
PROGRAM REPORT

Adirondack Rail Trail

Various DEC – Land and Forest Locations

Project No. SB624

prepared for

Department of Environmental Conservation

prepared by

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**Office of
General Services**

**Design &
Construction**



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PROJECT INTENT:

The client Request for Services per the OGS form BDC 153, states the summary of work as: The New York State Department of Environmental Conservation (NYS DEC) and the New York State Department of Transportation (NYS DOT) have completed a “Unit Management Plan” (UMP) for the State-owned Remsen-Lake Placid Travel Corridor (Corridor). Most of the 119-mile Corridor will be rehabilitated by the NYS DOT for railroad use, but thirty-four (34) miles of it from Lake Placid to Tupper Lake, will be converted by the DEC to a multiple-use recreation trail.

The requested project work for this application is an engineering study to inform design and construction of the recreation trail portion. The Corridor is a raised rail bed for much of the 34 miles and traverses woodlands, wetlands, open water causeways, rock cuts, and populated villages. The DEC expects to construct the trail with a stone dust surface suitable for the use of most road bicycles, snowmobiles, skis, baby strollers, and wheelchairs.

The purpose of this report is to establish the practical surface-width of the trail for various sections. It will also address bridge and culvert re-habilitation needs, the safety infrastructure necessary to accommodate trail-users on bridges, culverts, and causeways, parking/access facilities, and the safety and ingress/egress infrastructure needed at several at-grade public road crossings.

Safety infrastructure (including fencing) needed along the trail length has also been identified in this report. NYS DOT provided the DEC with inspection reports for bridge and culverts on this trail segment of the Corridor. DEC expects to use this program report to define the scope for future design consultant work. The report will not address rail and tie removal, as this task will be the subject of a separate project advanced by the NYS DOT.

EXECUTIVE SUMMARY:

The Adirondack Rail Trail Project will convert the northern portion of the Remsen-Lake Placid Travel Corridor, a former railroad bed, into a 34-mile multi-use, all-season recreational trail for people of all abilities. It will connect the outdoor recreation-oriented communities of the Tri-Lakes area (Lake Placid, Saranac Lake and Tupper Lake) in the Adirondack Park. The rail trail, access points, and infrastructure on the trail will be designed to comply with the Americans with Disabilities Act to the maximum extent possible.

This conceptual plan provides design recommendations based on direct input from the Adirondack Rail Trail Stakeholder group. The shared goal of the DEC and the Stakeholder group is to develop and manage a recreational trail that is a world-class destination, while:

- Maximizing public use by residents and visitors of all abilities;

- Ensuring a safe and enjoyable experience for trail users; and,
- Minimizing negative effects on
 - Natural resources,
 - Adjacent residents, and
 - Other trail users.

The DEC and the Stakeholder group considered numerous issues and will continue to do so as the development and management of the trail is planned including, but certainly not limited to:

- Access points
- Bridges and culverts
- Connections to communities and businesses
- Emergency response
- Function of train depots
- Historic preservation
- Infrastructure and amenities
- Interpretation of natural, cultural and historic features
- Parking areas
- Possible areas of conflict with adjacent private landowners
- Road crossings
- Rules, regulations, and enforcement
- Signage
- Surface material

In December 2016, Bergmann Associates was hired to prepare this Program Report for this rail-trail conversion. As part of the project, several documents were reviewed, including the recent May 2016 Amendment of the 1996 Remsen-Lake Placid Travel Corridor Unit Management Plan/Environmental Impact Statement. Site visits and other information sources were also used to analyze the existing conditions and interpret opportunities along the trail, including land use, roadway crossings, bridges and other structures, and local natural, cultural, and historic resources. Stakeholder engagement was also key in gathering information to inform the design process. The trail corridor was subdivided into three sections for ease of mapping during the information gathering and site analysis phase:

Section A: Tupper Lake to Lake Clear

Section B: Lake Clear to NYS Route 86 (east of Saranac Lake)

Section C: NYS Route 86 (east of Saranac Lake) to Lake Placid

Description

The proposed design is a 10-foot wide stone dust trail with a minimum 2.5 feet shoulder width on each side within a 15-foot wide cleared right-of-way for the entire 34-mile length between Tupper Lake and Lake Placid. It is the intent that the rails and ties will be removed, under a separate contract, prior to the construction of the trail.

For more information on potential beneficial and/or adverse impacts, refer to the May 2016 Remsen-Lake Placid Travel Corridor UMP Amendment.

PROJECT HISTORY:

The Adirondack Rail Trail is the northern 34-mile segment (Segment 2) of the Remsen - Lake Placid Travel Corridor. The Adirondack Park State Land Master Plan defines a Travel Corridor as that strip of land constituting the roadbed and right-of-way for state and interstate highways in the Adirondack Park, the Remsen to Lake Placid railroad right-of-way, and those state lands immediately adjacent to and visible from these facilities. It is part of the Adirondack Rail Trail Program, which is administered by The New York State Department of Environmental Conservation (NYS DEC) through the Office of General Services (OGS), and is funded by the NYS DEC. This draft concept plan provides an overview of the multi-use recreational trail for people of all abilities between Tupper Lake and Lake Placid, identified in the May 2016 Amendment of the 1996 Remsen-Lake Placid Travel Corridor Unit Management Plan/Environmental Impact Statement (1996 UMP).

The Adirondack Rail Trail follows the bed of the former railroad line that was built in 1892 by William Seward Webb between Tupper Lake and Lake Placid. This line traveled northeast towards Lake Clear, and then headed southeast to Lake Placid, passing through Saranac Lake, roughly paralleling NYS Route 86 on its way to Lake Placid. Because it was a railroad, the curves are moderate and the typical grades are between one and 1 ½ percent. The former railroad line lies totally within the boundary of the Adirondack Park, passing through the hamlet of Lake Clear and Villages of Tupper Lake, Saranac Lake and Lake Placid. This park was created by New York State in 1892, and according to the Adirondack Park Agency (APA), is the largest publicly protected area in the contiguous United States. It encompasses nearly 6 million acres and is comprised of both publicly and privately owned land.

In the 1996 UMP, an alternative was originally identified for the 119-mile corridor, which proposed permitting rail use for the whole length while encouraging compatible recreational uses. In the 2016 Amendment, the current proposal for a multi-use recreational trail for the 34-mile northern segment was identified.

Documents reviewed for this program report consisted of existing planimetric, topographic, and utility mapping; surveys, reports and studies as made available from the DEC, DOT, APA, and OGS including:

- The Adirondack Rail Trail Lake Placid to Old Forge Stage One: Lake Placid to Tupper Lake Development Plan, July 2012
- Remsen-Lake Placid Travel Corridor Unit Management Plan/Environmental Impact Statement, 1996
- Remsen-Lake Placid Travel Corridor Unit Management Plan Amendment/Final Supplemental EIS May 2016
- NYSDOT Bridge and Culvert Inspection Reports
- National Register of Historic Places Documentation Report for the New York Central Railroad Adirondack Division Historic District (NR listed 1993)
- Lake Placid to Ray Brook Trail construction documents, February 2007

ORIENTATION MEETING / FIELD SURVEY:

Major trail opportunities and challenges identified by the Stakeholder Group were documented at several Stakeholder meetings. The meeting dates are listed below. Meeting agendas and summaries can be found in Appendix 3.

September 1, 2016
September 22, 2016
October 12, 2016
October 28, 2016
November 8, 2016
December 1, 2016
December 13, 2016
February 23, 2017
March 21, 2017
April 7, 2017
April 21, 2017

On October 18, 2016, an initial orientation site visit of the rail corridor via a high-rail vehicle beginning at Tupper Lake and ending at Lake Placid was conducted, arranged by the OGS. Representatives from NYSOGS, Bergmann Associates, Weston and Sampson, and the Adirondack Scenic Railroad were present.

On May 30, 2017, a cursory geotechnical investigation was performed by Empire Geo-Services, Inc. to note ballast type and thickness and readily apparent subgrade conditions.

FINDINGS:**1. Adirondack Rail Trail**

The Adirondack Rail Trail is within a generally 100-foot wide corridor that is approximately 34 miles long from Tupper Lake to Lake Placid. For the purpose of this program report, it has been organized into three sections for ease of mapping and analysis, as depicted on the Project Key Map. Below is a brief geographic description of each section.

Section A: Tupper Lake to Lake Clear

Beginning in the Village and Town of Tupper Lake at Main Street (NYS Route 3) in the southwest corner of Franklin County, the trail traverses in a northeasterly direction through the Towns of Tupper Lake, Santa Clara, and Harrietstown to NYS Route 30 in the hamlet of Lake Clear on the shore of a lake of the same name.

Section B: Lake Clear to NYS Route 86 (east of Saranac Lake)

Beginning in the hamlet of Lake Clear in the Town of Harrietstown at NYS Route 30, the trail traverses in a southeasterly direction through the Towns of Harrietstown and North Elba, passing through the Village of Saranac Lake and into the Essex County, ending at the intersection with NYS Route 86 (Fowler's Crossing).

Section C: NYS Route 86 (east of Saranac Lake) to Lake Placid

Beginning at the intersection with NYS Route 86 (Fowler's Crossing), the trail traverses in a southerly, then easterly direction through the Town of North Elba roughly paralleling NYS Route 86 to the Village of Lake Placid, ending at the intersection with Station Street.

2. Land Use, Ownership, and Resources.

The Adirondack Rail Trail corridor is owned by the people of the State of New York and is under the jurisdiction of the NYSDOT, except for three parcels located in the general area of North Country Community College (NCCC). The NYSDEC is currently in cooperative negotiations with Essex County, Franklin County, and NCCC to obtain the necessary real property interest in the parcels to allow for public use of the trail. Although the State owns the majority of the corridor and adjoining lands are not critical to the construction of the trail itself, they do play an important role for possible future trail amenities.

The lands adjoining the trail within the Adirondack Park have been classified by and are regulated by the Adirondack Park Agency Act. These classifications are outlined in the Adirondack Park Land Use and Development Plan (APLUDP) and regulations on use can be found in the Adirondack Park State Land Master Plan (APSLMP). The land use classifications are divided into two groups: Private and Public.

The uses for Private Lands range from Hamlet, where development is encouraged, to Resource Management, which requires permits for most uses. Since the purpose of this program report is not to make recommendations for development of private land, private land is shown for context only and the six private land use classifications have been combined under one land use designation labeled "Private" and depicted in orange on the Land Use/Ownership and Amenities Maps (Figures 2-4).

The Public Lands within the corridor are designated by seven land use classifications, which not only identify existing land use but also help to determine future desired land use. For the purpose of the trail design, it was used to help inform locations for trail amenities, such as scenic views, fishing piers and trailheads.

Only four of these seven land use classifications, Canoe Area, Wild Forest, Intensive Use, and State Administrative directly adjoin the corridor, and two others, Wilderness and Historic fall within proximity of the trail. Water Bodies, although not technically listed as a classification, is listed below. These are significant natural features and potential trail destinations and are shown on the maps.

- **Wilderness** – Light Green

A wilderness area, in contrast with those areas where man and his own works dominate the landscape, is an area where the earth and its community of life are untrammelled by man--where man himself is a visitor who does not remain. A wilderness area is further defined to mean an area of state land or water having a primeval character, without significant improvement or permanent human habitation, which is protected and managed so as to preserve, enhance and restore, where necessary, its natural conditions, and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least ten thousand acres of contiguous land and water or is of sufficient size and character as to make practicable its preservation and use in an unimpaired condition; and 4) may also contain ecological, geological or other features of scientific, educational, scenic or historical value.

- **Primitive** – Mint Green

A primitive area is an area of land or water that is either:

1. Essentially wilderness in character but, (a) contains structures, improvements, or uses that are inconsistent with wilderness, as defined, and whose removal, though a long term objective, cannot be provided for by a fixed deadline, and/or, (b) contains, or is contiguous to, private lands that are of a size and influence to prevent wilderness designation; or,
2. Of a size and character not meeting wilderness standards, but where the fragility of the resource or other factors require wilderness management.

- **Canoe Area – Peach Stripe**
A canoe area is an area where the watercourses or the number and proximity of lakes and ponds make possible a remote and unconfined type of water-oriented recreation in an essentially wilderness setting.
- **Wild Forest – Grass Green**
A wild forest area is an area where the resources permit a somewhat higher degree of human use than in wilderness, primitive or canoe areas, while retaining an essentially wild character. A wild forest area is further defined as an area that frequently lacks the sense of remoteness of wilderness, primitive or canoe areas and that permits a wide variety of outdoor recreation.
- **Intensive Use – Dark Green**
An intensive use area is an area where the state provides facilities for intensive forms of outdoor recreation by the public. Two types of intensive use areas are defined by this plan: campground and day use areas.
- **Historic – Purple Stripe**
Historic areas are locations of buildings, structures or sites owned by the state (other than the Adirondack Forest Preserve itself) that are significant in the history, architecture, archeology or culture of the Adirondack Park, the state or the nation; that fall into one of the following categories;
 - State historic sites;
 - Properties listed on the National Register of Historic Places;
 - Properties recommended for nomination by the Committee on Registers of the New York State Board for Historic Preservation; and that are of a scale, character and location appropriate for designation as an historic area under this master plan and the state has committed resources to manage such areas primarily for historic objectives.
- **State Administrative – Pink**
State administrative areas are areas where the state provides facilities for a variety of specific state purposes that are not primarily designed to accommodate visitors to the Park.
- **Water Bodies – Blue**
This is not a private or public land use classification, but is shown on the plans and is a major land feature and potential destination/resource.

The entire project corridor is listed in the New York State National Register of Historic Places and contains contributing cultural and historic resources. Many of these provide the opportunity for additional trail amenities and local tourist attractions. Any future development or modifications that involve these elements would require coordination with the New York State Historic Preservation Office (SHPO).

Below is a brief description of land use, ownership, and natural amenities along each section of the trail.

Section A: Tupper Lake to Lake Clear

Within Section A, the entire Adirondack Rail Trail corridor is owned by the State and under the jurisdiction of the NYSDOT. There is an area near Floodwood Pond where steep slopes exist within the corridor. This will require careful design consideration due to the restricted land area and possible need for fall protection, which may affect trail/shoulder width.

The majority of the land adjoining the corridor is public and falls under the classifications of Wild Forest and Canoe Area. The Saint Regis Canoe Area and the stretches of forestlands provide many opportunities for additional recreational activities, such as canoeing, fishing, birding, and scenic viewing. There is one significant area of public land classified as Intensive Use located near

Rollins Pond, the NYS DEC Fish Creek and Rollins Pond Campgrounds. Trail connectors to these campgrounds are a potential trail amenity. A conservation easement occurs over a large portion of private land in the Town of Tupper Lake, which allows for public use of the private land.

There are 19 significant water bodies along this section that are within $\frac{1}{4}$ mile and which are potentially accessible from the trail corridor. One of these, Deer Pond, is accessible by the Deer Pond Outlet. Others are accessible via road, trail or across accessible forestlands. In many places, the trail corridor is located along the water body shore. This includes Rollins Pond, Floodwood Pond, Turtle Pond, Lake Clear, and two unnamed ponds. The other ponds in this section include Raquette Pond, Rock Pond, East Pine Pond, Long Pond, Hoel Pond, Little Rainbow Pond, Rat Pond, Little Green Pond, Little Clear Pond, and other unnamed ponds. All of these are potential destinations for other recreational activities.

Section B: Lake Clear to NYS Route 86 (east of Saranac Lake)

In this section, the entire corridor is owned by the State and under the jurisdiction of the NYSDOT, except for three parcels previously mentioned that are located in the general area of North Country Community College (NCCC). The NYSDEC is currently in cooperative negotiations with the owners of these parcels to obtain the necessary real property interest for the trail development. This will not affect the design of the trail in this section.

Approximately half of the land adjoining the trail corridor is private land with the other half public land classified as Wild Forest. The private lands, especially within the Village of Saranac Lake, provide the opportunity for development of local tourist attractions or support businesses for the trail users.

The public forestlands, especially where they adjoin Lake Colby, provide the opportunity for additional recreational amenities, such as scenic viewing, trail connections, and fishing. There are eight significant water bodies along this section within $\frac{1}{2}$ mile and which are accessible to the trail. The trail is located along the shore of McCauley Pond, as well as adjacent to Lake Colby via a causeway. It also crosses over the Saranac River, which is designated as a Recreational River under the New York Wild, Scenic, and Recreational Rivers Act. The other water bodies in this section include Little Colby Pond, Moody Pond, Lake Flower, Turtle Pond and an unnamed pond. All of these provide the opportunity for additional recreational activities and trail connections.

Section C: NYS Route 86 (East of Saranac Lake) to Lake Placid

The entire Adirondack Rail Trail within this section is owned by the State and under the jurisdiction of the NYSDOT. The majority of land adjoining the corridor is public land, most of which is Wild Forest. In the Ray Brook area are two parcels of State Administrative land and two of Intensive Use. Not far from the trail to the north, is a Wilderness area, the closest Wilderness area adjacent to the corridor. This extensive area of forestlands provide the potential for additional recreational activities, such as scenic viewing and trail connectors. The majority of private land is in the vicinity of Ray Brook and Lake Placid, which provides the opportunity for future development of tourist attractions or recreation economy support services.

There is an unnamed pond in this section where the trail is located along the shoreline, in addition to Ray Brook and the Chubb River. These provide for scenic viewing and water-based activities.

3. Transportation Network

The transportation network around the trail corridor is not particularly congested. Given that the entire corridor is within the Adirondack Park, the number of major and local roads is limited. A number of unpaved, seasonal roads and numerous driveways cross, occupy, or are adjacent to the corridor. Several bridges and culverts, as well as causeways cross drainage ways, streams, rivers, and lakes. In addition, several trail systems intersect with and/or exist proximate to the trail corridor.

At-Grade Crossings

At-grade crossings include roadway and driveway crossings for light volume and higher-volume roads. There are 22 crossings identified in the Roadway Crossing Table provided below. Ideally, crosswalks should meet the edge of the road perpendicular to the flow of traffic for the shortest crossing path. Out of the 22 crossings listed, seven have been identified as having angles less than 90 degrees to the roadway. Out of those seven crossings, two have enough right-of-way to accommodate the perpendicular (90 degree) preferred crossing angle. Realignment of the other five skewed crossings is not possible based on the existing right-of-way and existing land features. Additional topographic and boundary survey may be helpful in determining if any of the remaining crossings could be realigned in the future with major earthwork modifications or additional right-of-way acquisition.

At-Grade Roadway Crossings

ROAD NAME	Designation	Owner	Crossing Length (ft.)	Condition	Proposed Crossing Width (ft.)	Posted Speed Limit (mph)	Existing Angle°	Proposed Angle°
Lead Pond Road	Local	Private	20	Gravel	10		90	-
Floodwood Road	Local	Public	20	Asphalt/ Gravel	10		90	-
Hoel Pond Road				-				
Fish Hatchery Rd	Local	Public	20	Gravel	10		90	-
Station Road				-				
Conley Road	Local	Public	30	Asphalt	10		90	-
Lavairs Road		Private	15	Asphalt/ Gravel	10		90	-
NYS Rt. 30	State	Public	35	Concrete	10	40	90	-
NYS Rt. 186	State	Public	40'	Asphalt	10		75	90
McMaster Road	Local	Public	35'	Asphalt	10	30	90	-
NYS Rt. 86 / Broadway	State	Public	60'	Concrete	10	30	50	-
Cedar Street	Local	Public	90'	Asphalt	10	30	90	-
Margaret Street	Local	Public	45'	Concrete			45	-
Bloomington Ave	Local	Public	45'	Concrete		30	45	-
Pine Street (N)	Local	Public	45'	Asphalt	10	30	45	-
Pine Street (S)	Local	Public	50'	Asphalt	10	30	80	-
Brandy Brook Ave.			35'	Asphalt	10	30	80	-
NYS Rt. 86 / Fowler's Crossing			40'	Asphalt	10	45	75	90
Prendergast Way	Local	Public	20'	Asphalt	10		90	-
Prison Driveway		Public	40'	Asphalt	10		90	-
Old Military Road			28'		10	45	90	-
Station Street	Local	Public	20'	Asphalt	10	30	45	-

Bridge and Major Culverts

The proposed 34-mile multi-use trail corridor traverses four (4) bridges and nine (9) large culverts. NYSDOT defines a bridge as having a span length greater than 20 feet, and large culverts as having a span length less than or equal to 20 feet but greater than 5 feet. For the purposes of considering how these 13 structures may be integrated into the proposed multi-use trail corridor, they are categorized based on the type of deck system currently supporting the railroad track. The two deck systems are open timber tie decks and closed decks with a ballast section. The various structures of each deck type share numerous similarities in both configuration and condition.

A discussion of each category of structures addresses the following:

- 1) Describes the typical configuration and condition of the deck and deck level appurtenances, followed by the superstructure, substructure, and the crossed feature (waterway or roadway).
- 2) Summarizes the anticipated effects of NYSDOT's track removal contract to establish a baseline condition for the proposed trail construction project.
- 3) Provides recommendations for modifications of the structures to accommodate the proposed multi-use trail.

Open Timber Tie Decks

All four of the bridges (BIN's 7714460, 7715350, 7715400, and 7715410) and five of the nine large culverts (CIN's C120300, C120302, C120303, C120304, and C120307) include open timber tie decks.

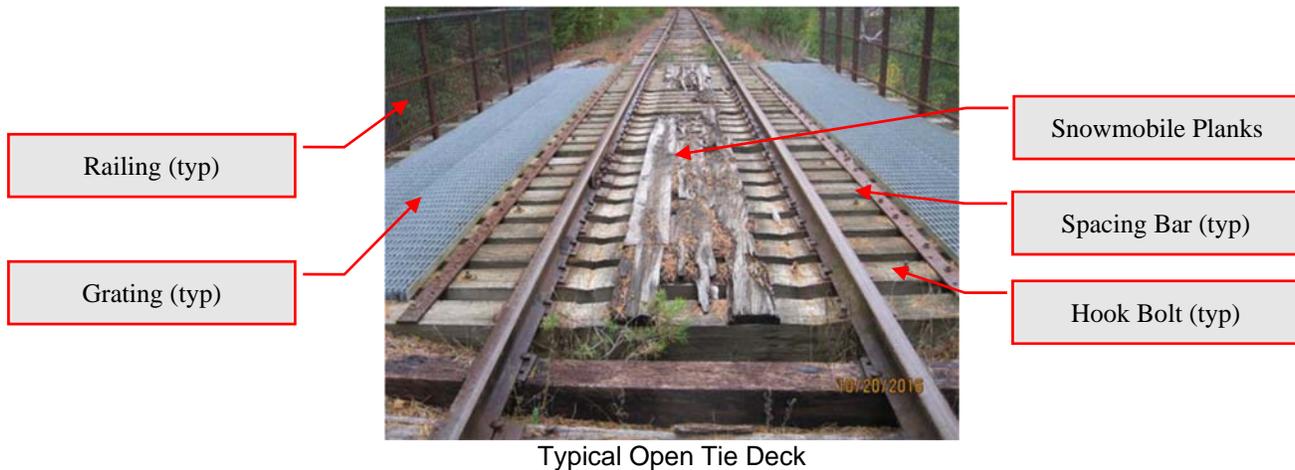
Current NYSDOT inspection reports provide that the overall condition of seven structures is very good, with a General Recommendation of 5 indicating "Minor deterioration but functioning as originally designed". However, two culverts are rated 4 & 3, indicating more serious deterioration, and those conditions are specifically discussed.

Deck and Deck Level Appurtenances

This deck configuration consists of timber bridge ties (nominally 8" wide by 10" deep) oriented transverse to the centerline of the railroad and bridge/culvert. Hook bolts in every third tie anchor the ties to the top flange of steel girders that span longitudinally between substructures. Steel spacing bars maintain a nominal tie spacing of approximately 16" to 18". The ties are typically 16' wide, with alternating ties offset four feet resulting in a 20' total width. The existing ties are in good condition at all open tie deck bridges/culverts.

Four foot wide, serrated metal grating walkways and steel railing flank the track and extend for the entire span length of the open tie deck bridges. The grating and railings provide safe access for railroad maintenance of way personnel that may be walking across the bridges/culverts. The existing grating is in good condition at all open tie deck bridges/culverts. The railings are in good condition for their original purpose, but do not satisfy code requirements and design criteria for the proposed multi-use trail.

Longitudinal planks installed between the rails accommodate use of the corridor by snowmobiles. These planks support snow pack between the ties and protect the ties from damage by snowmobile treads when snow pack is thin. The various snowmobile clubs that lease the ROW from NYSDOT install and maintain these planks.



Typical Open Tie Deck

Superstructure

Beneath the deck, the superstructures consist of two or four longitudinal steel girders. These primary members are consistently in good condition with mild to moderate levels of corrosion that do not affect the ability of the span to support current loads.

Secondary members, including diaphragms, bottom flange lateral bracing, and related gusset/connection plates are in good condition. Isolated locations of more extensive section loss in secondary members do not significantly affect function.

The paint system is typically in poor condition; however, this has not resulted in a significant level of corrosion and does not affect the functional performance of the superstructure. The sole purpose of the former paint system was to protect against corrosion. Despite the poor condition of the paint system, the extent and rate of corrosion has not resulted in significant deterioration.

Substructure

Substructures consist of reinforced concrete abutments/piers/wing walls. These units are in fair to good condition, with typical conditions including scaling, spalled concrete at edges and faces, and cracks with efflorescence. However, at two culverts (C120304 and C120307), more extensive deterioration includes large cracks, uneven displacement/settlement of abutments, and undermining of bearing plates at the bridge seats.

Crossed Features

With the exception of BIN 7714460, all structures span waterways. The waterways beneath bridges are in good condition, with no evidence of deleterious debris accumulation, sediment deposition, erosion, or scour. However, most of the culverts exhibit poor waterway alignments, approaching the structures at large skews, and thus creating conditions conducive to erosion or scour. In addition, debris, sediment, or beaver activity partially or extensively obstructs most culvert waterways. Despite these conditions, NYSDOT inspection reports do not indicate any noteworthy scour or erosion induced conditions.

Bridge/Culvert Status after NYSDOT Track Removal Contract

NYSDOT is currently preparing a construction contract to remove the railroad track from the corridor. The effect of this contract on the condition of the open tie deck bridges/culverts will be as follows. The existing bridge ties, last long tie at the bridge backwalls (which serves to retain ballast), hook bolts, and spacing bars will remain. The grating and railings will be removed. The future disposition of the existing snowmobile planks is not subject to the track removal contract; however, these should be maintained until such time that proposed multi-use trail is implemented.

Closed Decks with Ballast Section

Four of the nine large culverts (CIN's C72R002, C120301, C120305, and C120308) include closed decks carrying a ballast track section.

Current NYSDOT inspection reports provide that the overall condition of three structures is very good, with a General Recommendation of 6 or 5 indicating "Minor deterioration but functioning as originally designed". One culvert is rated 4, indicating more serious deterioration, and those conditions are specifically discussed.

Deck and Deck Level Appurtenances

All four culverts carry a typical track on ballast section.



Typical Existing Ballast Track Section over Large Culvert

C120308 is the only culvert of this type that currently includes railing. The railing provides safe access for railroad maintenance of way personnel that may be walking along the track. This railing is in very good condition for its original purpose, but does not satisfy code requirements and design criteria for the proposed multi-use trail.

There are no other deck level appurtenances.

Superstructure

C120308 is a recently installed precast concrete box culvert in very good condition.

The other three culverts consist of single span adjacent rail superstructures with a concrete topping slab. These superstructures are in good condition with some concrete spalling and mild to moderate levels of corrosion that do not affect the ability of the span to support current loads.

Substructure

Substructures for C72R002, C120301, and C120305 are gravity abutments of stone masonry, concrete faced stone masonry, or cast-in-place concrete construction. The abutments are in fair to good condition, with spalling, map cracking, and efflorescence that does not adversely affect the function of the structures.

Crossed Features

All structures span waterways. The waterways beneath bridges are in good condition; however, debris, sediment, vegetation, or beaver activity partially obstructs some waterways. Despite these conditions, NYSDOT inspection reports do not indicate any noteworthy scour or erosion induced conditions.

At culvert C120301, the inlet has poor alignment that has caused erosion in the past. An ad hoc CMU structure covered by a wooden pallet armors the inlet against erosion; however, this protection is in poor condition.

Culvert Status after NYSDOT Track Removal Contract

NYSDOT is currently preparing a construction contract to remove the railroad track from the corridor. The effect of this contract on the condition of the ballast deck culverts will be that all track infrastructure will be removed. The existing fence at C120308 and ballast will remain.

Transportation Elements by Section

Below is a discussion of the transportation elements by section.

Section A: Tupper Lake to Lake Clear

Roadways

In this section, the two major roadways that traverse the Park are State Routes 3 and 30. Route 3 travels through the Village and Town of Tupper Lake and joins Route 30 towards the southern end. Routes 3 and 30 are co-located as they leave the Village and travel easterly through the Town of Tupper Lake into the lower end of the Town of Harrietstown where they split. Route 3 continues east as Route 30 travels in a northern direction into the Town of Santa Clara, roughly paralleling the trail. Near the point where the trail crosses the boundary between the Towns of Santa Clara and Harrietstown, Route 30 comes within $\frac{1}{4}$ mile of the trail and parallels it to the end of the section in the community of Lake Clear, where the trail crosses Route 30. Only a few local roads intersect the trail in this section.

Trails

There are several NYSDEC trails within the section, many of which are located between the trail corridor and the Route 30 corridor, providing the potential for connectivity. There are also snowmobile trails located here, which include a State Funded Snowmobile Trail in the Village of Tupper Lake. There are also several Local Club Snowmobile Trails within this segment, some that are exclusively for snowmobiles, and others, which are co-located on the DEC trails.

Bridges & Major Culverts

The trail corridor crosses one bridge in this section.

BIN: 7715400



Bridge BIN: 7715400 is the only bridge in this section on the NYSDOT inventory. This bridge, which crosses the Lake Clear Outlet in Harrietstown, and is within a short distance of where Route 30 crosses the same waterway, has a timber deck on a steel girder superstructure on a concrete substructure.

Section B: Lake Clear to NYS Route 86 (east of Saranac Lake)**Roadways**

Three major and several local roadways cross and/or come within proximity of the trail corridor. The trail crosses NY State Routes 30 and 186 in Lake Clear and later along the trail, NY State Routes 3 and 86 intersect in the center of Saranac Village. The corridor crosses Route 86 and 3 at the northeastern side of the village, just before it crosses from the Town of Harrietstown into the Town of North Elba. At the southern end of the Village, the corridor crosses Route 86 again.

Trails

There are several NYSDEC trails in this section. The Jack Rabbit Trail, Turtle Pond Trail, and Oseetah Lake Trail are in the vicinity of Route 86, and another trail intersects the trail corridor west of Lake Colby. A Local Club Snowmobile trail is co-located on this DEC trail.

Bridges & Major Culverts

The trail corridor crosses six structure in this section.

CIN: C72R002



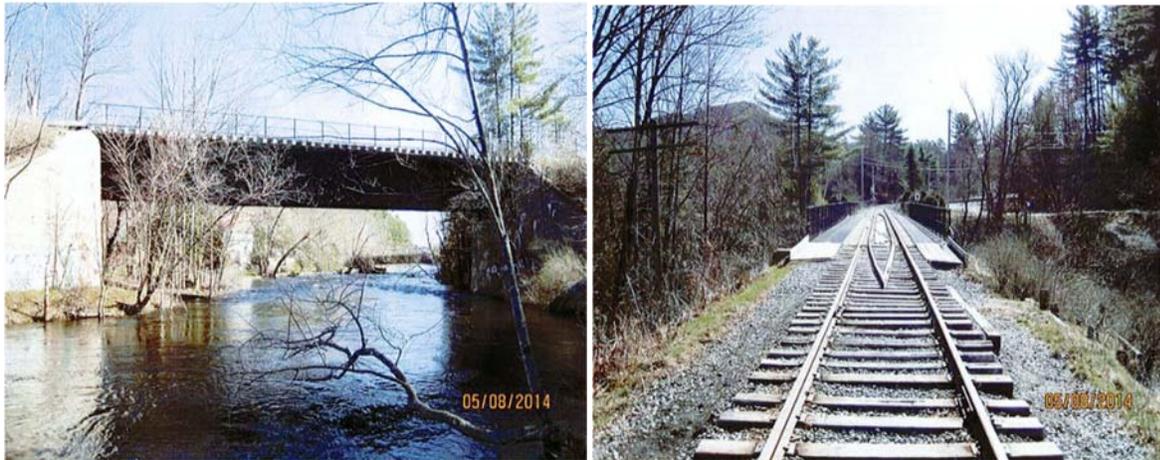
Culvert CIN: C72R002 is the first of six structures in this section on the NYSDOT inventory. This large culvert, which crosses the outlet for Lake Colby near the Village of Saranac Lake, is an open-span concrete structure on a concrete substructure.

BIN: 7714460



Bridge BIN: 7714460 is the second of six structures in this section on the NYSDOT inventory. This bridge, which crosses Woodruff Street in the Village of Saranac Lake, has a timber deck on a steel girder superstructure on a reinforced concrete substructure.

BIN: 7715410



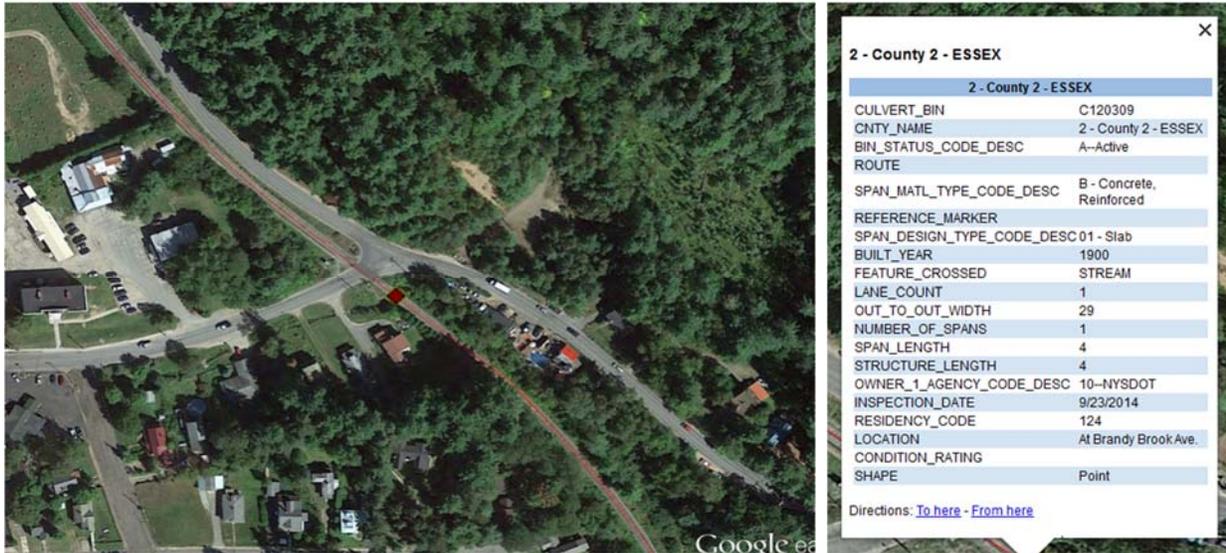
Bridge BIN: 7715410 is the third of six structures in this section on the NYSDOT inventory. This bridge, which crosses the Saranac River in the Village of Saranac Lake, has a steel girder superstructure on a concrete substructure.

BIN: 1200530



Bridge BIN: 1200530 is the fourth bridge of six structures in this section on the NYSDOT inventory. This bridge transports a local roadway over the trail corridor, and therefore an analysis for its potential use was not needed.

CIN: C120309



Culvert CIN: C120309 is the fifth of six structures in this section on the NYSDOT inventory. This culvert, which crosses a small stream near Brandy Brook Avenue in the Village of Saranac Lake, is reinforced concrete.

CIN: C120308



Culvert CIN: C120308 is the sixth of six structures in this section on the NYSDOT inventory. This culvert, which crosses McKenzie Brook in the Village of Saranac Lake and the Town of North Elba, is a single-cell concrete box culvert.

Section C: NYS Route 86 (east of Saranac Lake) to Lake Placid

Roadway

In this section of the corridor, which is in the Town of North Elba, the only major roadway is State Route 86 (Fowler's Crossing), which roughly parallels the trail on its way to the Village of Lake Placid. The study corridor crosses a few local roadways and driveways at the eastern end of the section.

Trails

Two NYSDEC trails occur within this section of the trail corridor: Scarface Mountain Trail and Prison Waterline Trail, one of which intersects the trail corridor at the Meadowbrook Campground. There are a few other trails closer to the eastern end of the trail corridor, near the Village of Lake Placid. There are no mapped snowmobile trails in this section.

Bridges & Major Culverts

The trail corridor crosses nine structures in this section.

CIN: C120307



Culvert CIN: C120307 is the first of nine structures in this section on the NYSDOT inventory. This culvert, which crosses Little Ray Brook in the Town of North Elba, has wood beams/girders on a concrete substructure. This structure has been yellow flagged based on the 7/29/2015 NYSDOT Bridge Inspection Report.

CIN: C120306



2 - County 2 - ESSEX	
2 - County 2 - ESSEX	
CULVERT_BIN	C120306
CNTY_NAME	2 - County 2 - ESSEX
BIN_STATUS_CODE_DESC	A--Active
ROUTE	
SPAN_MATL_TYPE_CODE_DESC	B - Concrete, Reinforced
REFERENCE_MARKER	
SPAN_DESIGN_TYPE_CODE_DESC	01 - Slab
BUILT_YEAR	1900
FEATURE_CROSSED	Stream
LANE_COUNT	1
OUT_TO_OUT_WIDTH	33
NUMBER_OF_SPANS	1
SPAN_LENGTH	5
STRUCTURE_LENGTH	5
OWNER_1_AGENCY_CODE_DESC	10--NYSDOT
INSPECTION_DATE	9/24/2014
RESIDENCY_CODE	124
LOCATION	0.6 Mi E of North Elba
CONDITION_RATING	
SHAPE	Point
Directions: To here - From here	

Culvert CIN: C120306 is the second of nine structures in this section on the NYSDOT inventory. This culvert, which crosses a small drainage way near Wolf Pond in the Town of Elba, is reinforced concrete.

CIN: C120305



Culvert CIN: C120305 is the third of nine structures in this section on the NYSDOT inventory. This culvert, which crosses a tributary to Ray Brook in the Town of North Elba, is an open-span concrete structure.

CIN: C120304



Culvert CIN: C120304 is the fourth of nine structures in this section on the NYSDOT inventory. This culvert, which crosses a small stream in the Town of North Elba, has a wood timber deck on a steel girder superstructure on a concrete substructure.

CIN: C120303



Culvert CIN: C120303 is the fifth of nine structures in this section on the NYSDOT inventory. This culvert, which crosses a small stream in the Town of North Elba, has a wood timber deck on a steel girder superstructure on a concrete substructure.

CIN: C120302



Culvert CIN: C120302 is the sixth of nine structures in this section on the NYSDOT inventory. This culvert, which crosses a small stream in the Town of North Elba, has a wood timber deck on a steel girder superstructure on a concrete substructure.

CIN: C120301



Culvert CIN: C120301 is the seventh of nine structures in this section on the NYSDOT inventory. This culvert, which crosses a small stream in the Village of Lake Placid, is an open-span concrete structure.

BIN: 7715350



Bridge BIN: 7715350 is the eighth of nine structures in this section on the NYSDOT inventory. This bridge, which crosses the Chubb River in the Village of Lake Placid, has a wood timber deck on a steel girder superstructure on concrete substructure.

CIN: C120300



Culvert CIN: C1203 is the last of nine structures in this section on the NYSDOT inventory. This culvert, which crosses a small stream near the end of the trail in the Village of Lake Placid, has a wood timber deck on a steel girder superstructure on a concrete substructure.

4. Geotechnical Investigation

Empire Geo-Services, Inc. performed a cursory geotechnical investigation on May 30, 2017. Access to the railroad corridor was limited to existing roadway grade crossings. Work performed consisted of visual inspections at several locations along the right-of-way noting ballast type and thickness and readily apparent subgrade conditions. The observations and findings should not be considered thorough or exhaustive in any way.

Findings

- Surface drainage appeared to be generally good at most locations with native soils typically sandy in composition.
- Railroad ballast types along the line include crushed stone and sand/gravel/slag mixtures along some sections.
- Thickness of ballast between ties was generally 1' or more with some variability observed. It appears ties generally rest upon at least 4" to 6" or more of ballast.
- The granular ballast materials and generally sandy and well-drained subgrades appear to represent suitable substrates for a recreational trail use.
- The Lake Colby causeway would benefit from restoration of the side slopes and by providing uniform erosion protection at the water line.
- Removal of the ties along the causeway should have little impact on overall embankment stability, as there is little evidence that existing ties and rails enhance erosion resistance of the side slopes in any way.

The complete report is included in Appendix 1.

RECOMMENDED SCOPE OF WORK:**1. Identified Trail User Groups.**

Four major trail user groups were identified by the DEC and Stakeholder Group and include walkers, bicyclists, cross country skiers and snowmobilers. No other motorized uses will be allowed. The proposed trail and associated attributes and amenities shall be designed to best accommodate these four user groups.

2. Typical Trail Cross Section

When the railroad was initially built in the 1890's, the relief of the mountainous terrain of the Adirondacks along the travel corridor was reduced by grading the natural topography. This included filling in low-lying areas to elevate the railroad bed and excavating soil and rock in steep terrain areas to create a relatively level and flat 10-20 feet wide railroad bed that exists today. Additionally the project corridor contains several causeways, bridges, and culverts that cross numerous streams, rivers, and wetland areas.

Much of the approximately 100 feet wide ROW (actual width varies along its length from 30' to 310' wide) is steeply sloped with rock cuts and filled embankments resulting from the creation of the rail bed. The width of the rail bed upon which the ties and tracks lie can be as narrow as 16 feet in areas where the grade was raised to keep the tracks out of the wetlands or adjacent waterbodies.

Major portions of the lands surrounding the corridor are designated as "Forever Wild" and much of the surrounding land is mapped as wetlands. Due to the environmental sensitivity of the adjacent lands surrounding the corridor, a major objective of the proposed trail development is that no filling in of wetlands or water bodies shall occur as a result of the trail development. Therefore, all grading and trail improvements must utilize the existing rail bed when wetlands or waterbodies are in close proximity to the rail bed. The proposed trail cross section consists of a 10-foot wide stone dust trail with 2-1/2-foot wide vegetated shoulders on each side for a minimum total cleared width of 15 feet. This will comfortably accommodate two-way traffic of both cyclists and pedestrians during the summer months, and snowmobiles and cross-country skiers during periods of snow cover. At bridge, culvert, and roadway crossings, the trail may narrow due to the constraints of the existing bridges, culverts, and typical standard roadway crossings.

At the approaches to paved roadways and within the developed village centers, sections of the trail are proposed to be asphalt pavement rather than stone dust. At roadway crossing approaches, an apron of asphalt pavement will contain the stone dust and prevent it spilling out into the sidewalk and roadway system. Additionally, within certain areas of the villages (at the Saranac Lake Depot, and trail segments between Broadway and Cedar Street for example), asphalt surfacing is also recommended to better fit the adjacent character and to maintain a neat and tidy appearance.

Where the available right-of-way is constricted due to either land ownership or topography, sections of the trail may need to share the available right-of-way with adjacent roadways or drives if present. Segments of the trail must share the roadway with portions of Paradise Lane and Little Green Pond Road. These areas will be clearly labeled "Share the Road" so both motorists and trail users are aware of each other's presence on the trail.

3. Trail Elements

- a. **Trailheads:** Trailheads will be located at major trail intersections or decision points, at select major roadway crossings, and at parking areas. The main purpose of a trailhead is to provide orientation (destination points and distances), general trail usage instructions (hours/seasons of operation, usage), trail etiquette, and safety information. Depending upon its location, additional interpretive or educational signage may also be present to inform trail users of specific historic or environmental resources or events.

Trailheads will generally consist of a signage kiosk (major or minor) seating, and bicycle racks where appropriate. Seating can be typical timber or steel benches in the village centers, with more natural large rock seating in the long wild stretches between the populated centers. The kiosk design itself should be unique, rustic, low maintenance and characteristic of the Adirondack Rail Trail. At select trailheads, the kiosks can incorporate a roof to provide shade for resting or picnic opportunities. The trailhead elements used consistently and repetitively throughout the corridor in conjunction with other trail amenities will reinforce the branding of the trail corridor. Future rehabilitation or expansion efforts at the Tupper Lake, Saranac Lake, or Lake Placid depots can augment those trailheads with additional features such as water stations and rest room facilities.

- b. **Rest Areas:** Two types of rest areas are provided. Pedestrian rest areas have been located approximately every 1-1/2 mile or every 30 minutes of travel on foot. The rest areas are small stone-dust areas (roughly 5' x 15') located to one side of the trail to allow pedestrians and cyclists the opportunity to stop out of the main path of travel. The rest areas are informally lined with native rocks and boulders along their perimeter to define the rest area, offer seating opportunities, contain the stone dust, and be a branding feature of the trail. To maintain a natural look, a variety of rock sizes is recommended, with a few flat-topped at 18" height for typical seating comfort. When trail users see arranged rock clusters in the distance they will know they are approaching a rest area. Where possible, rest areas have also been located at particular scenic viewing spots, at trail junctions, or at locations of cultural or environmental interest, and may have accompanying interpretive signage.

Snowmobile and cyclist pull-off areas are larger rest areas (approximately 5' x 50') spaced at approximately 10-mile intervals along the corridor. These are designed to accommodate a group of cyclists or snowmobilers who have pulled off to the side to rest, regroup, make repairs, allow for passing, or wait for others to catch up while remaining out of the way of the main path of travel. These refuges are an important safety feature given the higher travel speed of snowmobiles and cyclists. Similar to the smaller pedestrian rest areas, the snowmobile pull-off areas are stone-dust surfaces edged by informal groupings of various sized rocks to both define and brand the area and provide alternative seating in a manner harmonious to the natural setting.

Naturalistic bike racks can also be provided at rest areas where other trails intersect the corridor to allow trail users the opportunity to safely park their bicycles out of the travel lane and explore on foot.

- c. **Fishing Piers:** Based on Stakeholder input, two areas have been identified for proposed fishing piers: one located near the existing culvert on the western end of the Lake Colby causeway, and a second located in Ray Brook on the bridge over Ray Brook Pond. As these structures will need to occupy more than just the proposed trail section, impacts to wetlands are anticipated. Further design, coordination, and permitting will be required with approval agencies prior to installation of these features.

- d. **Parking Areas:** Recommended proposed parking areas have been identified based upon Stakeholder input, design considerations, land ownership, and existing conditions. These areas have been located along the length of the trail to provide convenient access for both summertime as well as wintertime access to the trail system for hikers and bikers as well as snowmobile users.

Snowmobile Parking Areas

Beginning in Tupper Lake, a large parking area off Washington Street has been identified as proposed parking for snowmobile trailers. This area will be occupied by the NYSDOT as a salvage yard and contractor staging area during the rail removal project. It is anticipated that upon completion of that project and vacancy by the NYSDOT, the area can easily be converted into a gravel-surface parking lot for snowmobile trailers that could potentially accommodate 70 or more parking spaces. Proposed restroom facilities can be located at the west end near the Tupper Lake Station.

Due to the presence of the active rail turn-around at the Tupper Lake Station, a trail will be located on the north side of the tracks in order to connect the parking lot with the trail and station. In order to avoid potential trail user conflicts with the active rail, the trail will originate/terminate on Main Street north of the active line. It will run between the parking area and the active rail and rejoin the rail corridor east of the turnout termination.

In the Village of Saranac Lake another proposed lot for snowmobile trailer parking has been identified off Will Rogers Drive on the west side of the corridor. A third proposed location for snowmobile trailer parking identified by the Stakeholders is the 'snowfields' lot on Old Military Road in the Town of North Elba. These parking lots and any future connections to the trail would be the responsibility of the local municipalities. The three proposed snowmobile parking areas span the entire corridor and can provide convenient access and entry points to the trail. Each will require further design and coordination between the landowners and the governing municipalities.

Trailhead Parking

Proposed parking opportunities for cars-only have been sited at various points in an effort to provide convenient access to segments and/or features of the trail along its entire 34-mile length. Car parking opportunities include the Tupper Lake parking lot off Washington Street, the NYSDEC Fish Hatchery site, DEC-owned lands at the end of Van Buren Street in the Village of Saranac Lake/Town of Harrietstown, the Saranac Lake Depot site, at the trail's intersection with NYS Route 86 (Fowler's Crossing), on Ray Brook Road just east of the State Office Complex, and at the trail terminus associated with the Lake Placid Historical Society campus at the lake Placid Depot..

The recommendation for the proposed lot at the intersection of the trail with NYS Route 86 (Fowler's Crossing) consists of two smaller lots (approximately 20 cars each), one located on each side of the highway. Due to the higher speeds of NYS Route 86 (posted 45 mph) and the higher traffic volumes, locating lots on each side can minimize crossings of NYS Route 86. Trail users wishing to travel south/east to Lake Placid can park on the south side of 86, those wishing to travel north/west into Saranac Lake can park on the north side. The crossing will also be re-aligned to a 90-degree perpendicular crossing to shorten the crossing distance and maximize sight visibility for safety. A reduction of the speed limit from 45 mph to 30 or 35 mph should also be considered to provide a safer crossing of the highway.

An existing parking area located on NYS Route 86 at the McKenzie Mountain Trail trailhead will be signed to direct users to the Adirondack Rail Trail (via the Prison Waterline Truck

Trail), providing additional parking opportunity for the trail. Parking areas have been located adjacent to public rights-of-way or associated with activity centers to keep the areas in full view of the public. Isolated or off-the-beaten-path sites have been avoided due to potential vandalism concerns. Each parking area is envisioned to be gravel surfaced and to have, at a minimum, timber fencing or guide rail, as necessary to define the parking area and discourage unauthorized access onto the trail, orientation signage directing users to the nearby trail destinations, and trail etiquette information.

4. Trail Signage

Trail signage is an important component for any trail system. It can enhance user experience by informing and educating the trail user, make them feel safe by knowing where and how to get help in an emergency, and foster economic development by directing users to goods and services accessible by the trail. Bi-lingual trail signage (English and French) should be considered to accommodate the large Canadian tourist population. Five types of trail signage are recommended for the Adirondack Rail Trail:

- a. **Identity** – identifies the trail system itself and can take the form of a custom pylon or structure with the trail name and logo, sited at important locations (major entry points, beginning/ending of trail, high visibility areas, etc.) to act as an identifier for the trail system and as a marker for trail entry. This is also a key element in the branding of the trail. A subcommittee of the Stakeholder group is currently working with the Regional Office of Sustainable Tourism (ROOST) in developing a trail logo and marketing collateral for the trail. Any logo developed for the trail should be repeated on key trail amenities to reinforce and strengthen the identity of the trail as a destination resource. Key recommended locations for the trail identity marker are at the west end at Tupper Lake, at Charlie's Inn at Lake Clear, at the depot, Broadway, and Brandy brook in Saranac Lake, at the intersection of NYS Route 86 in North Elba, and at the eastern limits of the trail in Lake Placid.
- b. **Wayfinding** – orients and directs trail users throughout the trail system as well as beyond to additional surrounding resources and destinations. It can also indicate distances to destination points and even travel times so trail users can make informed decisions. Each trailhead will have orientation signage indicating the overall trail route with a "you are here" label, and the distances and approximate travel times (on foot and by bike) to the nearest or major attractions. Wayfinding signage will be mounted within a kiosk (major or minor) depending on its location within the system. Major kiosks will be sited at prominent locations (major trailheads, parking areas, key trail entry points) and minor kiosks will be located at secondary or interior locations along the trail. Kiosk design will also be an important branding element for the trail. Other signage that orients trail users is identification signage for destination points, nearby trails, and street names at road crossings. These will be post-mounted signs located at the approach to roadway crossings, at trail junctions, or at arrival points of major features (campgrounds, information centers, restrooms, etc.)
- c. **Regulatory** – guides and informs trail users on the rules of the trail, including safety-warning signage along the trail and at roadway crossings. Warning signage will follow the Manual on Uniform Traffic Control Devices (MUTCD) standards and are typically individual post-mounted signage (Stop, Trail Narrows, etc.) located along the length of the trail. Operational or usage signage (trail etiquette, user guidelines) will be located on the major or minor kiosk at the trailheads and parking areas.

- d. **Interpretive** - highlights unique features, events, locations, or history of the trail corridor and its adjacent surroundings. This can provide another level of experience for the trail user and foster a deeper understanding, connection, and sense of pride for the trail and the region. Interpretive opportunities exist with the remaining historic resources along the corridor (refer to Land Use, Ownership, and Resources Maps), as well as for the unique and diverse Adirondack ecology. It is anticipated that many rest areas will contain a post-mounted interpretive sign highlighting an adjacent significant feature of the corridor.
- e. **Emergency** – provides a system of location identification while on the trail in the event of an emergency. These are typically in the form of regularly spaced, low trailside markers with a number or other identification that allows trail users in need to communicate their whereabouts to emergency personnel in order to quickly pinpoint the location of an incident that is called into 911. On longer trails similar to this one, they are typically mile markers at 1/2- or 1-mile intervals that also indicate the distance trail users have traveled. In keeping with the rustic nature of the corridor, a simple wooden post spaced at 1/2-mile intervals with an engraved number indicating the mile increment is proposed for the trail.

5. Desired Barriers/Screening

Fencing and plantings will be provided as needed along the trail to direct traffic and to block views. Two types of barrier structures are proposed for the trail: A post and rail fence, and timber guide rail. The post and rail fence is a 42-inch high rough-hewn timber fence located in areas to control movement. It is proposed adjacent to the active rail on the west end of the trail in Tupper Lake to prevent crossing of the rail at unauthorized locations and on all bridge and culvert crossings that require railing. It is also proposed adjacent to steep drop-offs or slopes; in downtown Saranac Lake to keep the trail users within the corridor and off private property; and in many instances where access roads or roadways are adjacent to the proposed trail (Pine Street, NCCC athletic fields access road, etc.) to maintain adequate separation from vehicular traffic. In the more remote areas of the trail, a combination of boulders, berms and plantings is the preferred barrier treatment to better fit the aesthetic and to minimize future maintenance demands of the trail. Timber guide rail is also proposed around many of the parking areas to help define the area and discourage unauthorized access onto the trail. When practical, it can be modified to accommodate seating.

A variety of control features will be utilized as necessary to control access and occupation of the trail by unauthorized users. These will consist of iron gates, timber guide rails, timber fencing, fixed and removable bollards, saloon or half gates, offset gates, etc. Each situation will require a tailored approach and combination of controls. These locations have been indicated on the concept plans.

Select berming and landscaping will also be installed at specific locations to control views, particularly at trail alignment shifts that deviate from the typical linear nature of the trail, such as at the Tupper Lake west end when the trail shifts to accommodate the train turn-off, and at NYS Route 86 (Fowler's Crossing) when the trail switchbacks to create a 90-degree crossing of the road.

6. Plantings

As noted, plantings will be provided at trailheads and parking areas, to screen adjacent uses and control traffic, and to support other trail features such as trailhead and rest areas, as indicated on the concept plans. The beginnings of a suggested species list can be found in Appendix 6.

7. Bridge Analysis

Recommendations to existing bridges and large culverts for conversion to the multi-use trail is as follows:

Open Timber Tie Decks

- Remove debris from waterways and implement a program to remove obstructions annually. Consider measures to discourage recurring beaver activity.
- Make repairs to concrete substructures at Culverts C120304 and C120307. Alternatively, monitor and consider future program to replace structures with precast concrete box culverts if/when conditions warrant.
- Remove and dispose existing hook bolts, countersink existing ties, and install new hook bolts flush to or below the top surface of the existing bridge ties.
- Remove and dispose of the existing tie spacing bar.
- Install timber plank decking:
 - Option 1 – All decking oriented at 45 degrees to centerline of trail, with annually installed provisions to protect the deck from damage by snowmobiles.
 - Option 2 – a 4' wide section of deck at centerline of trail oriented parallel to the trail for snowmobiles, flanked by two 6' wide sections of deck oriented at 45 degrees to centerline for pedestrian and bicycle users.
- Install new timber bridge and approach railing

Closed Decks with Ballast Section

- Remove debris from waterways and implement a program to remove obstructions annually. Consider measures to discourage recurring beaver activity.
- Make repairs to the inlet of C120301, including the removal of existing inlet structure and replacement with a precast inlet structure.
- Install railing at each culvert, except no railing is proposed at C72R002. Because no railing is proposed along the Clear Lake Causeway approaches to the culvert, railing at the culvert itself will not improve overall safety in this section of the corridor.

8. Roadway Crossings

Based on NYS DOT Record Mapping and survey plans for the project corridor, ten crossings identified cross the road at approximately 90 degrees (perpendicular) to the road. The remaining eight crossings are at a skewed angle to the road. The preferred angle of 90-degrees is not feasible based on the right way and grading restraints for all but one of the eight crossings (River Street /Brandy Brook crossing). Several of the crossing that are less than 90-degrees can be skewed slightly to approach the preferred angle of 90-degrees.

Additionally, the interim gates to be installed by the NYS DOT as part of the track removal project will remain in place to control unauthorized access of the corridor until the trail improvements are installed.

Roadway crossings are proposed to be a minimum of 12-feet wide (10 feet plus 1-foot borders) to accommodate cyclists, pedestrians and snowmobiles. Typically, crosswalks are 6 feet wide with 90-degree ladder bar striping and have 1-foot wide borders for a total of 8-feet in width. The recommended 12-feet is intended to provide a more noticeable visual contrast for both trail users as well as motorists. Road crossings should be treated with a skid-resistant surface-applied thermoplastic material to armor the underlying asphalt roadway from damage caused by the snowmobile drive tracks. Thermoplastic and/or polymer coatings have been used in New York State for several snowmobile crossing at major roadways. Appropriate warning signage will be located at all approaches per the MUTCD standards for mid-block roadway crossings per the NYSDOT track removal project and will be reconfirmed and revised as necessary for implementation of the proposed trail improvements.

9. Trail Connections

Many existing trail systems intersect with the project corridor. The Adirondack Rail Trail will provide a new access opportunity for these local and regional trail systems. Identification signage will be located at each trail junction to assist trail users in wayfinding among the various trail opportunities.

Two proposed trail connections are being investigated to connect the Fish Creek/Rollins Pond Campgrounds to the trail. The northern connection occurs at the northern end of the campground and involves an approximately ¼-mile trail connection through forested lands to the Adirondack Rail Trail. The proposed trail will be ADA-accessible with one bridge crossing the Rollins Pond to Floodwood Pond outlet to allow campers to access the Adirondack Rail Trail approximately 1.1 miles south of Floodwood Road, or approximately 7.3 miles from Main Street in Tupper Lake.

The more challenging southern connection consists of an approximately 1-mile long trail from the south end of the campgrounds routing along the south end of Rollins Pond. The proposed trail will not be ADA-accessible due to the steep and varied terrain between the campground and the trail corridor. Two creeks that drain into Rollins Pond will need to be crossed in order to access the Adirondack Rail Trail corridor. The existing ground cover is primarily forested with some wetlands associated with the drainage ways.

At the eastern terminus of the Adirondack Rail Trail, the state-owned corridor ends at Station Street. The Lake Placid depot and surrounding lands are privately owned by the Lake Placid Historical Society. The Historical Society has developed a Master Plan for their campus and are cooperatively working with the DEC and Stakeholder group to accommodate a suitable origin/termination for the trail. This will include a major trailhead with kiosk and signage, a trail connection through the campus to the depot, and at the west end of the campus a car parking area and restroom facilities. .

10. Emergency Access

As noted under the Trail Signage section, a trail marker system is proposed for the trail, spaced at ½-mile intervals with the corresponding mile labeled on the trailside marker. Emergency vehicle access points will be available at all roadway crossings along the 34-mile trail length. At least 22 roadway intersections cross the trail (refer to the “At Grade Road Crossings” Table on page 10) and provide potential access points for emergency responders. The longest segment between access points from the nearest public roadway intersections is the section of trail from Floodwood Road to the NYS DEC Fish Hatchery. This is an approximately 6.4-mile stretch of trail, or 3.2 miles at its midpoint. Each municipality should develop emergency responder plans for the trail with all known

access points and a clear understanding of the trail marker system for use by all emergency responder personnel.

11. Maintenance

The proposed trail system has been designed with future maintenance in mind. Due to the sheer length of the system, minor repairs can quickly add up, and seemingly small tasks become overwhelming when spread out over 34 miles. The existing character of the Adirondack region and in particular the trail setting lends itself to rustic, durable materials and finishes. Roughhewn timber, rocks, stone, and stone dust are the recommended materials due to their availability, appropriateness, and ability to withstand climate and use. Timber elements have been oversized to last longer, hold up to snowmobile use, and withstand potential vandalism in the public travel corridor. Their use has been minimized as well, replaced by plantings, berming, and rocks when practical and sufficient room exists. The only care required by the timber guide rails and timber fencing is replacement of broken or rotted parts.

Erosion is the biggest enemy of stone dust trails. It is imperative that during the design and construction of the trail, surface drainage is accounted for and no water is allowed to flow over or across the constructed stone dust trail. As noted elsewhere in the report, beaver activity should be closely monitored to prevent flooding and changes to drainage patterns that could damage the trail. Washouts aside, the stone dust path will require topping or grooming as necessary, depending upon intensity of use, to keep the trail open and functioning... Some popular sections of trail may require more frequent attention than others may.

The cleared zone (minimum 15' horizontal, 10' vertical) should be maintained as needed to preserve good sight distance and prevent obstacles (trees, large shrubs) from growing within the trail shoulders. Additionally, designated scenic areas should be managed to preserve their scenic vistas. The trail should be edged as needed to keep weed growth back and prevent trail narrowing. Invasive species should be kept in check. With more frequent people and animal movement along the cleared and developed trail, undesirable plant species also have the ability to migrate deeper into the wild areas. Monitoring of the quantity and type of exotic invasive species should be performed regularly.

Trail signage will perhaps be the most frequent item for repair or replacement based upon the nature of the materials used. Most sign types have a shelf life of a few years in an outdoor environment exposed to the hot sun and freezing temperatures. They are also more susceptible to vandalism since they are easily accessible. Locating the signs in populated areas in full view of residences, businesses, or thoroughfares will help minimize the risk of vandalism.

12. Construction Access and Recommendations

The length of the proposed trail (34 miles), the narrow linear project site, the presence of regulated wetlands adjacent to the proposed work area, and the limited access points will require a well-planned construction sequencing and schedule.

Due to the unique nature of the project, it is recommended to hold an advertised Constructability Review meeting with local contractors prior to completion of design documents to garner their input and ideas on construction sequencing, staging, and access, and modify the design or maintenance and protection of traffic details as appropriate prior to bidding.

Special Conditions may be considered for inclusion in the bid documents including:

- Specifying a construction period duration to ensure a timely completion that does not span over several construction seasons;
- Limiting areas of simultaneous disturbance and specifying full completion and opening of specific trail segments before beginning other sections of trail;
- Identifying any known construction equipment type or size restrictions, or specialty construction means and methods that will be required at limited or restricted access locations;
- Including dates of festivals, known events, or special areas in each community to ensure that trail construction operations do not prevent access to or interfere with such events or places; and
- Implementing a construction coordination and notification program, keeping communities, agencies and local jurisdictions well informed of planned construction activities.

CODES AND REGULATORY REQUIREMENTS:

One of the project's goal is no filling of wetlands. As such, the trail has been designed to avoid any conflicts with wetland areas. No wetland permitting is anticipated based upon the current concept plan. Some areas of the corridor will have follow-on investigation during the final design phase to accurately locate wetland boundaries via wetland delineations where proposed improvements occur near suspected wetlands. The project will be in compliance with and obtain all necessary permits from the APA, the NYSDEC, the NYSDOT, and Franklin and Essex Counties as required for all aspects of work including earthwork and grading, roadway crossings, and highway work permits. Signage will adhere to the Manual on Uniform Traffic Control Devices (MUTCD) standards. Bridge improvements will follow the AASHTO Guide Specifications for the Design of Pedestrian Bridges.

Adirondack Park Agency:

- If no fill is being placed or dredging occurring in any wetlands along the trail and there are no proposed trailhead improvements involving septic/sewer within 100 feet of a wetland, it is unlikely a wetlands permit will be needed from the APA.
- If no subdivision of land or new structures/building within ¼ mile of a wild, recreational or scenic river as delineated by the APA, then it is unlikely a rivers permit will be needed.

NYS DEC

- Coverage under a SPDES general permit would be required and a SWPPP would need to be prepared if total project land disturbance would exceed one (1) acre
- An Article 15 Protection of Waters Permit would be required for any work below top of bank in a stream or river with a water quality classification of C(T) or higher or work below top of bank in a navigable river.
- If no subdivision of land or new structures/building within ¼ mile of a wild, recreational or scenic river as delineated by NYSDEC, then it is unlikely a rivers permit will be needed.

Corps of Engineers

- If the project does not involve the discharge of dredged or fill material into waters of the U.S., it is unlikely that the project will require coverage under Nationwide Permit 42 for Recreational Facilities. Any fill in a wetland requires Pre-Construction Notification to the Corps New York District and coverage under NWP 42.
- If the project does not involve impacts to a navigable waterway as defined under Section 10 of the Rivers & Harbors Act, a Section 10 permit would not likely be required.
- If the project does not involve impacts to a Corps flood control levee or waterway owned or operated by the Corps, a Section 408 permit would not be required.

NYS Department of Transportation (DOT)

- The contractor will be required to obtain highway work permits for construction access off of state highways.

State Historic Preservation Office (SHPO)

- Consultation with SHPO in the development of the historic/cultural interpretive program and signage for the trail corridor will be needed to satisfy the UMP's identified impacts and mitigation measures.

In terms of local/county permitting, although state agencies (DEC, OGS, APA) are typically exempt from local and county regulations, a courtesy review of the trail plans with the local municipalities during the design process will ensure a community-driven process and final opportunity for input into specific design items.

KEY ISSUES AND ISSUES TO BE RESOLVED:

During the design phase a number of issues surfaced that will require resolution before installation of the trail. These include:

- Assumed corridor reduction in the vicinity of Floodwood Pond and Paradise Lane. The narrowed ROW (approximately 30' +/- at the narrowest) is partially steep slope and partially Paradise Lane. Cross access may need to be provided for private landowners on both sides of the ROW.
- The entire corridor is eligible or listed and has contributing elements. DEC/DOT/SHPO have signed a Letter of Resolution (LOR) and any future modifications to the contributing elements need to be coordinated with SHPO before they can be undertaken.
- DOT Salvage Yard at Tupper Lake may need to remain for several years. Its location will affect the current design of the trail (it occupies all available land on the north side of the active rail) and if it remains it is not available for snowmobile trailer parking as currently desired.
- Coordination with the Lake Placid Historical Society regarding the termination of the trail and its amenities needs to continue, as they are landowners of the train depot parcel.
- Property ownership and property boundaries need to be verified for parcels that appear to be privately owned along Paradise Lane and along Lake Clear that are directly adjacent to the corridor. The existence of any cross access easements needs to be researched.
- Develop rules, signs, and methods to minimize conflicts between permanent and seasonal residents along Paradise Lane and along Lake Clear and trail users.
- Minor structure encroachments along the length of the trail (fences) that could compromise the safety of trail users, particularly higher-speed snowmobiles.
- Mapped wetlands appear to cross the ROW in certain areas. Formal wetland delineations will need to be performed in select areas to confirm the presence or non-presence of wetlands.
- The proposed trail connections from the Fish Creek and Rollins Pond Campgrounds to the trail corridor will need additional study and mapping to determine the best accessible alignment with the least environmental impacts, as both the north and south connectors cross potential wetlands and traverse steep slopes.
- The proposed fishing piers or platforms will likely require wetland permits at their proposed locations.
- The Saranac Lake Train Station is under the jurisdiction of the NYSDOT and therefore any potential future development or redevelopment is dependent upon the approval of the NYSDOT.
- A portion of the corridor is not controlled by the NYSDOT. It is owned by the Essex County, Franklin County, and North Country Community College. The DEC is working with the counties and the NCCC to obtain the necessary property interests to allow for public use of the trail.
- The use of the 'snowfields' and the former sand pit off Will Rogers Drive as proposed snowmobile trailer parking needs to be coordinated by the local municipalities.

APPENDIX:

- 1) Geotechnical Report
- 2) Adirondack Rail Trail Typical Details
- 3) Stakeholder Group Meeting Minutes
- 4) Stakeholder Input Spreadsheet
- 5) NYSDOT Bridge and Major Culvert Inspection Reports
- 6) Recommended Plantings
- 7) Trail Concept Plan Mapbook (Volume 2)