas

Land Ownership: Lowell Assessor "GIS" Map



1/2 mi

Northern End Options – Schools to Bridge ~1.7 miles

Rourke
Bridge
Project
with
bike
lanes



Not as easy as other sections
 - At least 4 options,
 none of them perfect
 - Mostly residential streets
 - Solid blue is most likely route

Canal route
now buried

Baldwin St

Canal visible

Old Dump

Canal visible
on golf course

¼ mile of beautiful canal

Westford Street

Westview Road

Two “paper streets”

Swampy and would need
easement from Eastern Salt
Daley School baseball field

Scale: See mile marker

Original Canal with Towpath near Golf Course



Canal South from Westford St



Canal North on Golf Course

Towpath
Side



“Paper street” to Golf Course



Canal South of Golf Course

Historic Link to Thoreau

- In 1839 Henry David Thoreau took a trip in a small dory from Concord MA to the Merrimac River and wrote a book * about his travels.
- An ardent naturalist, he preferred the natural Concord River over the new canal, but he noted:

"in the lapse of ages, Nature will recover . . . and gradually plant fit shrubs and flowers along its borders. Already the kingfisher sat upon a pine over the water, and the bream and pickerel swam below. Thus all works pass directly out of the hands of the architect into the hands of Nature, to be perfected."
- One of the best sections of the canal on which Thoreau journeyed in 1839 still exists in Lowell, mellowed back to nature by the passage of two centuries of benign neglect.
- Lowell's proposed MC Heritage Park will memorialize this inspiring author, his trip, and the low cost water transport that made Lowell competitive with Manchester England.

Summary

- This project is just early concept work
- Trail from BFRT to schools looks *relatively* easy
 - Includes safe routes to school, a park, and a nature trail
- Harder from schools to city streets or canal
 - Some engineering needed for wet and steep parts
- Three options for northern end
 - Two include a quarter mile of original canal
- Most land is owned by city or the electric companies
 - A few privately owned parcels may need easement
 - Canal routes need an easement from Eastern Salt Co.
 - Encouraging news: This is a family owned company with national HQ on Middle St in downtown Lowell
- More work to be done

Third Project

BFRT Lowell Extension

- 2.7 miles connecting
 - North end of the BFRT at Cross Point
 - Concord River Greenway, thence Merrimack River Trail and BCTs to Newburyport
- Via old RR, quiet streets, and city park

Concord River Greenway

← North

~1.5 mi

South →



The Concord River Greenway fills a missing link in the Bay Circuit Trail and Greenway, which is a 200-mile network of trails around greater Boston.



A long-term vision for the Greenway is to connect to the Bruce Freeman Rail Trail (BFRT), which currently ends in Chelmsford at a tunnel under Route 3 (at CrossPoint Towers). BFRT will eventually connect Lowell to Framingham through this recreational trail corridor (25 miles total).

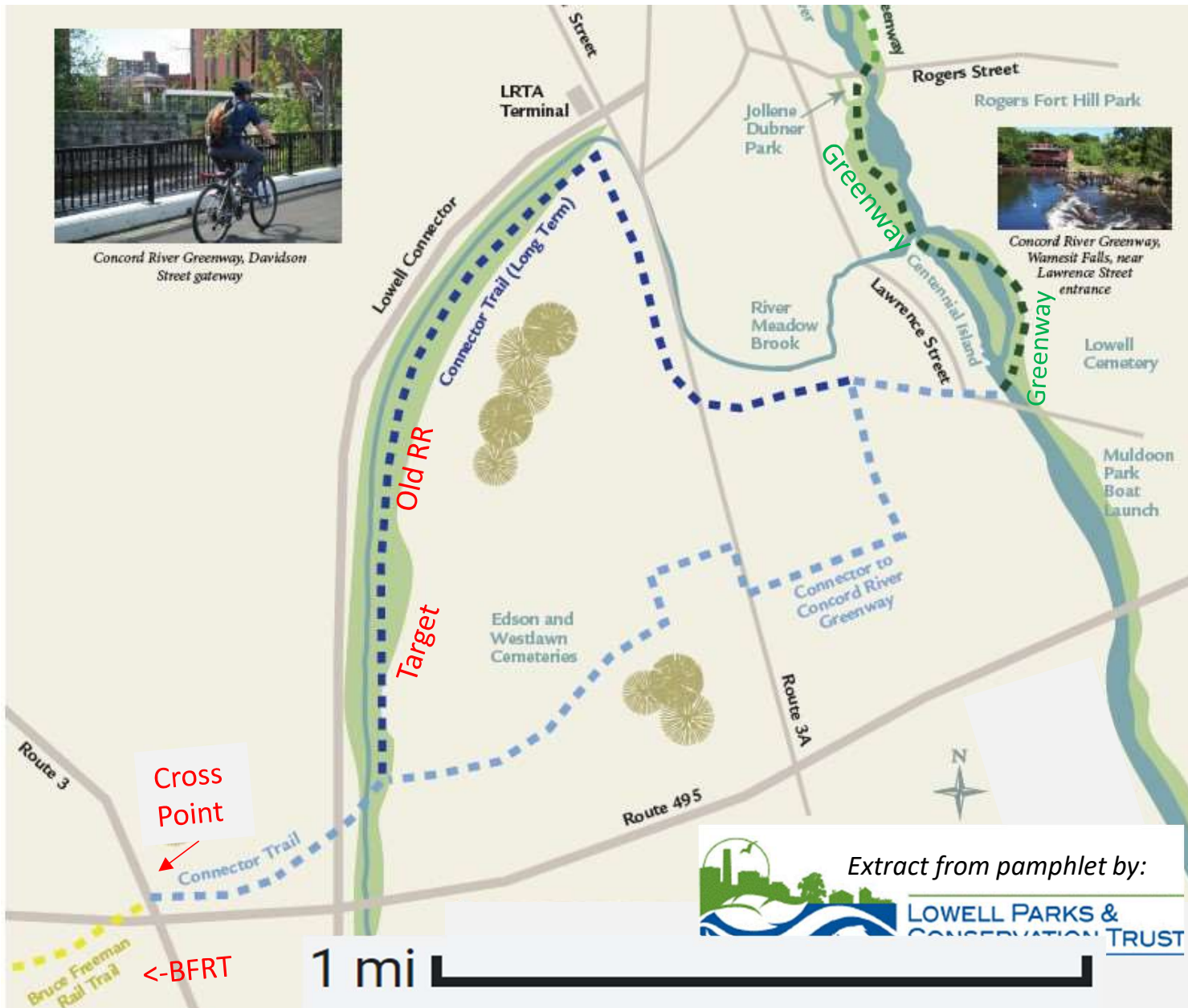
The Connector Trail will extend the BFRT into Lowell, through CrossPoint and under the Lowell Connector, with construction scheduled in 2022.



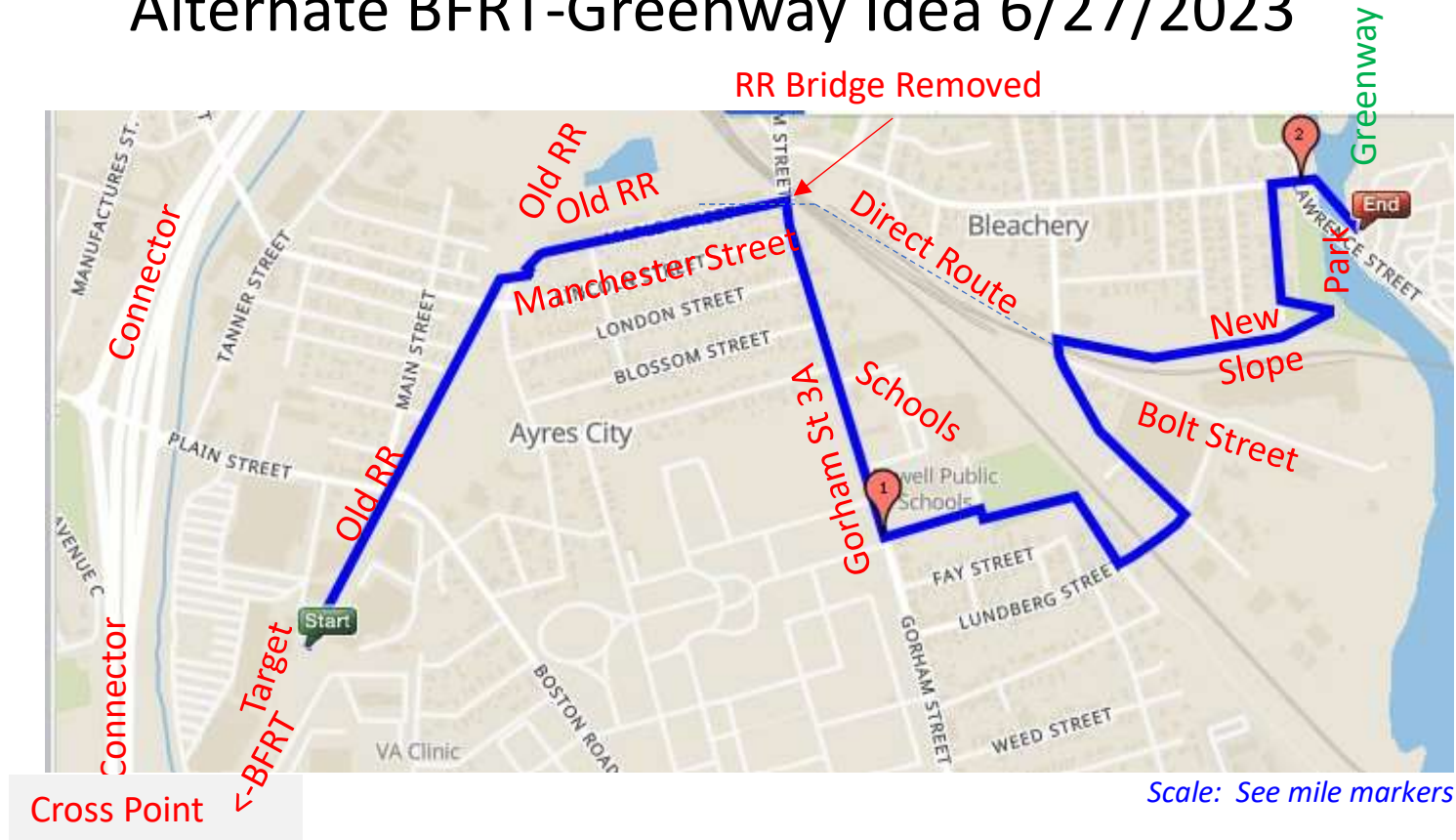
Extract from pamphlet by:

LOWELL PARKS & CONSERVATION TRUST

LP&RCT BFRT Connection Concept



Alternate BFRT-Greenway Idea 6/27/2023



On June 27 2023, a group of us from MCA met at a school on Rt 3A in South Lowell to discuss the route between BFRT and Concord River Greenway with:

- The City Engineer of Lowell and her staff
- Peter Sutton, Bicycle and Pedestrian Program Coordinator, MassDOT

We explored a route that followed the old railroad northeast to 3A, then around two schools and a playground, over the active railroad yard on a neighborhood bridge, then through quiet streets to the Lawrence St Bridge, southern end of the Greenway.

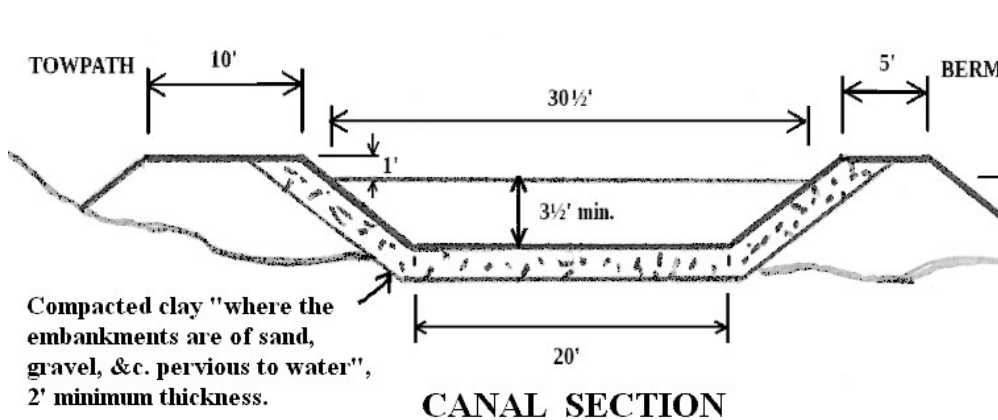
Parks & Rec and the City are actively working on this connection, so we are just working with MassDOT to suggest another route for consideration.

Summary and Conclusions

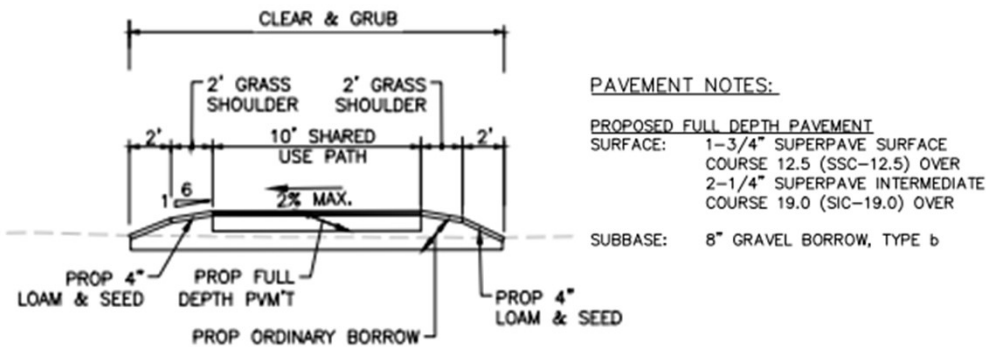
At Last

What's This Mean to our canal?

- Opportunity for outside funding to improve and preserve the towpath as a trail, fix swampy areas
- 10-foot wide towpath is basically the trail substrate



Revised 2014, J.Breen. See p. 19, /The Middlesex Canal/ by Lewis Lawrence.



Typical Rail Trail (Woburn)

- Rough estimate is ~ \$2M/mile, from recent Woburn Rail Trail study <https://www.woburnma.gov/wp-content/uploads/2022/12/Shared-Use-Path-Feasibility-Study-Canal-and-RR-ROW-2022.pdf>.

Why is This Important?

- Multi-use trails serve bikers, walkers, runners
- even commuters and school kids
- Safe alternative routes, separating cars and bikes
- Not just point-point lines, but a network of connected trails so users can get on and off where needed
- Our local trails, existing and proposed, are part of the MassDOT Master Plan Priority List for funding to expand the Active Transportation trails network
- The biggest remaining gap in the Eastern Mass trail system is the Greater Lowell area

Conclusion

- There are many interconnecting projects, past-present-future, to preserve ROWs and provide safe scenic trails for bikers, strollers, walkers, joggers, and runners
- The Middlesex Canal towpath can provide the missing link to re-unite the two branches of the Bay Circuit Trail on their way between Duxbury and Plum Island
- Like the museum, nothing done right is cheap
 - Basic trail to modern standards costs over \$2M/mile
- Years of work is needed to agitate for the federal funding needed, same as we did for the museum
- Last year's critical opportunities were:
 - Riverneck Road easement to get around 495 and 3 = pending
 - Inclusion in MassDOT and NMCOG plans = done