



Ulster County Rail Trail Project: *Ashokan Rail Trail*



**NYS County Highway
Superintendents
Association, Inc.**

January 23, 2019 – 3-4 PM
The Saratoga Hilton
Saratoga Springs New York



**Barton
& Loguidice**

BROOKS & BROOKS, P.C.
SURVEYING, PLANNING, GIS

Ashokan Rail Trail Project

Introduction and Project Background

*Chris White, Deputy Director of Planning
Ulster County*

Trail Design

*Thomas Baird, P.E., Associate,
Barton & Loguidice, D.P.C.*



**Barton
& Loguidice**

BROOKS & BROOKS, P.C.
SURVEYING, PLANNING, GIS



Ashokan Rail Trail Project Introduction and Project Background

- ❖ Non-motorized, fully-accessible recreational trail for hiking, bicycling, running, and winter activities
- ❖ Planned for the northern edge of the Ashokan Reservoir from West Hurley to Boiceville (11.5 miles)
- ❖ Project will use the Ulster & Delaware (“U&D”) Corridor, which U.C. Legislature slated for conversion to trail



Ashokan Rail Trail Project Project History and Timeline

- 2012: County Executive Mike Hein proposed trail development
- 2013: Historic agreement with NYC DEP announced to facilitate and partially fund project (\$2.5 million plus trailheads)
- 2013: New York State awards \$2 million for project
- 2014: Feasibility Study begins; funded by OSI, WLC, DF
- 2014: County Legislature passes Res. No. 275 policy for “segmented rail-with-trail”
- 2015: Legislature passes Res. No 488 for compromise policy and authorizes *ART* project design

- 2016: Barton & Loguidice engineers start environmental work and preliminary trail design/ CMRR lease expires

12/2017: Construction start





Ashokan Rail Trail Project

Trail Agreement with NYC DEP

- ✓ Allows recreational trail along Ashokan Reservoir
- ✓ Protects County's perpetual railroad easement
- ✓ Provides \$2.5 Million in funding from NYC DEP
- ✓ NYC DEP funded public trailheads
- ✓ Requires unpaved trail surface/ prohibits horses
- ✓ Preserves hunting and fishing access to DEP lands



Ashokan Rail Trail Project

Project Goals and Expected Benefits

- Protect quality of drinking water supply
- Expand public recreational opportunities
- Promote increased tourism/ economic development
- Improve public health through active lifestyles
- Enhance quality of life
- Preserve and stabilize the historic U&D corridor
- Educate public on history and natural resources

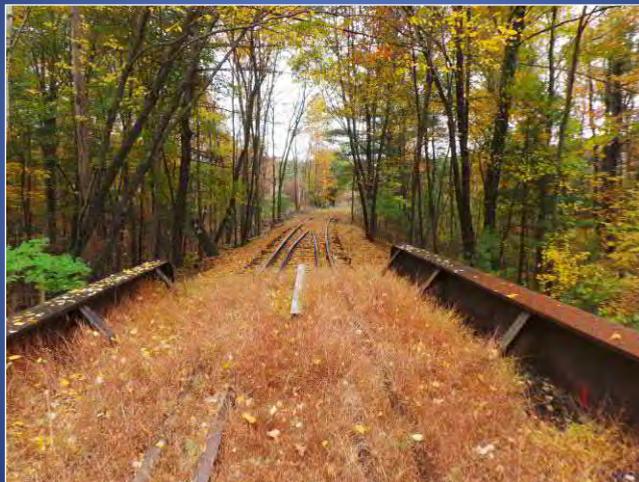


"We have a unique opportunity to create a world-class tourism destination and connect the Walkway Over the Hudson to the Ashokan Reservoir and Catskills."

- County Executive Mike Hein



Ashokan Rail Trail Project Views from the Corridor



Ashokan Rail Trail Project Views from the Corridor





Ashokan Rail Trail Project Views from the Corridor



Ashokan Rail Trail Project Views from the Corridor





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Ashokan Rail Trail Project Views from the Corridor

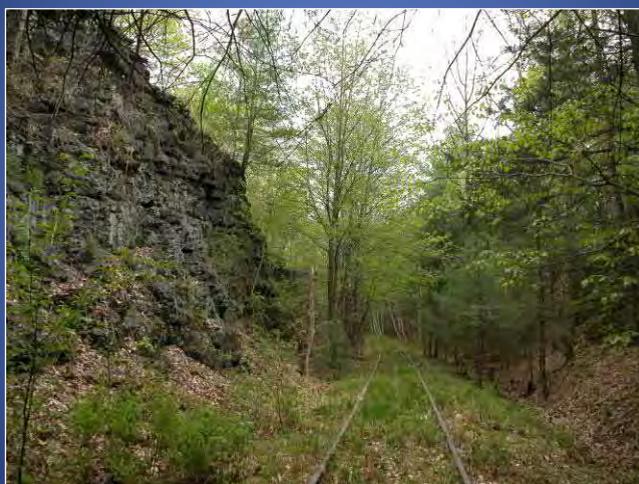




Ashokan Rail Trail Project Views from the Corridor



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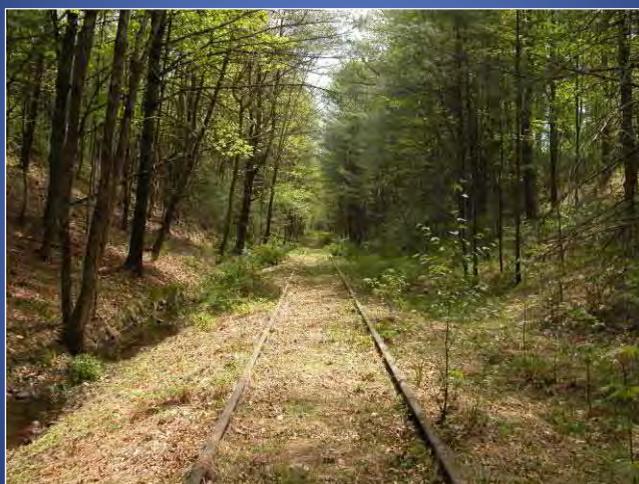




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*Ashokan Rail Trail Project
Views from the Corridor*



*Ashokan Rail Trail Project
Views from the Corridor*





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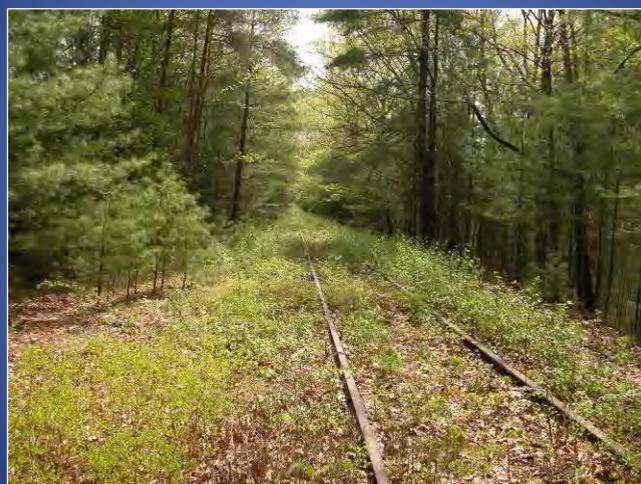




Ashokan Rail Trail Project Views from the Corridor



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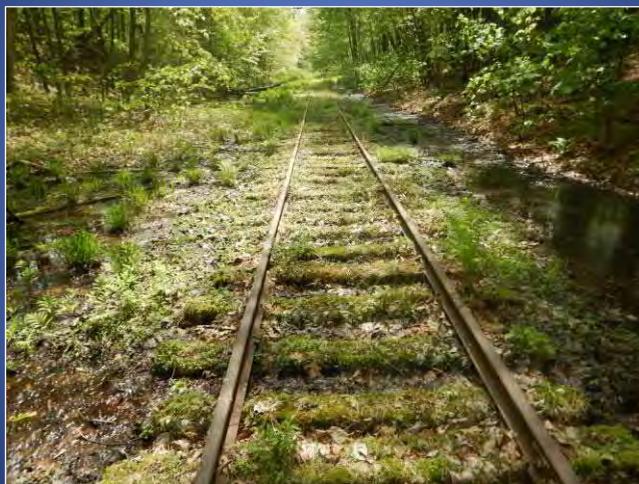




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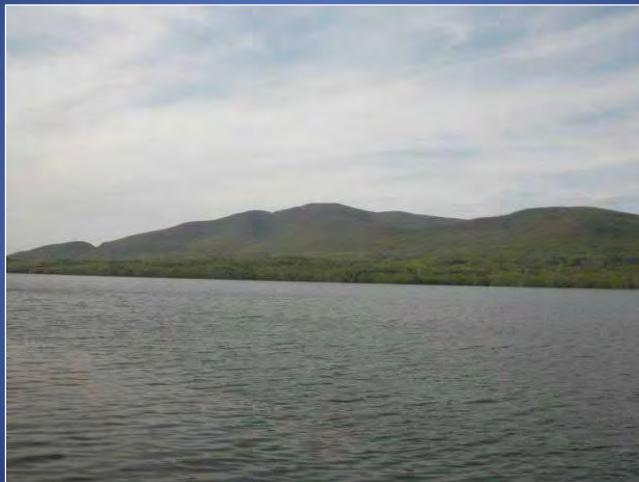


Ashokan Rail Trail Project Views from the Corridor





*Ashokan Rail Trail Project
Views from the Corridor*



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Views from the Corridor*





Ashokan Rail Trail Project Views from the Corridor



Ashokan Rail Trail Project Views from the Corridor

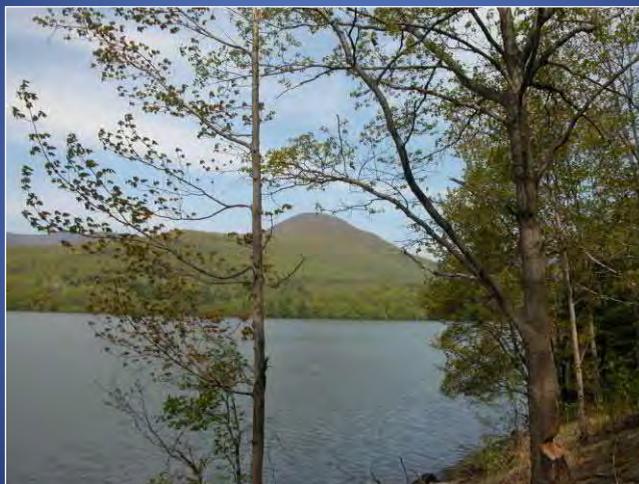




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Views from the Corridor*



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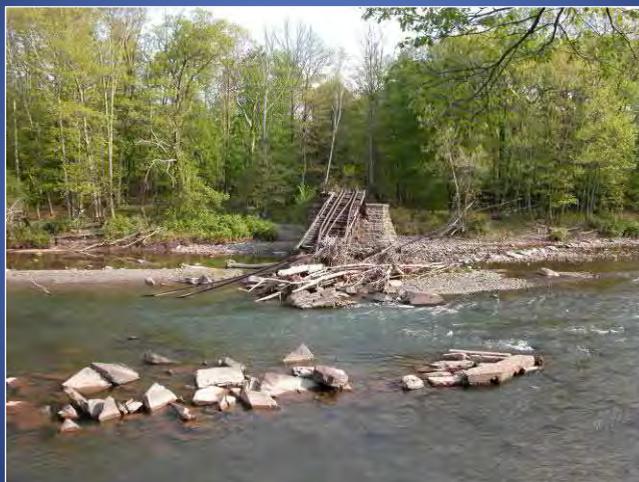




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Ashokan Rail Trail Project Views from the Corridor



Terminal Reservoirs

- Ashokan Reservoir
- Kensico Reservoir
- New Croton Reservoir



Figure 2: New York City Water Supply System



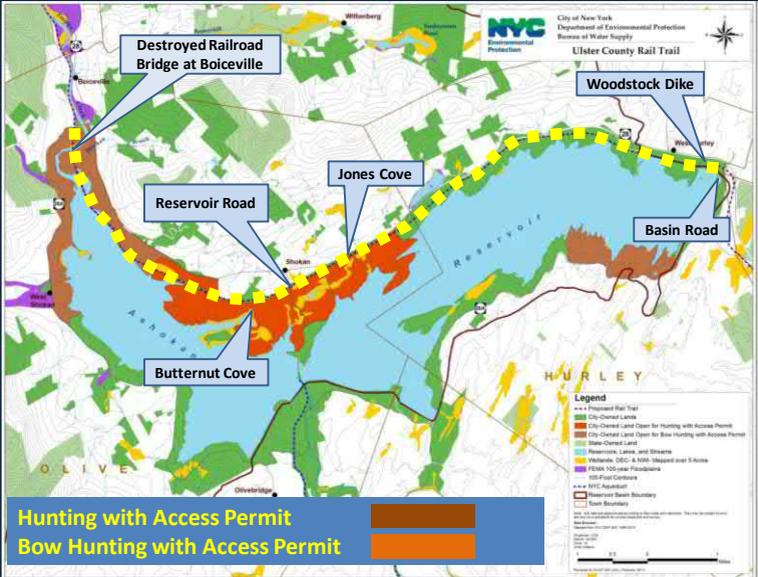
Ashokan Rail Trail Project Watershed & Ashokan Reservoir Facts



- NYC Water Supply is one of only 6 unfiltered water supplies in the United States.
- Ashokan Reservoir is a "terminal reservoir" for NYC and supplies 40% of City water supply.
- Balancing public access and public health is critical for the future.
- Major concern for water supply are pathogens and bacteria. Use restrictions are protective and compatible when recreation is well managed.



Ashokan Rail Trail Project Balancing Multiple Uses



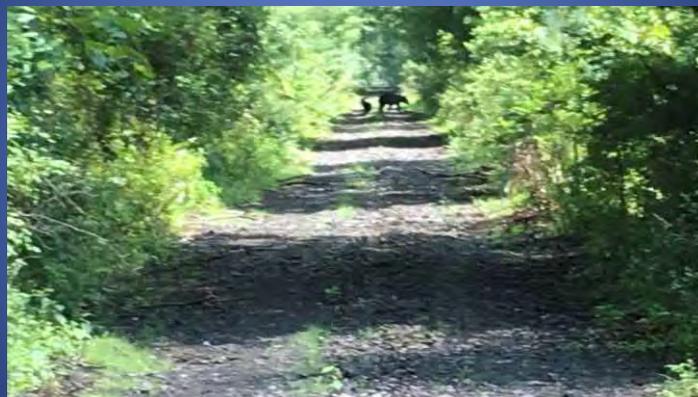
City of New York
Department of Environmental Protection
Bureau of Water Supply
Ulster County Rail Trail

Legend

- Proposed Rail Trail
- City-Owned Land
- City-Owned Land Open for Hunting with Access Permit
- City-Owned Land Open for Bow Hunting with Access Permit
- State-Owned Land
- Residential, Commercial, and Other
- Wildlife, DEC & NYS, Shaded over 3 Miles
- Forest, State, Private
- NY State
- NYC Aqueduct
- Reservoir Basin Boundary
- State Boundary
- Neighboring

Hunting with Access Permit (Dark Orange)

Bow Hunting with Access Permit (Light Orange)



Ashokan Rail Trail Project Documentation of Existing Conditions

Wildlife Present

- Black Bear
- Geese
- Duck
- Deer

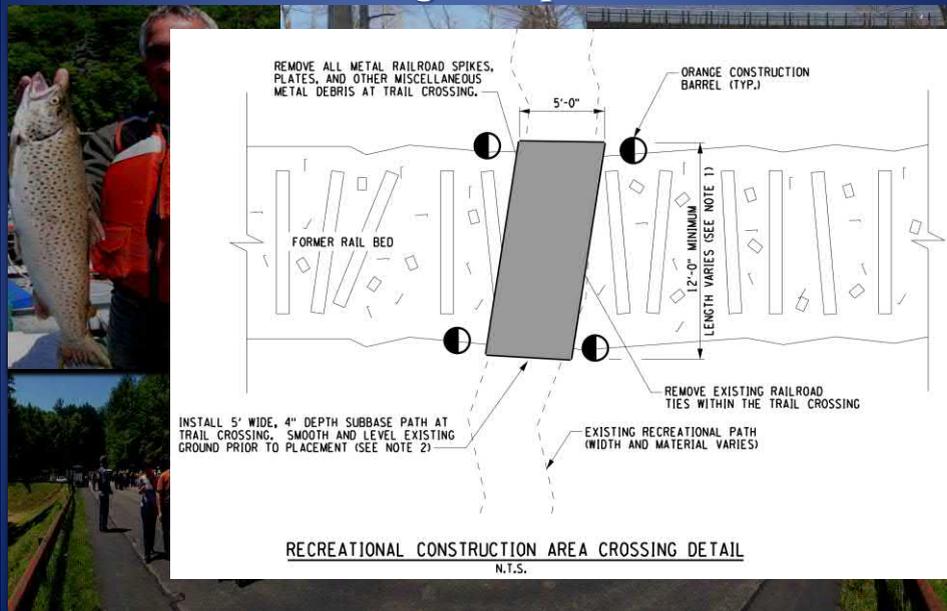


Ashokan Rail Trail Project Balancing Multiple Uses





Ashokan Rail Trail Project Balancing Multiple Uses



Ashokan Rail Trail Project



Ashokan Rail Trail Project Feasibility Study (2014-2015)

F.S. MAJOR FINDINGS:

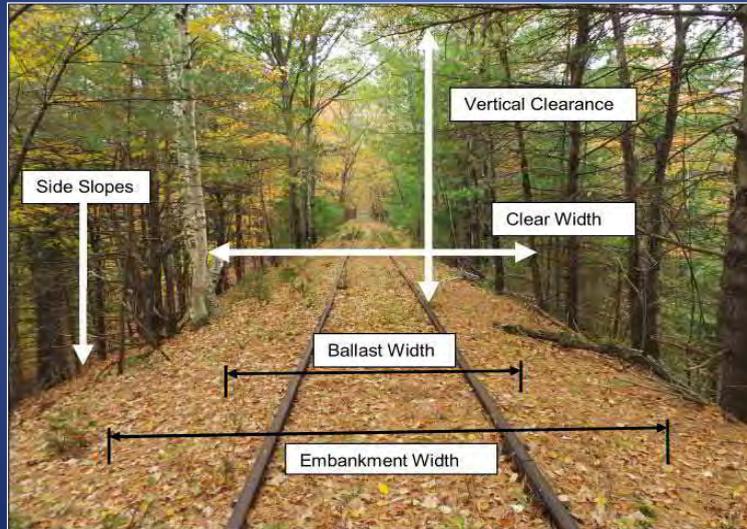
- Scenic views and incredible beauty along corridor offer opportunity for world-class destination
- Corridor is largely intact and conversion to trail is straightforward with exception of two large subprojects (Boiceville Trestle/ Butternut Culvert)
- Future trail has logical and feasible public access points on each end of the trail and at midpoint
- Budget for trail only approximately \$5 Million without two large subprojects (add \$3-3.5 M)
- Trail can be developed as a model for balancing watershed protection with public recreation



Ashokan Rail Trail Project Analysis of Corridor Segments



Ashokan Rail Trail Project Analysis of Corridor Geometry



Ashokan Rail Trail Project Documentation of Existing Conditions



Photo 1-1– Example of Remaining Railroad Track Infrastructure – Segment 1



Photo 1-2 – Existing Rail Infrastructure Conditions – Segment 1

Ashokan Rail Trail Project Documentation of Existing Conditions

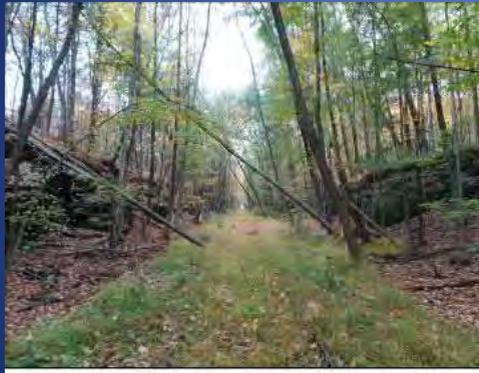


Photo 1-4 – Rock Cut Section



Photo 1-5
Rock Slide in Segment 1

Ashokan Rail Trail Project Documentation of Existing Conditions



Photo 1-6
Separation and Structural Damage Inside Culvert
RR Tracks Directly above Damaged Section



Photo 1-7
Only Minor Restoration and Maintenance
Required Internally

*Ashokan Rail Trail Project
Documentation of Existing Conditions*



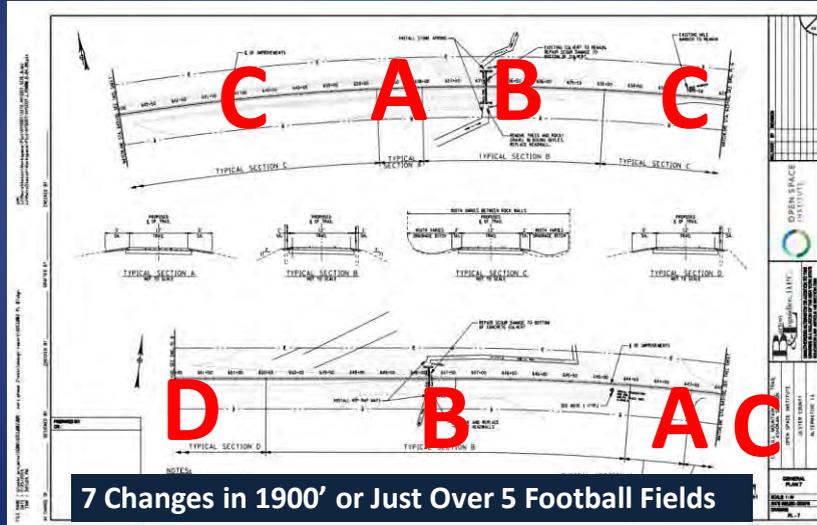
*Ashokan Rail Trail Project
Documentation of Existing Conditions*



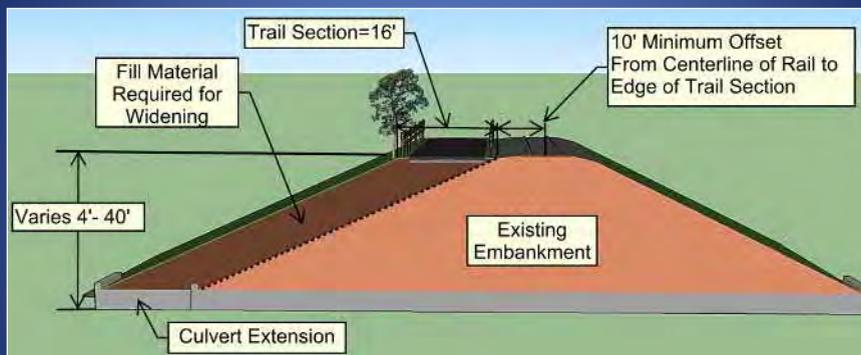
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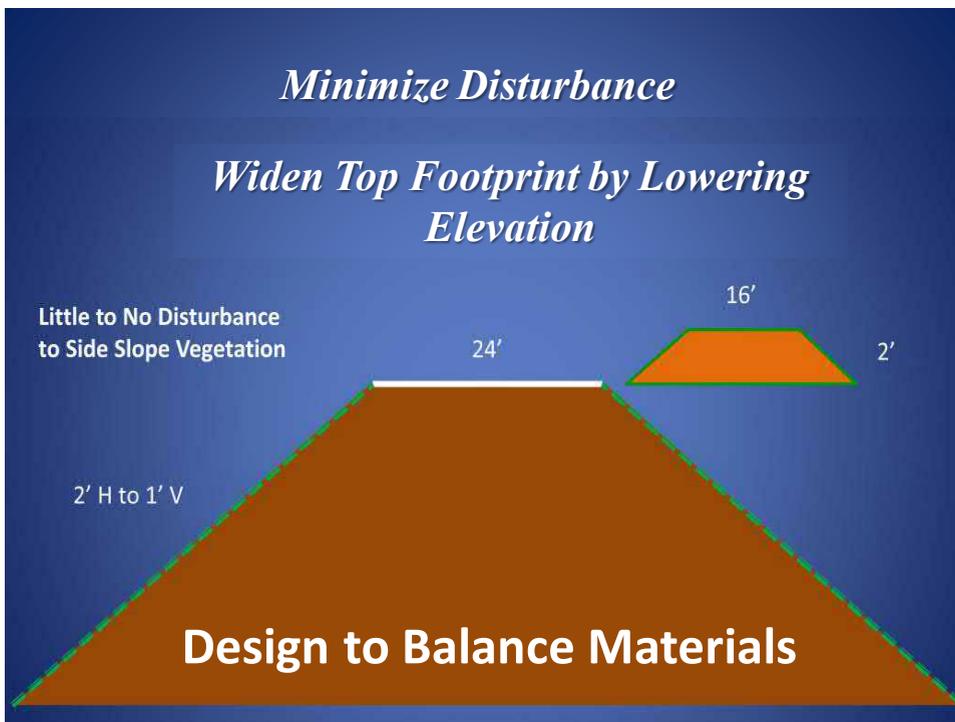
Ashokan Rail Trail Project Mapping Trail Segments



Ashokan Rail Trail Project Engineering Constraints to Rail-with-Trail



- “Steep Slope” (Sections B&D) locations would require large volumes of new fill material, culvert extensions, Tree Cutting, and Slope Stabilization
- “Rock Cut” locations (Section C) would require significant rock removal/ blasting
- Restarting railroad use would require extensive renovation/ thousands of new ties
- Likely detrimental impacts to wetlands, forest cover, historic structures, etc.



Ashokan Rail Trail Project Trail Section B (Steep Slopes Both Sides)

**8,000
Linear Feet**



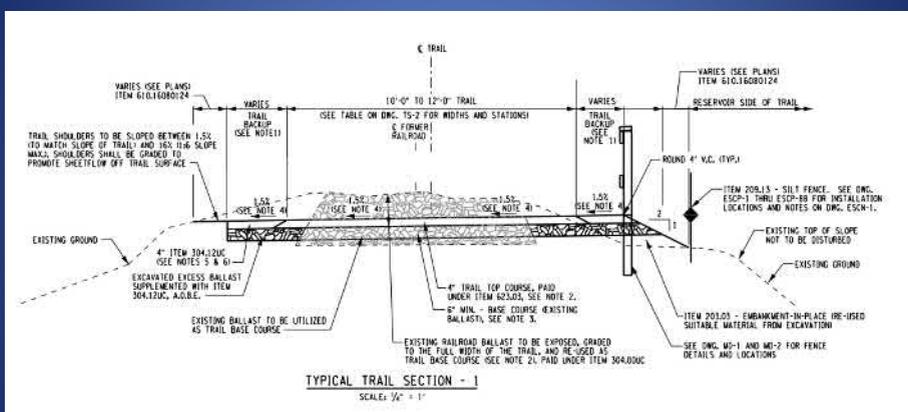
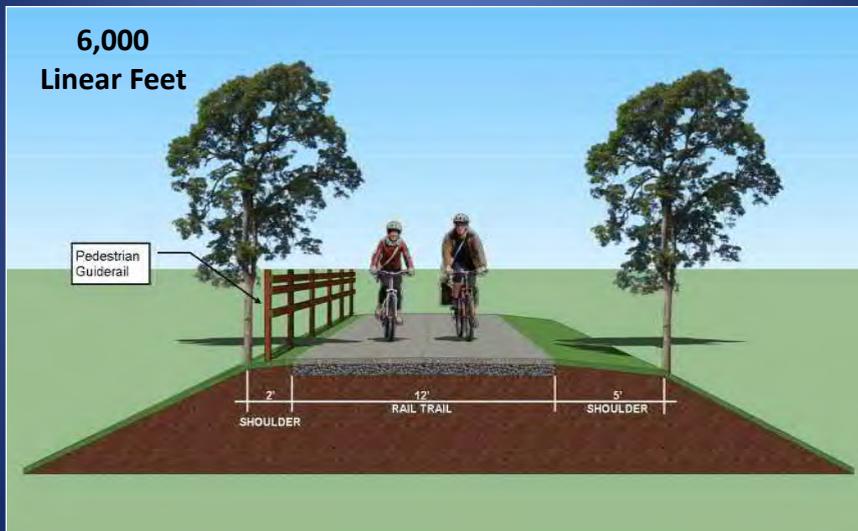
Ashokan Rail Trail Project Trail Section C (Rock Cut)

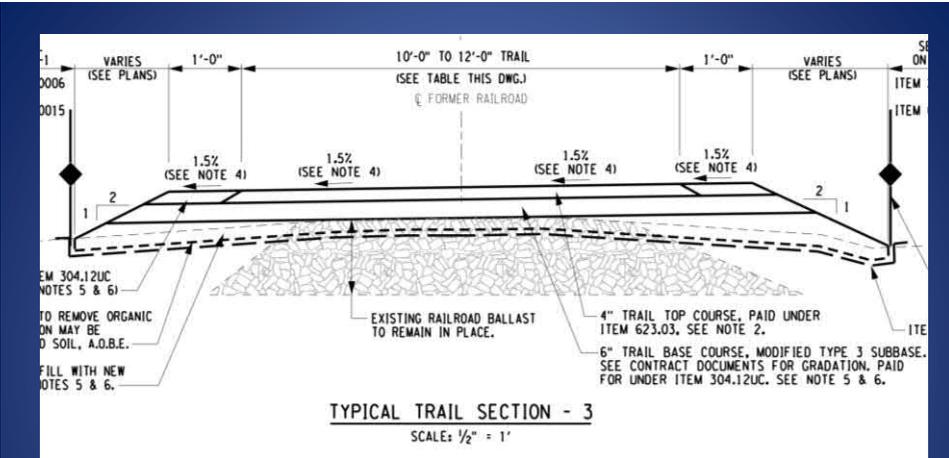
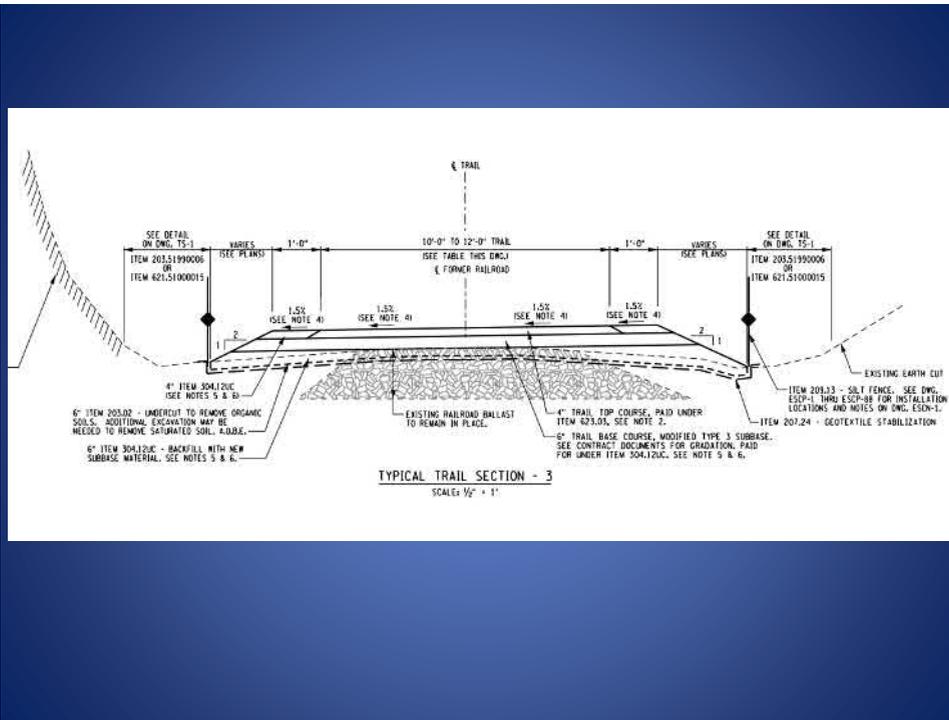
**13,400
Linear Feet**



Ashokan Rail Trail Project Trail Section D (Steep Slope One Side)

**6,000
Linear Feet**





BASE COURSE STONE GRADATION
ITEM 304.12UC

BASE COURSE	
NYS DOT STONE	COMPOSITION (BY WEIGHT)
ITEM 304.12	50%
#4A STONE	50%

TOP COURSE STONE GRADATION
ITEM 623.03

SIEVE DESIGNATION	% PASSING (BY WEIGHT)
1/2"	100%
3/8"	90-95%
No. 4	60-70%
No. 8	40-50%
No. 40	20-30%
No. 200	10-16%

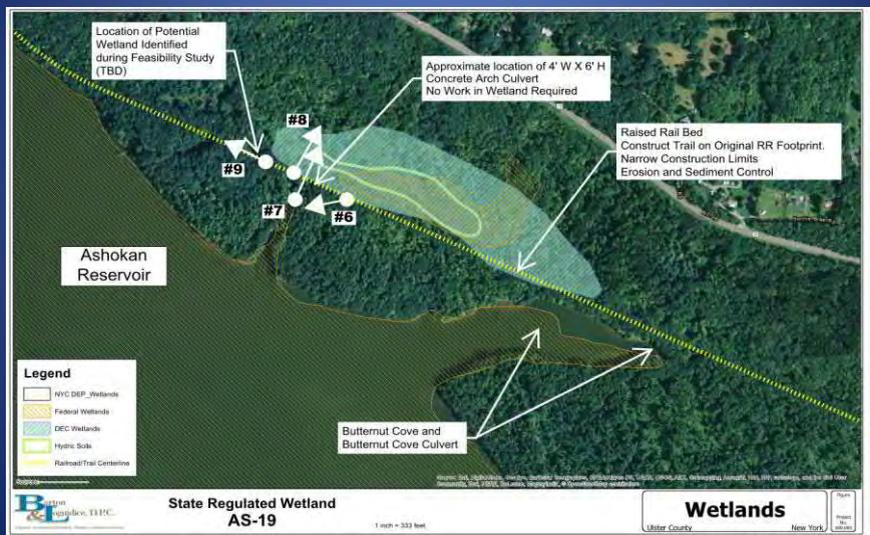
Ashokan Rail Trail Project Feasibility Study Recommendations



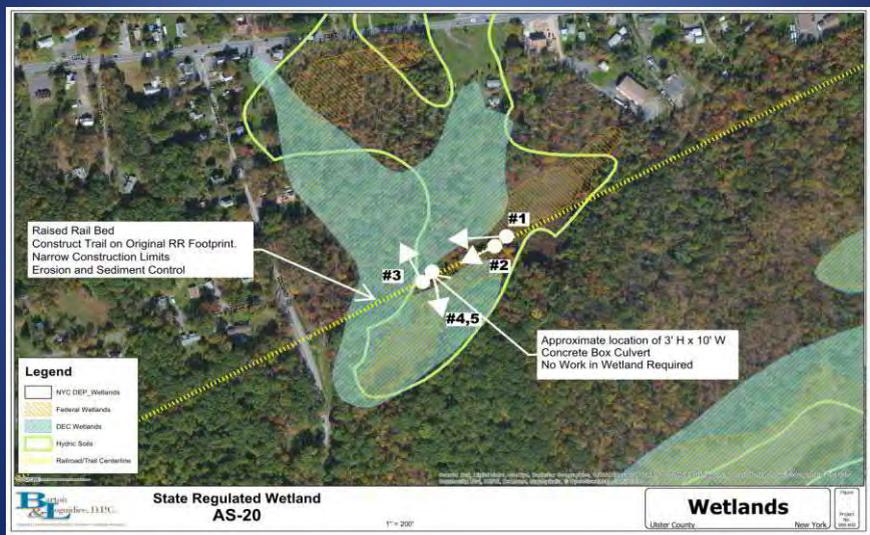
Ashokan Rail Trail Project Feasibility Study Recommendations

- ✓ Utilize existing alignment to reduce impacts
 - ✓ Construct to AASHTO standards/
maximum slope is less than 1%
- ✓ Proposed width of 12 feet for most of trail
 - ✓ Surface should be crushed stone and
re-use existing ballast materials as sub-base
 - ✓ Consider alternatives for Butternut
Creek Culvert and Boiceville Bridge
- ✓ Locate trailheads at or near Woodstock Dike,
Ashokan Station (“Jones Cove”), and
Route 28A in Boiceville

Ashokan Rail Trail Project Wetland Avoidance and Protection



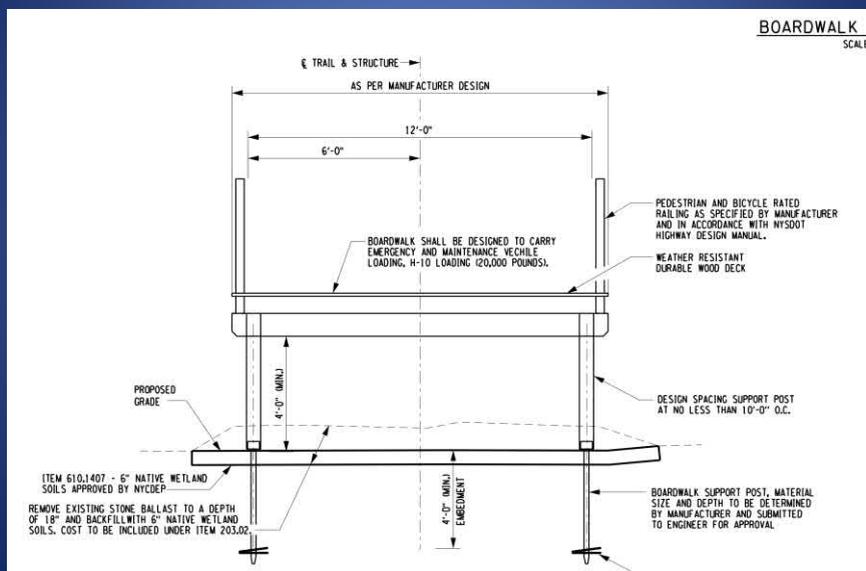
Ashokan Rail Trail Project Wetland Avoidance and Protection



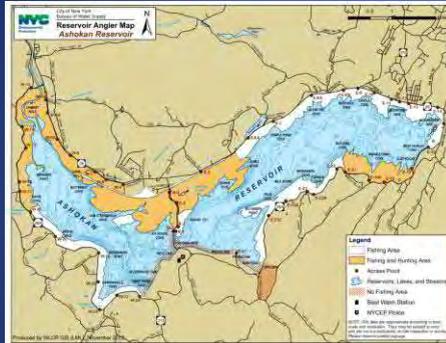
Ashokan Rail Trail Project Wetland Avoidance and Protection



Wetland Avoidance and Protection



Ashokan Rail Trail Project Preliminary Design Considerations



- ❖ Fishing/ hunting access
- ❖ Emergency access & response
- ❖ Security & maintenance
- ❖ Construction staging and temporary access
- ❖ Historical interpretation/ art
- ❖ Protection of users and water supply/ signage
- ❖ Connections to community facilities and nearby businesses
- ❖ Accessibility for persons with disabilities & limited mobility
- ❖ Project cost and timeline

Ashokan Rail Trail Project Butternut Creek Culvert

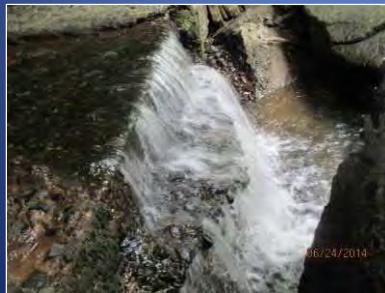


*Ashokan Rail Trail Project
Butternut Creek Culvert*

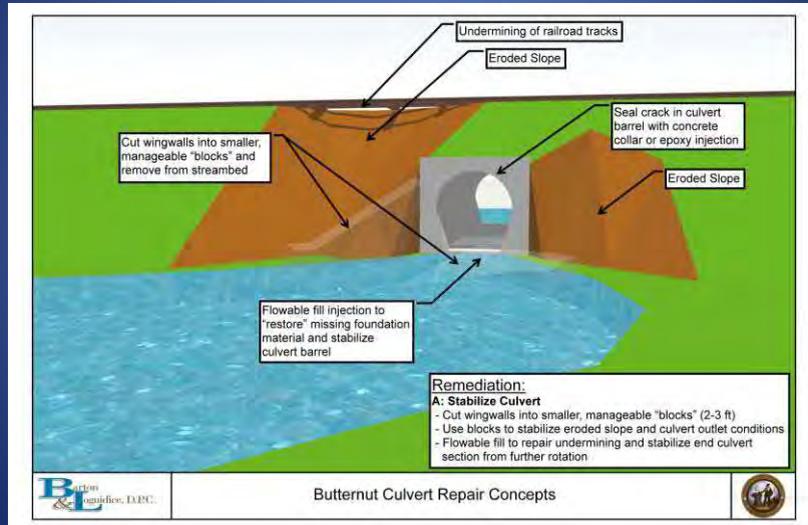


*Ashokan Rail Trail Project
Butternut Creek Culvert Alternatives*

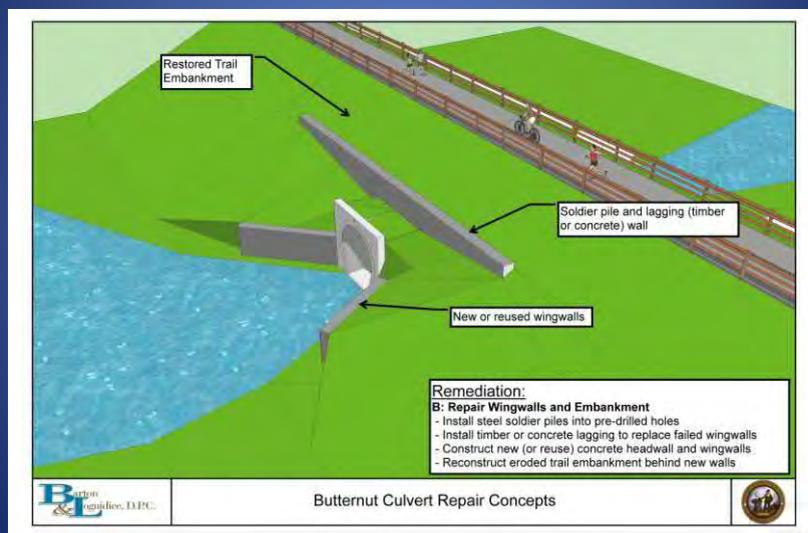
- ❖ Rehabilitation of Existing Culvert
- ❖ Replacement with New Culvert of Similar Type
- ❖ **Daylight Butternut Creek- Truss Bridge Structure**
- ❖ Daylight Butternut Creek- Girder Span Structure

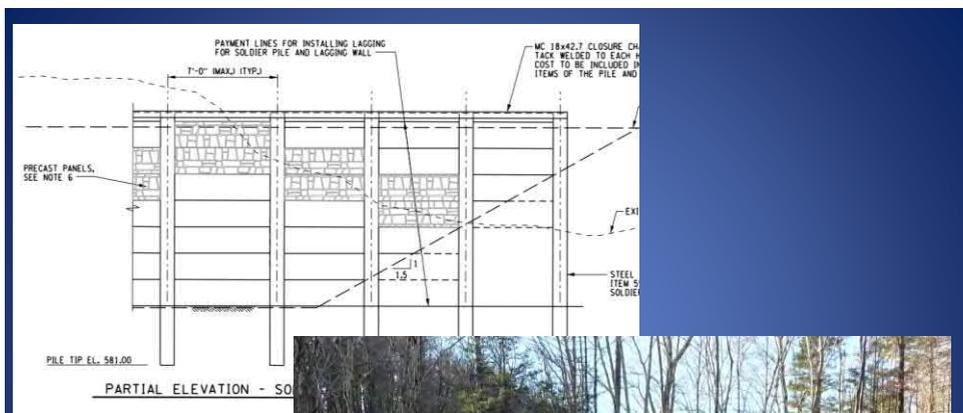
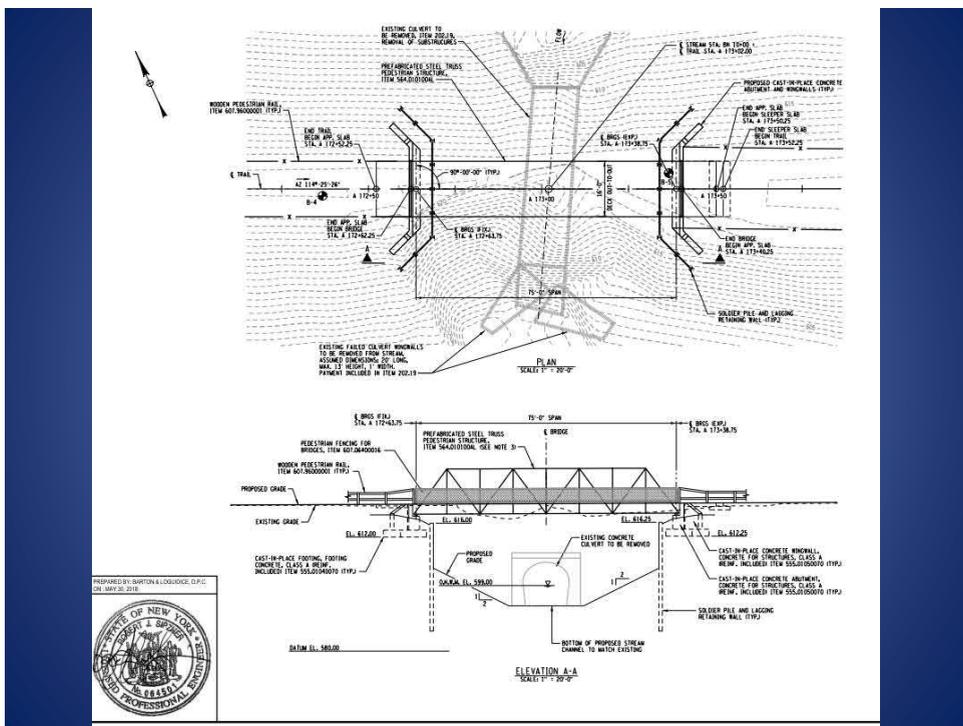


Ashokan Rail Trail Project Butternut Creek Culvert Rehabilitation



Ashokan Rail Trail Project Butternut Creek Culvert Rehabilitation





*Ashokan Rail Trail Project
Boiceville Bridge Replacement*

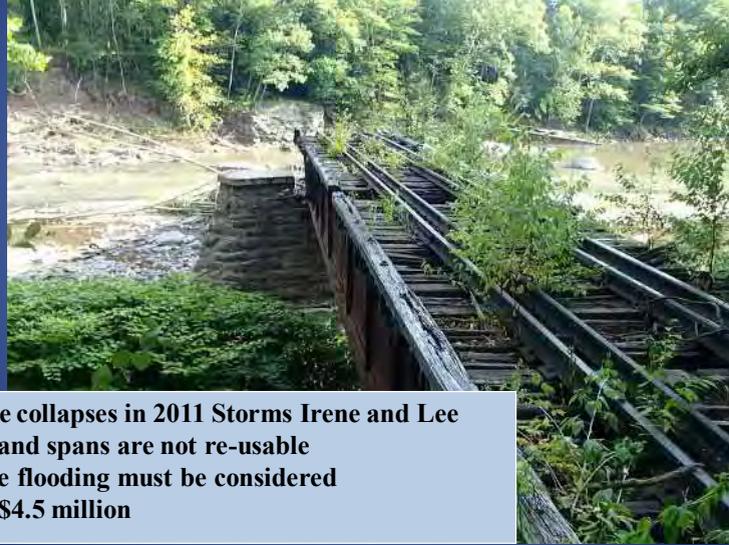


*Ashokan Rail Trail Project
Boiceville Bridge Replacement*



- Trestle collapses in 2011 hurricanes
- Piers and spans are not re-usable
- Future flooding must be considered
- Estimated cost- \$2.6 to \$4.5 million

Ashokan Rail Trail Project Boiceville Bridge Replacement



- Trestle collapses in 2011 Storms Irene and Lee
- Piers and spans are not re-usable
- Future flooding must be considered
- Cost \$4.5 million



- 2011 Storms Irene and Lee = 1,700 CFS
- April 4, 2017 = 1,200 CFS
- Design Storm Flow = 2,400 CFS
- Bridge Low Bid \$4.4 million

04/04/2017 09:02



*Ashokan Rail Trail Project
Boiceville Bridge*





Ashokan Rail Trail Project Boiceville Bridge Alternatives



Tree and Track Removal



Tree and Track Removal

To account for possible market escalation and de-escalation, adjustments will be made on price bid for Rail Removal and Disposal using the average published AMM price of the month that the work was completed in.

Adjustments to the Bid prices resulting from a fluctuation in the published price greater than 20% are not included as part of this contract and will need to be negotiated with the County.

Average of Monthly AMM Published Price For "Random Rails"	Price Adjustment to Bid Price Per Linear Foot of Rail Removed and Disposed
Initial Index Price - \$270/ton	No change
Price Drops 5%	+ \$0.20 Escalation to bid price
Price Drops 10%	+ \$0.40 Escalation to bid price
Price Drops 20%	+ \$0.80 Escalation to bid price
Price Increases 5%	- \$0.10 De-Escalation to bid price
Price Increases 10%	- \$0.30 De-Escalation to bid price
Price Increases 20%	- \$0.65 De-Escalation to bid price

Note: Percentage Changes that fall between the above figures will be adjusted based on a straight line interpolation.

AMM SCRAP IRON AND STEEL PRICES

PRICES EFFECTIVE WEDNESDAY, SEPTEMBER 13, 2017

CONSUMER BUYING PRICES

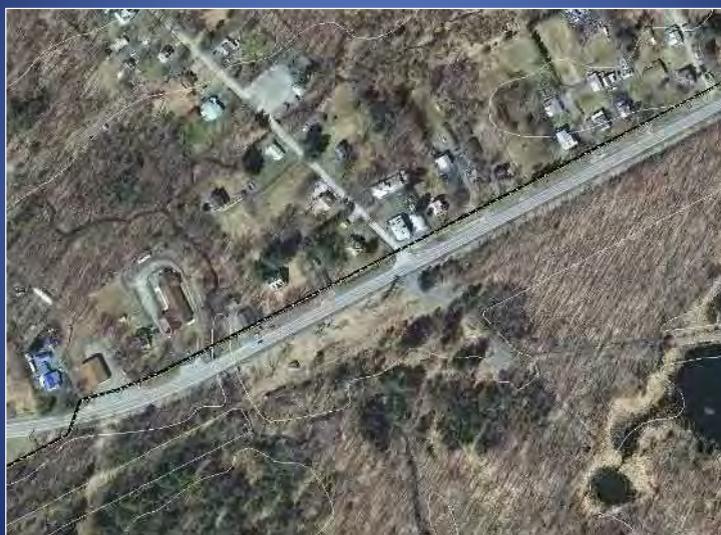
Estimated domestic consumer buying prices in US\$ gross ton, delivered mill price.

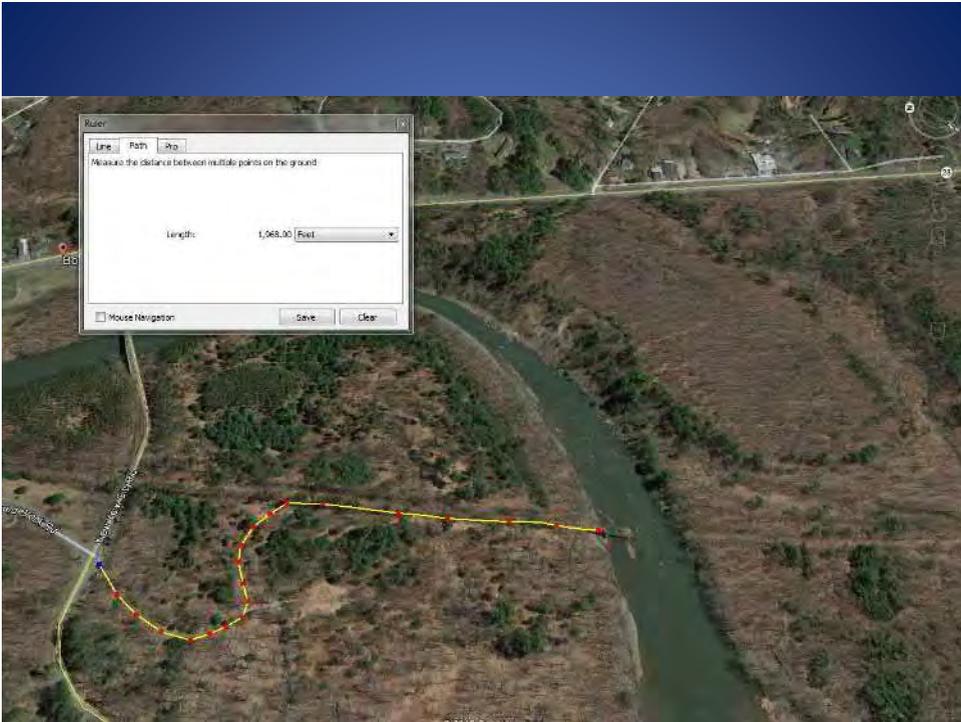
DATE REVIEWED:	Alabama	Ark/Tenn Border	Chicago	Cincinnati
09/11/17	09/11/17	09/08/17	09/11/17	
NO. 1 HEAVY MELT	280	275	265	295
No. 2 heavy melt	270	—	250	—
No. 1 boulders	385	385	370	365
No. 2 boulders "	—	232	220	—
No. 1 busheling	390	390	385	388
No. 1 industrial boulders	—	—	—	—
Shredded auto scrap	310	305	280	310
MACHINE SHOP FURNINGS	235	195	185	175
Cast iron borings	—	—	250(a)	—
Cut structural plate, 2" max.	—	—	384	—
Cut structural plate, 3" max.	320	—	—	—
Cut structural plate, 5" max.	300	505	305	310
Foundry steel, 2" max.	—	—	294	—
Cupola cast	—	—	309	—
CLEAN AUTO CAST	—	—	364	—
Unstripped motor shells	—	—	279	—
Heavy breakable cast	—	—	274	—
Drop breakoff machinery cast	—	—	228	—
Rail crops, 2" max.	—	—	385	—
Random rails	—	—	280(a)	—
Steel car wheels	—	—	370	—
Warping rails	—	—	325	—





*Ashokan Rail Trail Project
Ashokan Station/ "Jones Cove"*





Ashokan Rail Trail Project Anticipated Project Timeline

✓ Begin Environmental Assessments	June 2016
✓ Preliminary Structure Design	November 2016
✓ Public Information Meeting	December 2016
✓ 90% Complete Plans	February 2017
✓ Final Permits Obtained	April 2017
✓ Final Plans, Specifications and Estimate	May 2017
✓ Bidding and Letting	June-Sept 2017
✓ Construction Begins	December 2017
• Construction Completion	October 2019



PDH Questions

- True or False

Early Coordination with Regulating Agencies will help project progress and approvals

TRUE

PDH Questions

- Which of the following Best describes a TERMINAL Reservoir
 - a. Designated Swimming Area
 - b. Terminal where you can catch a Train
 - c. Where water from other locations is stored and then flows into the Aqueducts
 - d. It can be positive or negative like a battery

C

PDH Questions

- True or False

Careful Attention must be given to Construction Access and Realistic Means and Methods especially for projects in secluded areas.

TRUE

PDH Questions

How many Tons of Steel Rail where removed from the corridor?

- a. 200
- b. 867 5309
- c. 1 Kilo
- d. 18,700

d. - 18,700

PDH Questions

The Boiceville Bridge Length and Elevation were increased because.....

- a. Sailboat Clearance
- b. Clearance for Flying Fish
- c. To pass a 50 YR Storm
- d. Improve the View
- e. All of the Above

C

PDH Questions

The Butternut Cove Bridge will provide the Following:

- a. Restore the natural flow path
- b. Stream Daylighting
- c. Allow passage of fish and other amphibians upstream
- d. Reduction in Erosion
- e. All of the Above

E

PDH Questions

- True or False

Trail Base and Top materials must be carefully selected to be compatible with the Existing Environment and Intended use. Once size does not fit all.

TRUE



Ulster County Rail Trail Project: *"Ashokan Rail Trail"*

Ashokan Rail Trail Project

Questions ?

