

JOHNSON CITY

RAIL TO TRAIL



FEASIBILITY STUDY | FINAL | MARCH 2020

Table of Contents

INTRODUCTION	5	TRAIL DIMENSIONS AND SURFACE	50
PROJECT OVERVIEW	6	SAFETY	50
STUDY AREA LOCATION	7	TRAIL MAINTENANCE AND STEWARDSHIP	51
THE PLANNING PROCESS	8	ACCESSIBILITY	52
INVENTORY & ANALYSIS	11	LIGHTING	52
INTRODUCTION	12	SIGNAGE	54
RELATED STUDIES	12	PROPOSED JC RAIL TRAIL DESIGN	56
GREATER BINGHAMTON FUND STRATEGIC INVESTMENT PLAN (2018)	12	CHARACTER AREA A	58
ENDICOTT-JOHNSON INDUSTRIAL SPINE REVITALIZATION STRATEGY (2018)	13	CHARACTER AREA B	62
BINGHAMTON METROPOLITAN TRANSPORTATION STUDY	14	CHARACTER AREA C	70
BMTS- PEDESTRIAN PLAN (2013) & BICYCLE PLAN (2015)	16	LINKAGES	75
CURRENT INITIATIVES	17	INTRODUCTION	76
BINGHAMTON UNIVERSITY	17	REGIONAL TRAIL CONNECTIONS	77
UNITED HEALTH SERVICES	18	CONNECTING TO BINGHAMTON UNIVERSITY & ROUTE 434 GREENWAY	77
CENTURY SUNRISE DEVELOPMENT	18	CONNECTING TO VESTAL RAIL TRAIL AND WEST TO ENDICOTT	77
HISTORICAL CONTEXT	19	LOCAL CONNECTIONS	79
REGIONAL CONTEXT	20	LOOP TRAILS	79
LAND USE ADJACENT TO CORRIDOR	21	IMPLEMENTATION	81
ZONING ADJACENT TO CORRIDOR	22	PRE-CONSTRUCTION WORK	82
PROPERTY OWNERSHIP ADJACENT TO CORRIDOR	23	GRANT WRITING	82
TRAIL USE GENERATORS	24	ENGINEERING DESIGN + PERMITTING	82
RESIDENTS	24	COST ESTIMATES AND PHASING	83
INSTITUTIONS	24	FUNDING	88
PRIVATE DEVELOPMENT	26	GREATER BINGHAMTON FUND (GBF)	88
COMMERCIAL	26	CONSOLIDATED FUNDING APPLICATION (CFA)	88
PUBLIC PARKS, FACILITIES AND TRAILS	27	NEW YORK STATE OFFICE OF PARKS, RECREATION AND HISTORICAL PRESERVATION (OPRHP)	88
CORRIDOR CONDITIONS	31	OTHER STATE AND FEDERAL PROGRAMS	89
CHARACTER AREA A	32	LOCAL SOURCES	90
CHARACTER AREA B	36	PRIVATE FUNDING	90
CHARACTER AREA C	40	FOUNDATIONS	91
RAIL TRAIL DESIGN	45	NEXT STEPS	92
INTRODUCTION	46	APPENDIX A	93
COMMUNITY'S INFLUENCE ON TRAIL DESIGN	47	APPENDIX B	107
SAFETY	47	APPENDIX C	117
COMMUNITY AMENITIES	47		
CONNECTIONS	47		
DESIGN RECOMMENDATIONS APPLICABLE TO THE ENTIRE CORRIDOR	48		
PROPOSED TRAIL BRANDING	48		

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INTRODUCTION

Project Overview

The Johnson City Rail to Trail Feasibility Study is a result of the collaborative efforts of Broome County, the Town of Union, Binghamton Metropolitan Transportation Study (BMTS) and Village of Johnson City. The purpose of the study is to assess the conversion of the approximately one mile segment of the inactive Norfolk Southern Railway to a public multi-use trail, within the Village.

The Johnson City Rail Trail was identified as a priority project during the Johnson City Brownfield Opportunity Area (BOA) process and received initial implementation funding from The Greater Binghamton Fund Strategic Investment Plan in 2019.

With the Village of Johnson City being identified as an Innovation District (or iDistrict) in recent years, there has been growth in economic development in both the public and private sectors. Adjacent to the corridor United Health Services (UHS) has increased their presence in the downtown area, Binghamton University is establishing their Health Sciences Campus with School of Pharmaceutical Science and, Decker Nursing School, and recently renovated housing options including the Apartments at Century Sunrise and the Lofts @ JC. In 2017, the University received \$15 million from the State for a R&D facility to be constructed next to the Pharmacy School.

Over the past decade there have been several regional efforts to create a strong regional multi-use trail system, the Two Rivers Greenway. The JC Rail Trail, when implemented, will provide green space, recreation opportunities, an alternative mode of transportation, links to major employers, educational institutions, recent and proposed development projects, surrounding neighborhoods and parks within Johnson City while strengthening the connection to other municipalities and existing and proposed trails across the Southern Tier.



This Feasibility Study Identifies:

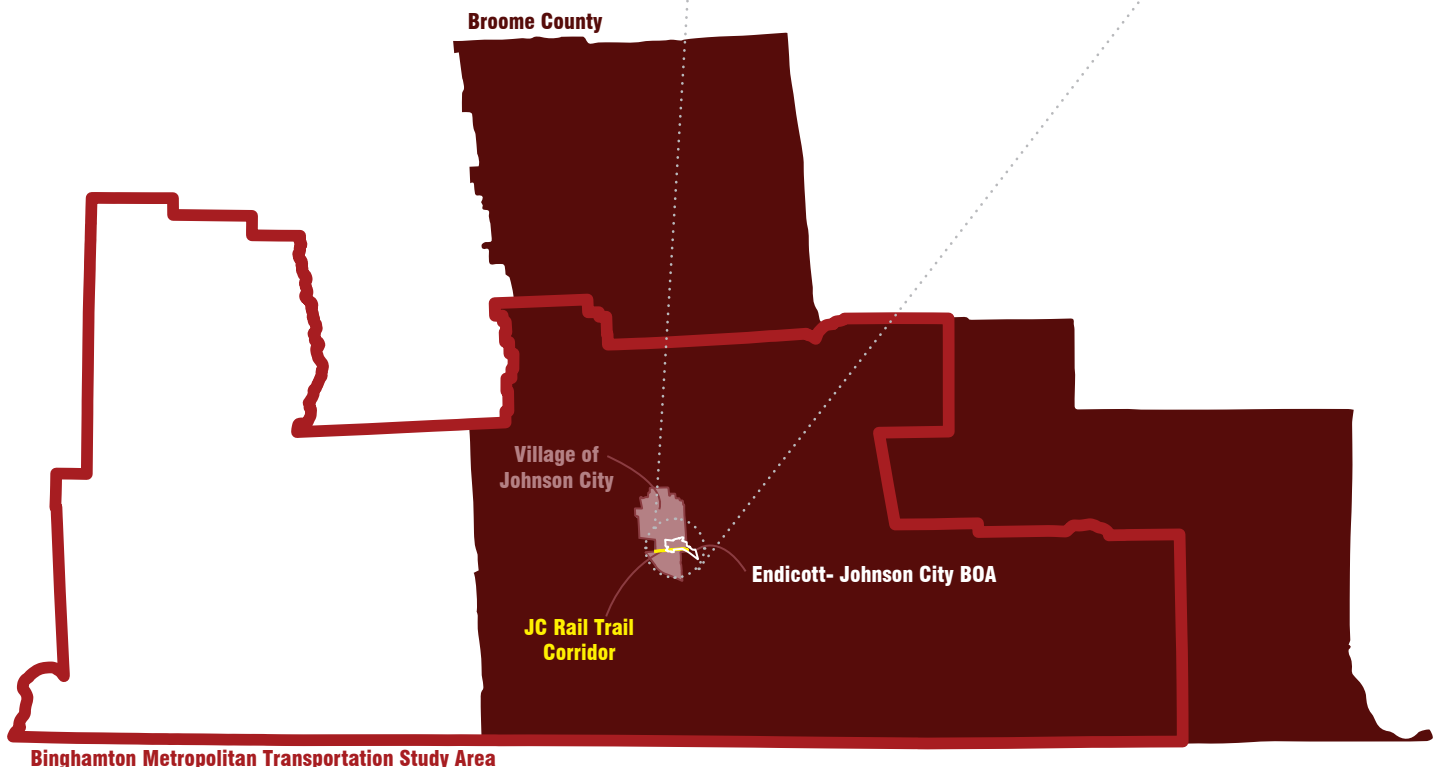
- Existing conditions
- Trail alternatives
- Proposed neighborhood and regional connections
- Recommended Trail amenities
- Preferred concept alternative
- Planning level cost estimates

Study Area Location

The Study Area is located in Broome County within the Village of Johnson City. The inactive Norfolk-Southern Railway corridor, runs west to east across Johnson City from Riverside Drive to the west to just past the Main Street overpass to Wells Avenue to the east. The corridor is approximately one mile in length and varies in width and elevation. An area within a one-mile radius of the corridor was also evaluated for potential opportunities to connect to surrounding neighborhoods, parks, and educational institutions, as well as surrounding trail systems.

LEFT : Enlargement of JC Rail Trail Corridor Project location

BOTTOM: Location of JC Rail Trail Corridor in relation to the Endicott- Johnson City BOA Boundary, Johnson City, BMTS, and Broome County.



The Planning Process

The Johnson City Rail to Trail Feasibility Study was guided by participation through a Project Advisory Committee (PAC), stakeholder interviews, and public input.

The PAC was formed with input from Broome County, the Town of Union, Binghamton Metropolitan Transportation Study (BMTS) and the Village of Johnson City.

The committee met three times over the course of four months to oversee the development of the project and provide feedback to the team.

Bergmann was hired by Broome County as a part of the BOA Step 2 consultant team to assist with the trail feasibility, conceptual design, coordination with potential affected agencies and property owners, and public outreach.

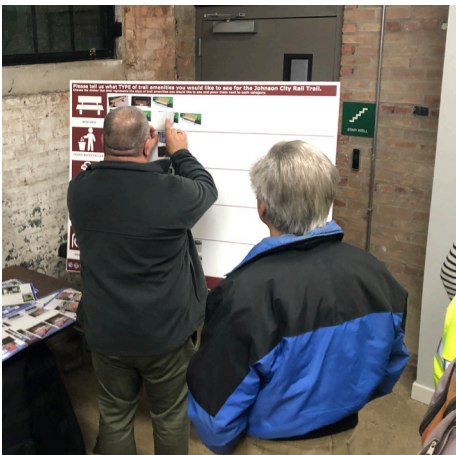
In addition to the public meetings through the Endicott-Johnson BOA and the Greater Binghamton Fund, an additional public meeting was held on November 20, 2019 specifically for the JC Rail Trail. It was an Open House style meeting where approximately 50 attendees interacted with the Village of Johnson City staff and the consultants.

Background information and project context was shared on boards displayed throughout the room. After learning specifics about the project context, location and character attendees were asked to share feedback.

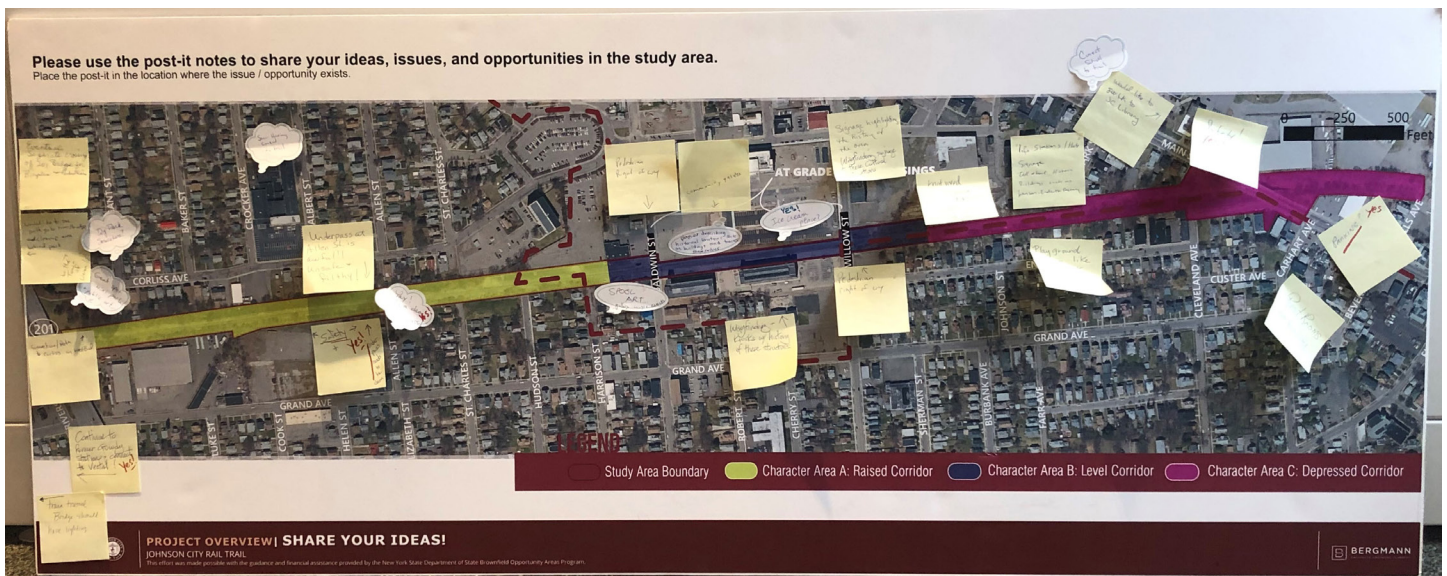
Attendees voted and shared opinions on trail type, surface, trail amenities and amenity style, as well as general comments including interest in the following:

- Commons, gardens / gathering space
- Wayfinding and interpretive kiosks
- Safe connections (senior housing/school)
- Public art
- Riverside Drive RR Bridge Removal
- Design elements for special needs population
- Playground
- Dog park
- Safety improvements (lighting)
- Connections to trestle bridge and Vestal Rail Trail
- Connection to Boland Park

See Appendix A for a full meeting summary.



Public meeting attendees participating in the board activities and conversations.



Tell us what AMENITIES you would like to see along the Johnson City Rail Trail.

Place a dot in the column that represents the amenities you would most like to see implemented.

INFORMATION HUB INFORMATION KIOSK WATER AVAILABLE WHEELCHAIR RAMP	BICYCLE/SCOOTER RENTAL	PUBLIC ART	PLAYGROUND EQUIPMENT	EXERCISE STATIONS	GATHERING SPACE / EVENT PROGRAMMING WATER TRUCKS WATER TRUCKS WATER TRUCKS	WATER FOUNTAINS / BOTTLE FILLING STATIONS

INFORMATION HUB
BICYCLE/SCOOTER RENTAL
PUBLIC ART
PLAYGROUND EQUIPMENT
EXERCISE STATIONS
GATHERING SPACE / EVENT PROGRAMMING
WATER FOUNTAINS / BOTTLE FILLING STATIONS

Tell us your preference for the Johnson City Rail Trail.

Place a dot next to the trail type and surface you would like to see.

Trail Type	Trail Surface
PEDESTRIAN ONLY	STONE DUST Pros: • Low cost • Good for drainage • Quiet Cons: • Requires frequent maintenance • Difficult to clean • Difficult to install • Difficult to maintain
MIXED-USE TRAIL (NO DEFINED TRAVEL LANES)	ASPHALT Pros: • Good for drainage • Good for maintenance • Good for cleaning • Good for painting • Good for painting Cons: • High cost • High maintenance
MIXED-USE TRAIL WITH STRIPING	CONCRETE Pros: • Good for drainage • Good for maintenance • Good for cleaning • Good for painting • Good for painting Cons: • High cost • High maintenance
SEPARATED TRAILS FOR BICYCLES AND PEDESTRIANS	PERVIOUS PAVEMENT Pros: • Good for drainage • Good for maintenance • Good for cleaning • Good for painting • Good for painting Cons: • High cost • High maintenance

Trail Type	Trail Surface
PEDESTRIAN ONLY 2	STONE DUST
MIXED-USE TRAIL (NO DEFINED TRAVEL LANES) 8	ASPHALT
MIXED-USE TRAIL WITH STRIPING 35	CONCRETE
SEPARATED TRAILS FOR BICYCLES AND PEDESTRIANS 16	PERVIOUS PAVEMENT

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INVENTORY & ANALYSIS

Introduction

The following section provides background context both physical and demographic as it relates to the JC Rail Trail Corridor. Topics include related studies, current initiatives, historical context, regional context, adjacent property zoning, land use and ownership, trail use generators and a detailed corridor conditions. The existing corridor conditions divided into three character areas, A,B and C.

Included with the descriptions is an analysis of the existing conditions as it relates to the potential JC Rail Trail implementation.

Related Studies

A number of recent studies have been undertaken in Broome County and the Johnson City area which identify the potential to convert the underutilized rail corridor within Johnson City into a Rail Trail and create connections to local and regional destinations and trail systems. These studies are summarized on the following pages.

Greater Binghamton Fund Strategic Investment Plan (2018)

In 2017, Governor Andrew Cuomo established the Greater Binghamton Fund that created financial incentives to implement transformative projects and to encourage public and private investment in the Greater Binghamton area. This area includes City of Binghamton, Village of Endicott, and the Village of Johnson City. Within each of these communities,

areas were distinguished as Innovation Districts or iDistricts. They are located within downtown, urban areas where job opportunities, mixed-use development, walkable/bicycle friendly streets, multiple transportation options, public spaces, and different business sizes all come together to revitalize the city center.

Within the Strategic Investment Plan there were 15 projects selected within the Johnson City iDistrict which included the Johnson City Rail Trail project. The plan outlines how the Rail Trail project will help revitalize the Johnson City urban center by acting as an amenity for those living, studying and working within Johnson City. The Plan further discusses how the Rail Trail will assist with downtown revitalization efforts by providing a healthy means of alternative transportation, connectivity to other areas within Johnson City and the region, drawing tourism interest, preservation of open space within a city center and giving a sense of identity to Johnson City.



What is the BOA Program?

New York State law defines a brownfield as a property whose redevelopment or reuse may be complicated by the presence of contamination. Brownfield sites are typically former industrial or commercial properties whose operations resulted in environmental impairment at levels exceeding the thresholds adopted by the Department of Environmental Conservation (DEC). The Department of State (DOS) and the DEC recognize the significant, detrimental impact that these sites have on adjacent properties and the community, and provide funding opportunities for remediation and planning through the Brownfield Opportunity Area (BOA) Program.

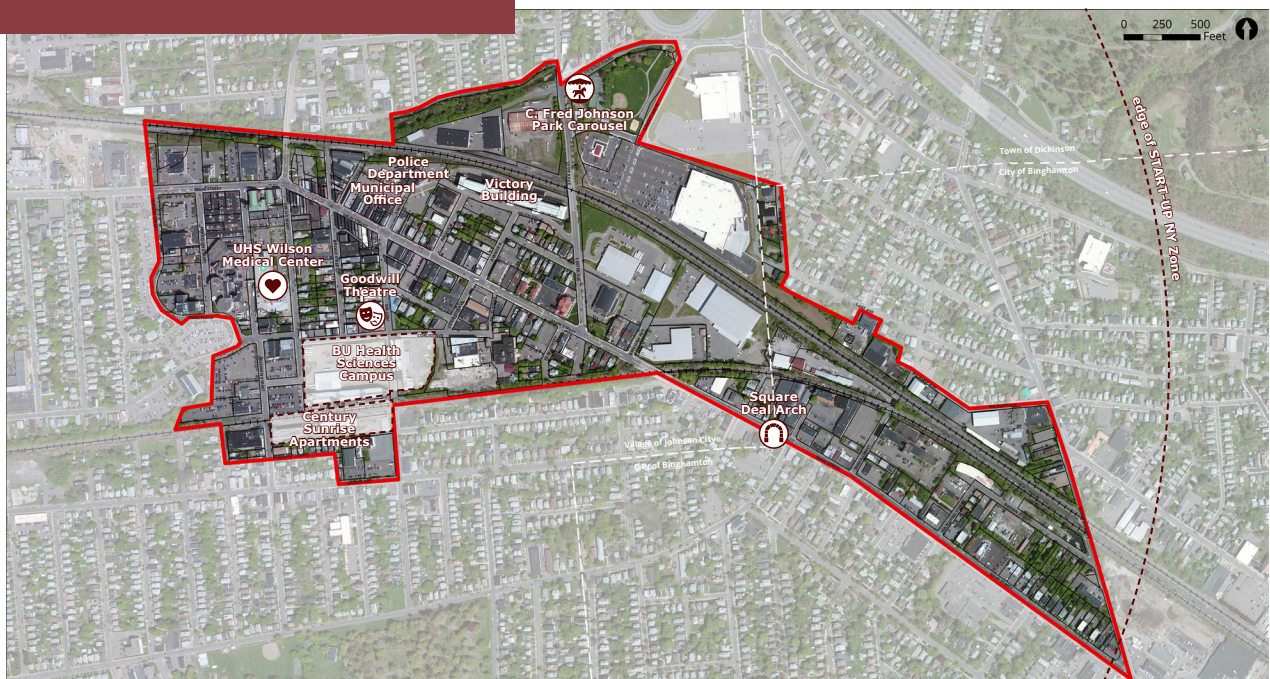
Multiple, vacant former manufacturing plants exist in Johnson City, and their remediation and redevelopment are important to re-activating the Study Area. In 2010, the study area was officially designated as a BOA, giving the Village priority access to technical resources, grant preference, and making the Village more attractive for private investment. The Revitalization Strategy recommended redevelopment projects for these sites and identified methods for implementation.

Endicott-Johnson Industrial Spine Revitalization Strategy (2018)

The JC Rail Trail Feasibility Study is funded through the Endicott-Johnson BOA. Goals identified in the BOA study included providing connectivity to Main Street, parks, residential areas and employment generators, and connecting to communities surrounding Johnson City and to other existing and planned regional trails included the Vestal Rail Trail to the southwest and proposed Route 434 Greenway to the southeast.

The plan noted that implementing the Johnson City Rail Trail will help to complete a more than eight-mile regional trail system. The JC Rail Trail Feasibility Study looks at these connections and meeting the goals of the BOA through the implementation of a multi-use trail.

BOA STUDY AREA MAP



Binghamton Metropolitan Transportation Study

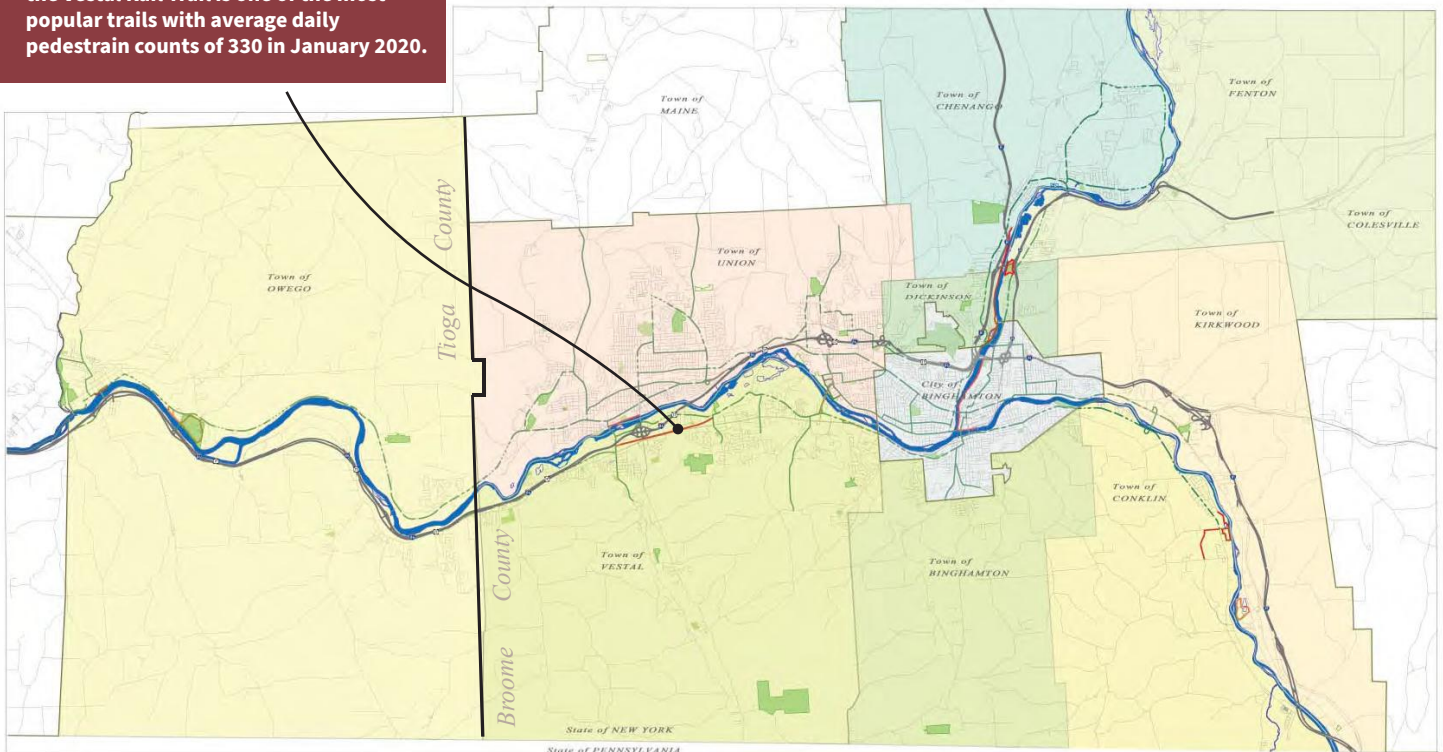
The Binghamton Metropolitan Transportation Study (BMTS) is a planning agency that is responsible for developing transportation plans and programs in the greater Binghamton metropolitan area including the Village of Johnson City. Several plans have been created that support the implementation of the Johnson City Rail Trail starting with the Binghamton Metropolitan Greenway Study in 1999.

FUN FACT

According to BMTS online trail usage, the Vestal Rail Trail is one of the most popular trails with average daily pedestrian counts of 330 in January 2020.

Binghamton Metropolitan Greenway Study (1999)

The purpose of the Binghamton Metropolitan Greenway Study to improve public access to the Susquehanna and Chenango Rivers and develop riverbank trails. Although the Johnson City Rail Trail would be a part of the Greenway Trail and it is important to recognize it as a connector to the larger regional trail network. Currently, over 13 miles of the Two Rivers Greenway Trail are complete in Broome County including the Vestal Rail Trail, Route 434 Greenway Phase 1, Chenango Riverwalk, Otsiningo Park, Chugnut Trail, Broome County Corporate Park Trail, Port Dickinson Community Park Loop, and the newly constructed Front Street Trail.



WHAT IS A RAIL TO TRAIL ?

Building healthy places for people using former rail lines.

Rail-trails are multipurpose public paths created from former railroad corridors. These paths are flat or gently sloping, making them easily accessible and a great way to enjoy the outdoors. Rail-trails are ideal for many types of activities--depending on the rules established by the local community--including walking, bicycling, wheelchair use, inline skating, cross-country skiing and horseback riding¹.

¹ <https://www.railstotrails.org/>

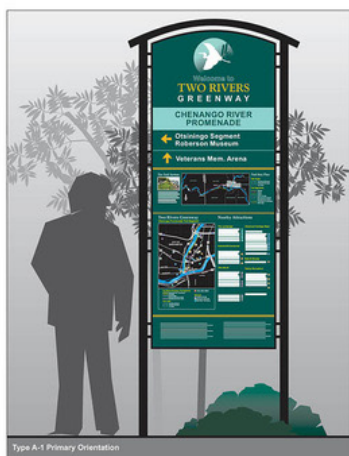
Two Rivers Greenway Design Guidelines and Signage Plan (2012)

In 2012 BMTS produced a Sign Plan and Design Guide for the regional greenway trail system.

Because the trail connects across municipal boundaries there was a need to showcase and recognize the trail as a regional, continuous system, and help users access and circulate through uniform design, wayfinding, regulations, and interpretive signing.

Out of this process a logo and name, Two Rivers Greenway, was produced to increase public recognition of this trail facility.

Because the Johnson City Rail Trail will be connected to the Two Rivers Greenway, efforts should be made to align design standards in order to reinforce that the JC Rail Trail is a part of this larger regional network.



Type A-1 Primary Orientation



Type A-2 Secondary Orientation



Type B-1 Large Trail Directional



Type B-2 Small Trail Directional

Type B-3 Directional Pylon



Type C-1 Trailblazer



Type D-1 MUTCD Vehicular Directional

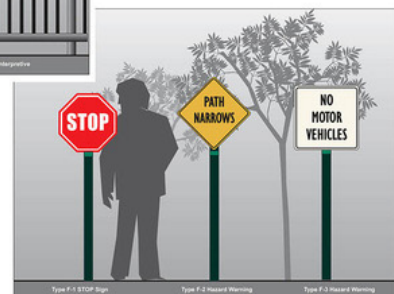


Type E-1 Free Standing Interpretive

Type E-2 Rail Mount Interpretive

TWO RIVERS GREENWAY

Signage Concepts



Type F-1 STOP Sign



Type F-2 Hazard Warning



Type F-3 Hazard Warning

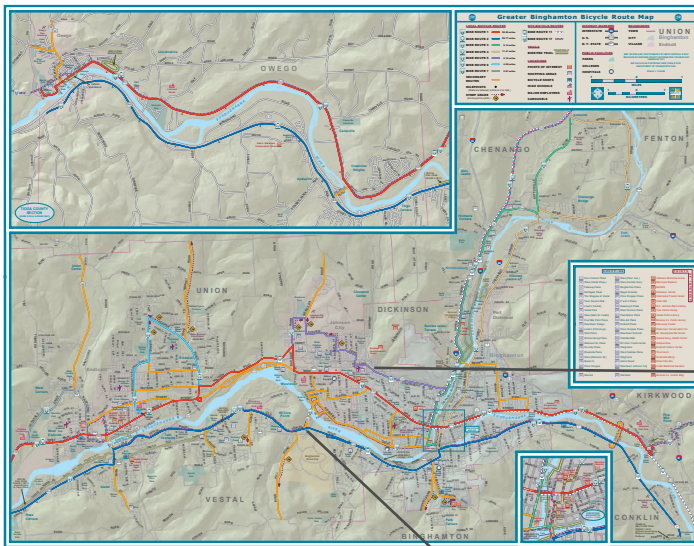
BMTS- Pedestrian Plan (2013) & Bicycle Plan (2015)

In compliance with the federal Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), the Transportation Plan for the Binghamton Urban Area, *TRANSPORTATION TOMORROW: 2020* called for the development of a Pedestrian and Bicycle Plan. The goal of this plan is for the increased safety for those traveling on foot or by bicycle within the Binghamton Urban Area.

Then in 2010, the *TRANSPORTATION TOMORROW: 2035 – Creating a Sustainable Future*, called for the BMTS Pedestrian & Bicycle Plan to be updated. The plan was updated starting with the Pedestrian Plan in 2013 and the Bicycle Plan followed in 2015.

The Bicycle Plan discusses a culture change in which bicycling is recognized as a viable mode of transportation. The plan states that “by providing safe and convenient bicycle facilities, the community can ensure that all citizens have access to a viable mode of transportation.”

The plan also indicates multi-use trails as the safest bike facility option. The Johnson City Rail Trail can be an alternative safe route as it splits through two dedicated bike routes Main Street and Floral Ave. There is also the potential to encourage citizens who are less enthusiastic about biking to use this alternative variation of transportation by feeling safe.



Proposed Johnson
City Rail Trail



Current Initiatives

Binghamton University

Now that the Village of Johnson City is no longer home to the bustling factories of the Endicott Johnson Corporation, as it was decades ago, Binghamton University (BU) is actively engaged in the revitalization of the Village. In recent years BU, with funding assistance from New York State and Regional Economic Development Council, has made major investments into a new 11-acre Health Sciences Campus in Johnson City.

The campus includes a 105,000 square foot, four story building that houses the School of Pharmacy and Pharmaceutical Sciences. The school is projected to enroll approximately 400 students in various pharmaceutical degree programs. Adjacent to the Pharmacy school is the location of the future Decker School of Nursing, where a former manufacturing facility is being adapted. The project is expected to be completed in 2020.

Along with these changes, the BU Geography Department has launched the Johnson City Revitalization Project, a story mapping project that organizes information to tell the story of the revitalization process as it is happening. They have collected historical data, as to how the community has changed since the 1960s and they are now looking at the impact of state dollars and BU's assistance to growing the local economy. The Johnson City Redevelopment Story Map is being documented and shared online (<https://jc-redevelopment.binghamton.edu/>).

Both the Pharmacy and Nursing schools are projected to attract over 1,000 students, instructors, and support staff to Johnson City. These schools have the potential to be a major generator of trail users. The location of the campus is directly adjacent to the JC Rail Trail however, access from the properties are limited due to exiting fencing.



Photo was taken as a screen shot from the "Introduction to Story Map Project" video at <https://jc-redevelopment.binghamton.edu/>

United Health Services

United Health Services (UHS) is one of the major medical providers in the area and is currently making improvements to the Wilson Medical Center. Projects include improvements to an existing parking garage facility which will help to alleviate parking supply issues in the hospital area, and the construction of a new four-story Gateway Building which will provide additional office space and dining options.

With the new synergies between the two healthcare related institutions, UHS and the BU Health Sciences Campus, though clinical, research and training opportunities, there is a clear vision to transform this area from a former industrial hub to a nexus for cutting-edge medical research.

The location of the Wilson Medical Center, Wilson Memorial Hospital and other medical assistance facilities are located directly adjacent to the Johnson City Rail Trail however, access restricted due to exiting fencing.



Google Street view of UHS Wilson Medical Center.

Century Sunrise Development

Once part of the Endicott-Johnson Shoe Factory, the two vacant buildings on Baldwin Street were transformed into mixed-use development with affordable housing of 104 apartment units and 9,000 square feet of commercial space. The development is part of Southern Tier Soaring, the State's comprehensive plan to revitalize communities and grow local economies.

The location of these buildings is directly south of the JC Rail Trail, with direct access at Baldwin Street and Willow Street however, existing fencing restricts access between these two intersections.



Century Sunrise Residences

Historical Context

The Village of Johnson City is rooted in the Endicott Johnson Corporation, a shoe company that employed more than 20,000 workers in the mid 1940s when the company produced 52 million shoes a year.

Johnson City is also known as the home of the Square Deal. After George F Johnson became half owner of Endicott Shoe Company in 1899 he advocated for worker benefits. Because the growth of Johnson City was built alongside the growth of the Endicott Johnson Corporation, an advocate for worker benefits, the factory town was constructed with amenities that were walkable from homes and workplaces. The streets were wide with sidewalks along both sides.

The Johnson family provided financial assistance for many of the community's parks and public facilities; two libraries, theaters, a golf course, swimming pools, carousels, and food markets, many of which were available to the community without charge.

Along with industrial revolution and growth of the shoe factories in the Southern Tier, was the spread of railroads. In 1848 the Broome County area became a major transportation hub.

After the Endicott Johnson Shoe Co. was sold and moved out of Broome County in the late 1990s, the railroad owned by Norfolk Southern Railway from Vestal to Johnson City closed due to a structural bridge across the Susquehanna River has been deemed unsafe for train weight. Without the need for this line and condition of the bridge the segment has been inactive.



Above are a few of the over 100 trademarks for shoes, hosiery, clothing, rubber soles, and counters produced by Endicott-Johnson Corporation.



Postcard view of one of the Johnson City (then Lestershire) factory complexes, with active railroads. "Where the world's most famous shoes for the working men are made. Daily capacity 20,000 pairs."



View from William Hill Park of the decommissioned bridge along the Norfolk Southern Railroad corridor to the west of the proposed JC Rail Trail.

Regional Context

Situated between the Town of Vestal and the City of Binghamton the JC Rail Trail will bridge the gap between two trail systems currently in use. The JC Rail Trail will provide an alternative, healthy means of transportation between key nodes in Greater Binghamton.

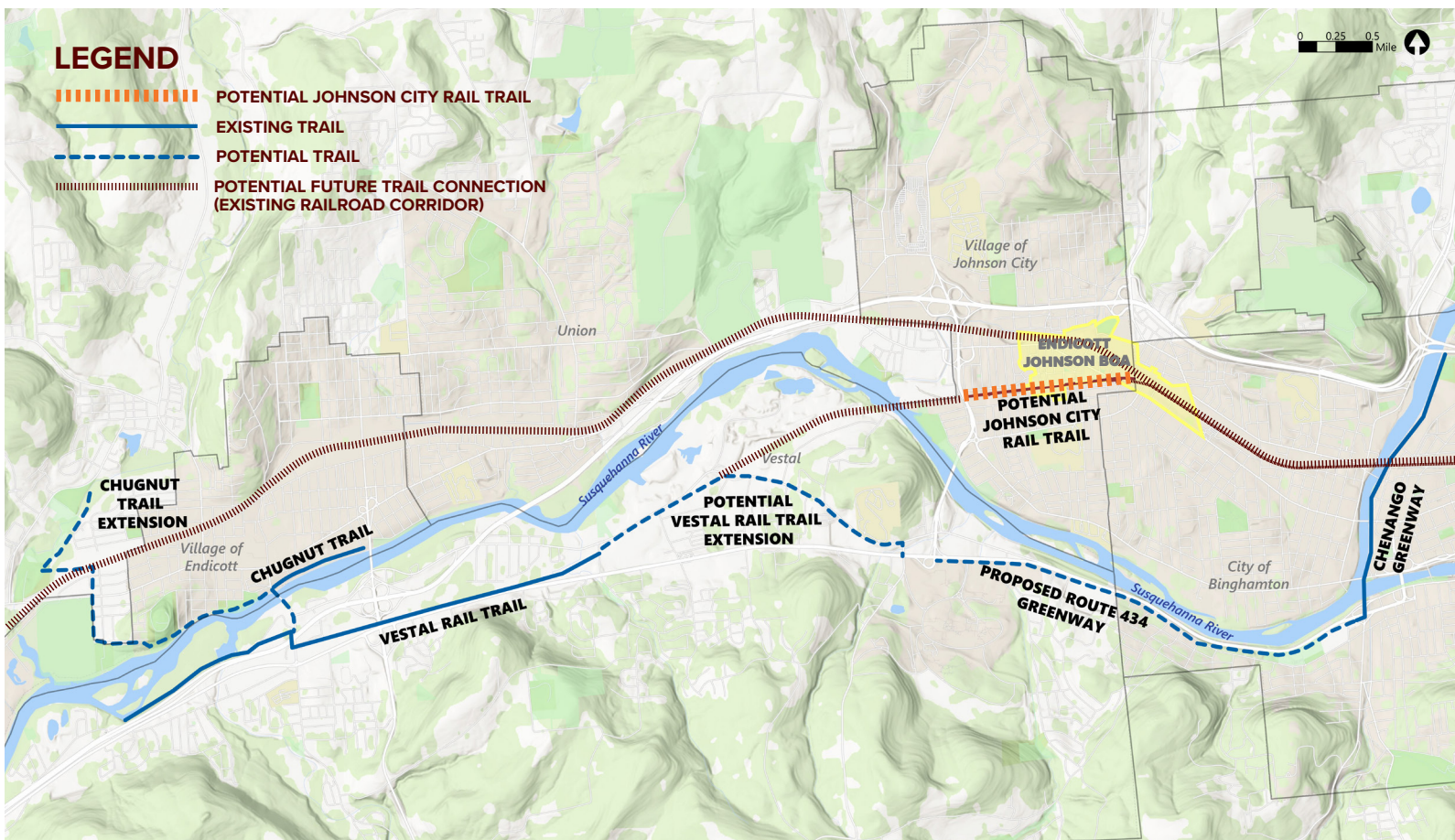
Along with various parks surrounding the study area there are many regional trails (the Two Rivers Greenway) near the proposed JC Rail Trail:

- The Vestal Rail Trail
- Chugnut Trail
- Chenango Greenway

The proposed Greenway trail in Binghamton that will run east to west along Route 434 will help bridge the gap between the Vestal Rail Trail in Vestal and the Chenango Greenway on the eastern border of the City of Binghamton. There is potential for the JC Rail Trail to connect into the Route 434 Greenway to connect the trails together.

The Binghamton River Trail located at the junction of the Chenango and Susquehanna Rivers in Binghamton may eventually link with the Vestal Rail Trail and Chenango Greenway with the proposed Route 434 Greenway.

Located to the south of Johnson City is the SUNY Binghamton University main campus. Along with the Health Sciences Campus in Johnson City, Binghamton University is heavily invested in the area.



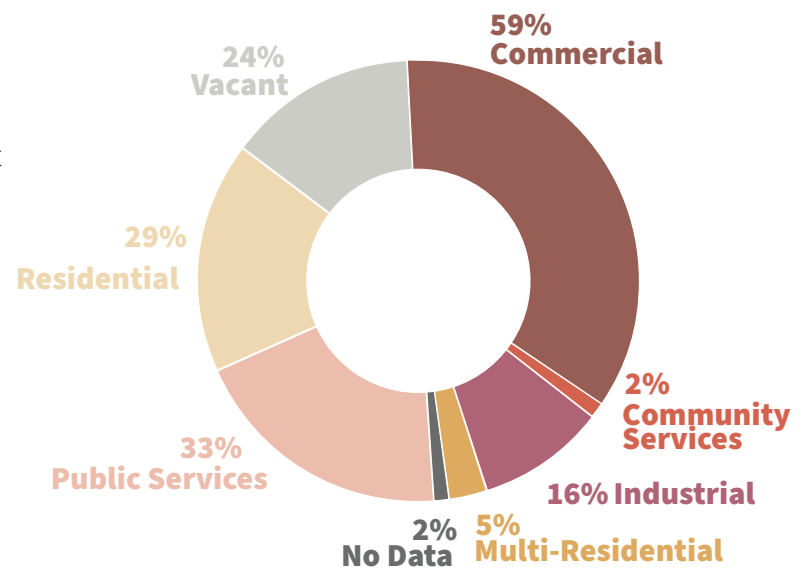
Land Use Adjacent to Corridor

The predominant land uses adjacent to the corridor is residential (single family and multi-residential).

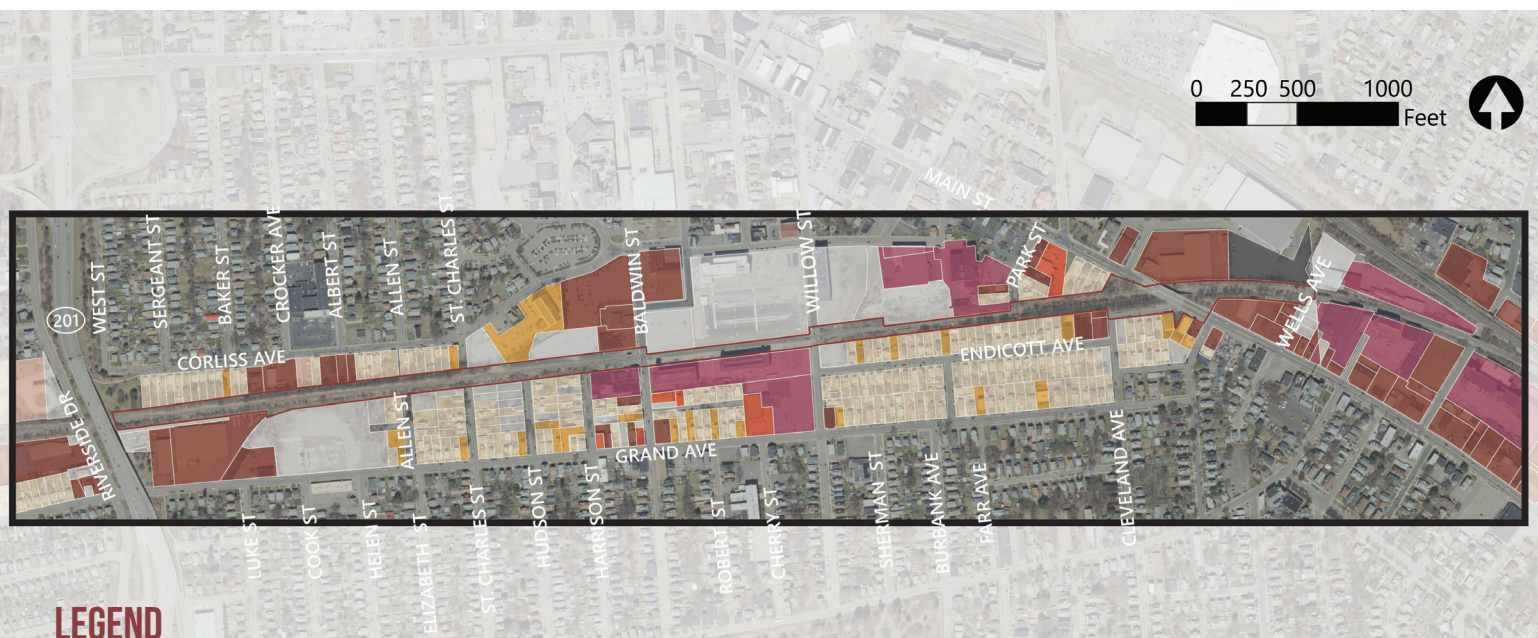
A majority of the land on the north side of the trail near Baldwin Street and Willow Street, labeled vacant on the map below, are now part of the BU Health Sciences Campus.

There are some public and community services located near the corridor, including churches (Valleyview Alliance Church on Baldwin Street and Faith Evangelistic Church on Grand Avenue) and the Islamic Organization on Grand Avenue. An the UHS Wilson Medical Center is blocks away.

The land uses adjacent to the corridor is a great case as to why the conversion of this corridor to a multi-use trail can be achieved. In addition, having residents along a multi-use trail corridor can be beneficial, by developing a feel ownership for the space can empower the community to use the trail and more use makes it a safer place.



Land Use of adjacent properties determined by parcel area.



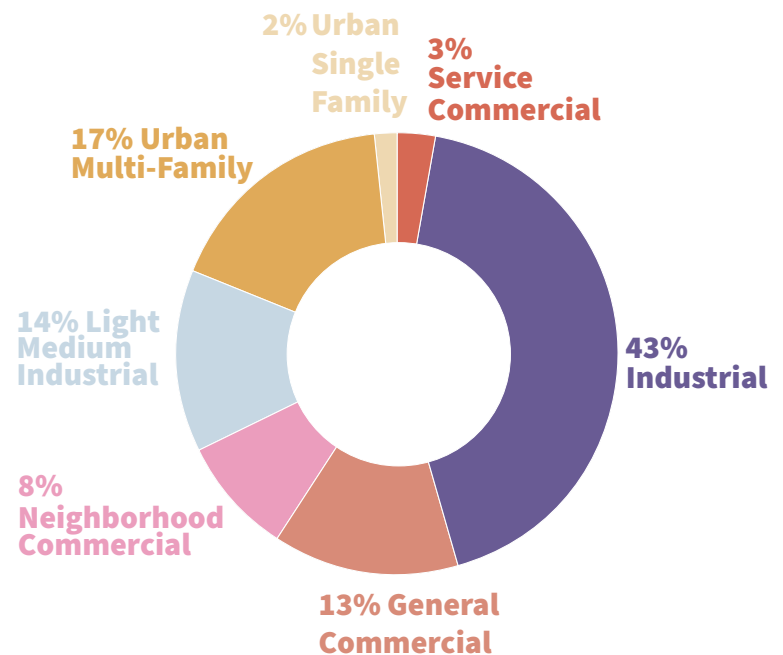
LEGEND

 Study Area Boundary	 Commercial	 Multi-Residential	 Vacant
 Community Services	 Public Services	 Industrial	 No Data
 Residential			

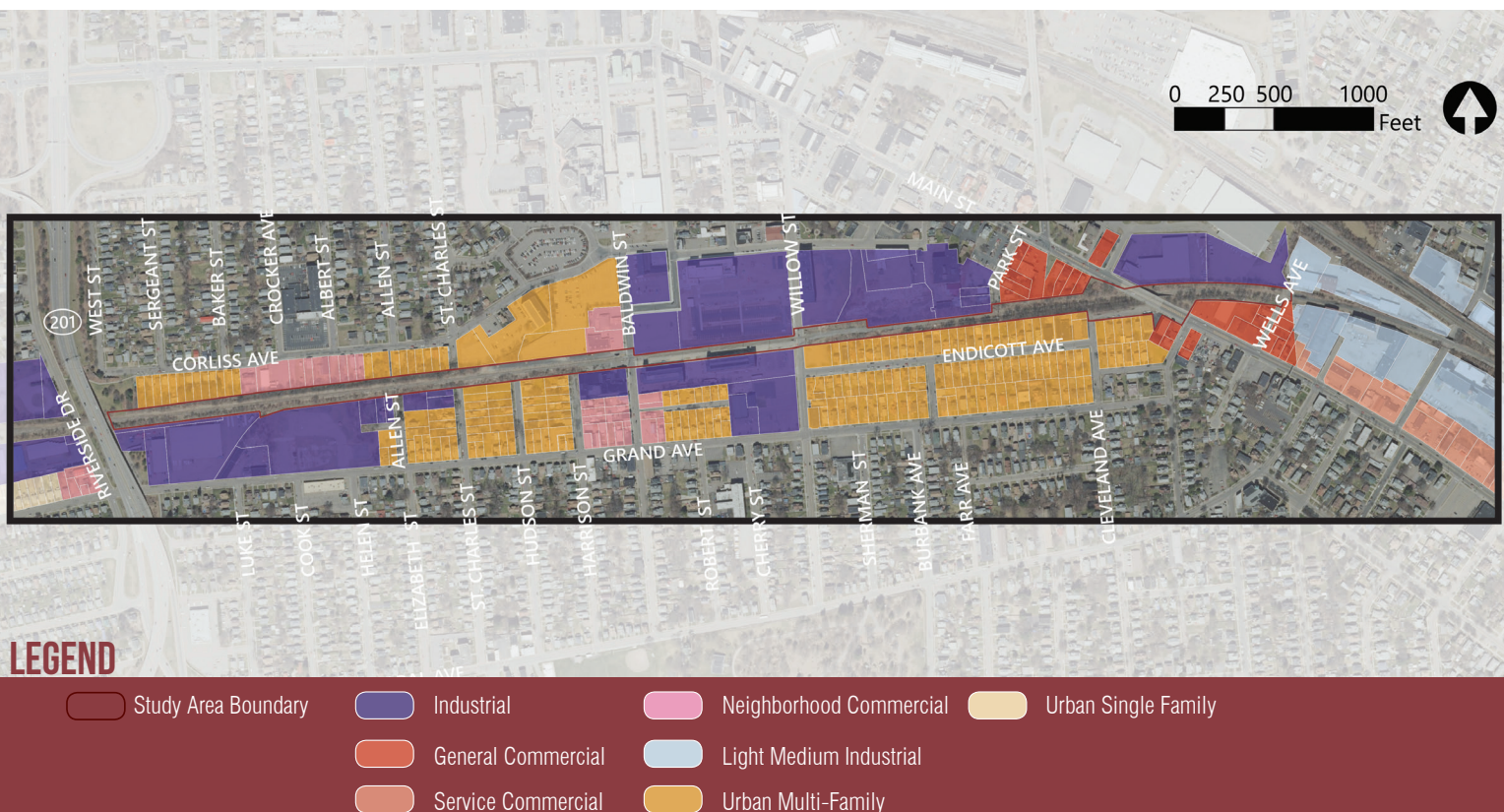
Zoning Adjacent to Corridor

Areas adjacent to the corridor are mostly zoned as residential (Urban Multi-Family, Neighborhood Commercial), with some, commercial (General Commercial) and industrial, zones. The major areas zoned as industrial in the mid section of the corridor are part of the BU Health Sciences Campus and house various UHS Medical Facilities, as well as the recently constructed Century Sunrise Apartments.

Because of the high volume of residential zoning and uses of the industrial zoned areas, the JC Rail Trail will have a higher potential of success.



Zoning of adjacent properties determined by parcel area.



Property Ownership Adjacent to Corridor

Norfolk Southern Railroad currently owns the rail corridor within the Village of Johnson City. Norfolk Southern has indicated that they would like to sell the full extent, approximately 3.75 miles, of the inactive rail corridor from Vestal to the City of Binghamton as part of one purchase agreement. The Village, Broome County and project partners are actively engaged with Norfolk Southern to explore various purchase or lease options for this portion of the trail. The section of rail bed within the Village of Johnson City is starting to show some signs of decay but the overall condition is satisfactory when considering future use as a trail.

Most of the properties along the rail corridor, within the Village of Johnson City, are privately owned by residents, developers, businesses, and institutions.

One of the results of the corridor's dormancy has been the encroachment of adjacent properties onto the corridor. According to the available parcel data, the new parking lots and driveway for the Century Sunrise Apartments are located in the ROW of Norfolk Southern rail corridor.

From a design perspective there are several opportunities to enhance the trail with complementary amenities and access points. This may require coordination and purchase or donation of easements from adjacent property owners. One such example is the potential for a public gathering space and access from Faatz Alley/Arch Street, at the terminus of Arch Street. This land straddles two properties, one, to the west, is a parking lot owned by Bay Reality Three LLC, and the second, to the east, is the BU School of Pharmacy and Pharmaceutical Sciences, owned by People of the State of NY SU.



Trail Use Generators

There are a variety of residential, commercial, educational, and industrial uses along, and proximate, to the rail corridor. These uses are the primary local generators for potential users of the JC Rail Trail. The map on the next page shows proximity to the trail for each of the following mentioned generators.

Residents

The residents in Johnson City and the surrounding neighborhood will be a part of the primary users of the trail. 20% of the population in the Village of Johnson City consists of people under the age of 18 making the JC Rail Trail a great recreation opportunity for the youth. Currently, the 2019 demographic data also shows that 13% of the population is between 15-24 years of age. This number is expected to rise with the increase in Binghamton University's Health Sciences Campus presence also increasing potential trail use.

Just over 7% of the work force in Johnson City walk or bike to work. The creation of the JC Rail Trail provides an opportunity to increase these statistics by increasing connections.

POTENTIAL TRAIL USERS

Village of Johnson City Population
15,000

UHS **1,100** daytime employees

BU undergraduate enrollment
14,000

BU Health Sciences Campus **1,000**
+ students faculty staff

Institutions

Binghamton University School of Pharmacy and Pharmaceutical Sciences opened in 2018 and is located one block from the proposed trail corridor. The students attending this school are no longer living within on campus dormitories; rather they are living "off campus". Accommodations for these students will most likely be within the vicinity of the Village of Johnson City and neighboring areas such as Vestal, Binghamton, and Endicott. Students, as well as faculty and researchers all have the potential to be frequent users of the rail trail. While parking is at a premium within the village students and faculty may enjoy the availability to walk or bicycle from home to campus via the rail trail.

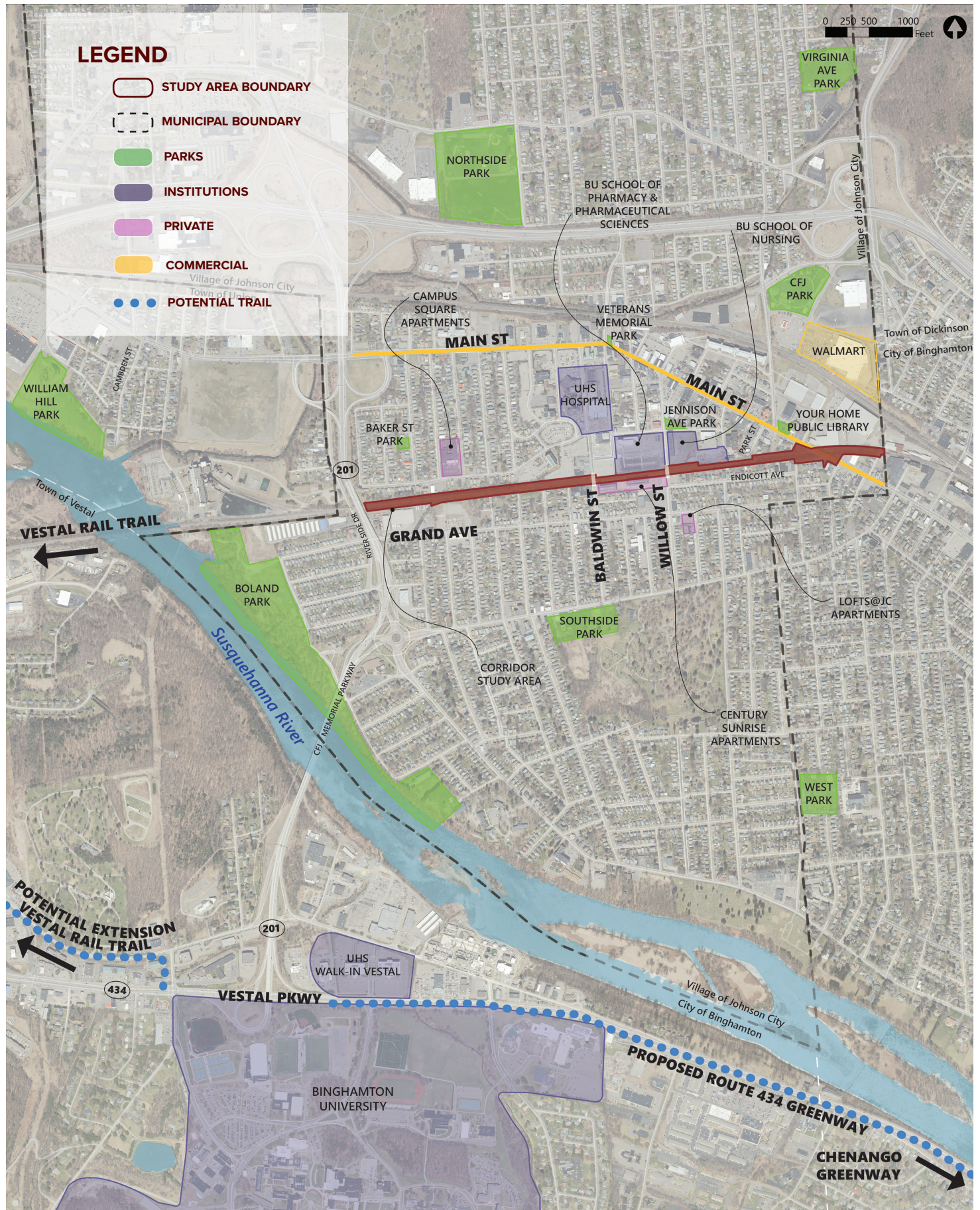
Binghamton University Decker College of Nursing and Health Sciences. Anticipated to be complete in 2020, the new home to the Decker College of Nursing will hold classes for both undergraduate and graduate degree programs. These students will be living both on the main campus and off campus. For those living on campus at nearby Binghamton University utilizing the rail trail within Johnson City would be an attractive, safe, option for commuting to the newly renovated building.

United Health Services (UHS) Medical Facilities.

Located adjacent to the rail corridor are multiple facilities owned and operated by UHS, including the Wilson Medical Center. These facilities allow for outpatient and inpatient care. There are various medical buildings surrounding the Wilson Medical Center for additional medical services such as primary care.

The employees, patients and their families potentially live within the vicinity of Johnson City, Binghamton, and Vestal. The additional rail trail will allow for an alternative mode of transportation to and from UHS as well a recreational amenity to be used by employees during breaks, by patients and their visitors, and as a connection to various retail and dining options.

TRAIL USE GENERATORS MAP



Private Development

Century Sunrise Residences. Two historic Endicott-Johnson Company buildings (Century and Sunrise Buildings) have been recently renovated and converted to residential and retail uses. Advertised as mixed income apartments they cater to various sectors of the population. Rents for these apartments are a mix of market rate, moderate and affordable income. The apartments welcome tenants with special needs. Combined, both buildings house 105 apartments that vary from 1 to 3 bedrooms with potential maximum capacity to be **380 occupants**. Available retail space within the Century Building has the potential to become a destination for local residents and benefits from direct ADA compatible access to the proposed trail.

The potential for tenants of the apartment building to use the rail trail is high. The diversity of renters indicates that the availability of the rail trail for commutes to work, school, and shopping will be an attractive amenity.

Lofts@JC. In 2019, AOM Investments LLC, began construction on the Lofts@JC, a modern, three-story, multi-family apartment building in the heart

of the Village on Grand Avenue just south of the rail corridor. Anticipated to be complete in July of 2020, the building advertises modern facilities and apartments to house approximately **54 occupants**. The projected renters at this location are students and faculty of the Binghamton University Health Sciences Campus and staff of the various UHS medical facilities. Potential tenants may also see the rail trail as a recreational amenity or to use as an alternative mode of transportation to the main University campus.

Campus Square. This apartment building is off-campus student living is located north of the corridor near the west end, in between Crocker Avenue and Albert Street along Corliss Ave.

Commercial

Main Street is a mixture of residential, office and retail, including medical offices, pharmacies, places of worship, services, grocery and restaurants.

Walmart. The super center retail store with grocery, apparel, electronics, furniture, appliances, and home goods is a destination for many residents and workforce in and around Johnson City.



Lofts @JC- Rendering of proposed new rentable units (<https://loftsatbinghamton.com/lofts-jc/>)

Public Parks, Facilities and Trails

Within one mile to the rail corridor are multiple parks and recreational amenities. The parks and trails mentioned below are mapped on the Trail Use Generators Map at the beginning of this section.

Northside Park is located north of NYS Route 17 within a mile of the corridor. It features a wading pool, playground equipment, a basketball court, picnic pavilions, Little League & Pony League fields and restroom facilities.

Boland Park is a riverfront park along the Susquehanna River and is located southwest of the rail corridor. The park includes a playground, basketball courts, soccer fields, a pavilion and some aging tennis courts.

Baker Street Park is a small neighborhood park located on Baker Street near the west end of the corridor about a quarter of a mile walk. It has a playground and open green space.

Floral Avenue Park and Floral Park Cemetery.

Floral Avenue Park is 0.2 miles south of the proposed rail trail corridor. The park has a wading pool, basketball, tennis and volleyball courts, a softball field, playground equipment and restroom facilities. The Floral Park Cemetery is approximately 50 acres and located directly next to and behind Floral Avenue Park. The cemetery is an opportunity for more passive recreation in the form of walking and bird watching.



Floral Avenue Park

CFJ Park is located 0.5 miles near the east end of the trail. It is named for Charles F. Johnson, the brother of George F. Johnson the co-owner of Endicott-Johnson Company. Created in 1923 for Endicott-Johnson employees and the community of Johnson City, this park has historical and social significance in the community. Located within the park is a carousel given as a gift to the children of Johnson City from George F. Johnson. Other amenities within the park include a spray park, little league and softball field with lights, basketball, volleyball and tennis courts, playground equipment, picnic pavilions and restroom facilities.

Baker Street Park is a small neighborhood park located on Baker Street near the west end of the corridor about a quarter of a mile walk. It has a playground and open green space.

Virginia Avenue Park is the farthest park, still within a mile of the corridor north of Southern Tier Expressway, NY- 17. It is a neighborhood park with a small playground area, softball fields with a concession stand and bathroom facilities.

Jennison Avenue/Willow Street Park is located .10 of a mile north, on the corner of Willow and Corliss, it is a small green area with a path, garden and sheltered picnic table.

Veterans Memorial Park is about .40 of a mile, located on the corner of Arch Street and Main Street, it has a gazebo and a gateway sign to the Historic District.

Your Home Public Library is .10 of a mile, located on Main Street near the east end of the corridor. The green space outside the library has an small outdoor amphitheater and benches.

William Hill Park is located in Vestal to the northwest of the rail corridor. The walking distance is close to 1.1 mile. This park has a baseball field and space for other active recreational opportunities. This park also has the advantage of being located along the Susquehanna River.

Vestal Rail Trail is a part of the Two Rivers Greenway and runs for nearly four miles through the town of Vestal. There is a potential to extend the 12-foot-wide paved trail to Johnson City.



CFJ Park



William Hill Park



Vestal Rail Trail. Photo Credit:
<https://rc-pedalpoint.blogspot.com/2014/07/vestal-rail-trail.html>

KEY TAKEAWAY

THE RAIL TRAIL MAY BE USED TO ACCESS THE DIFFERENT PARKS AND PROVIDE A SAFE EAST-WEST TRAVEL PATH TO AND FROM THE DIFFERENT PARK AREAS. MOST OF THESE PARKS ENCOURAGE ACTIVE RECREATION AND THE RAIL TRAIL MAY PROVIDE AN OPPORTUNITY FOR MORE PASSIVE RECREATION COMPLIMENTING THE DIFFERENT USES OF THE PARKS.

REASONS A TRAIL MAY INCREASE BIKE TRAVEL

TYPES OF CYCLISTS

In general, bicyclists can be categorized into four distinct groups based on comfort level and riding skills¹. Bicyclists' skill levels greatly influence expected speeds and behavior, both in separated bikeways and on shared roadways. Each of these groups has different bicycle facility needs, so it is important to consider how different facilities can accommodate each type of cyclist in the greater bicycle network.

By incorporating an off-road trail with connections via shared/on-road infrastructure can provide a comfortable experience for the greatest number of people. The characteristics, attitudes, and infrastructure preference of each of the four generalized cyclist types are described below.

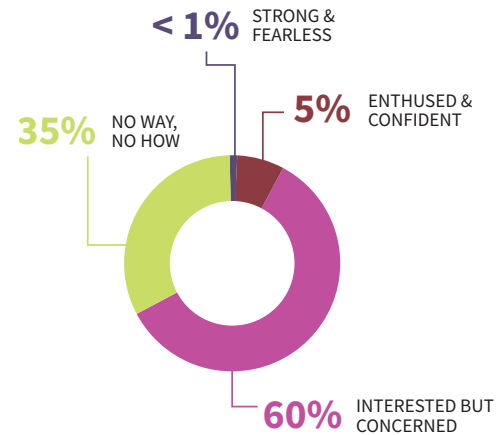
STRONG AND FEARLESS

Characterized by bicyclists that will typically ride anywhere regardless of roadway conditions or weather. These bicyclists can ride faster than other user types, prefer direct routes, and will typically choose roadway connections – even if shared with vehicles – over separate bicycle facilities, such as shared use paths.

ENTHUSED AND CONFIDENT

This user group encompasses bicyclists who are fairly comfortable riding on all types of bikeways, but usually choose low traffic streets or shared use paths when available. These bicyclists may deviate from a more direct route in favor of a preferred facility type. This group includes all kinds of bicyclists, such as commuters, recreationalists, racers, and utilitarian bicyclists.

TYPES OF CYCLISTS



INTERESTED BUT CONCERNED

This user type comprises the bulk of the cycling population and represents bicyclists who typically only ride on low traffic streets or multiuse trails under favorable weather conditions. These bicyclists perceive significant barriers to their increased use of cycling, specifically traffic and other safety issues. These people may become “Enthusied and Confident” with encouragement, education and experience, and more protected facilities, such as buffered and protected bike lanes.

NO WAY, NO HOW

Persons in this category are not bicyclists and perceive severe safety issues with riding in traffic. Some people in this group may eventually become more regular cyclists with time and education. A significant portion of these people will not ride a bicycle under any circumstances.

Strong and Fearless



Enthusied and Confident



Interested but Concerned



¹ Geller, Roger. 2009. Four Types of Cyclists. City of Portland Bureau of Transportation. Supported by data collected nationally since 2005.

Corridor Conditions

The existing Norfolk Southern railroad corridor within the study area runs west to east and is located between Riverside Drive to the west and Wells Avenue to the east. The corridor is approximately 6,000 feet in length and varies in width and elevation. Throughout the entire corridor the railroad tracks, ties and ballast are still present.

For the ease of organizing and evaluating the feasibility of this project, the potential trail corridor was divided into three Character Areas, A, B, & C.

In Character Area A, the corridor starts at Riverside Drive as an elevated rail bed crosses over Riverside Drive and under Route 201, it continues to be elevated for about 2,413 feet.

In Character Area B, the corridor elevation becomes level with adjacent grades as it intersects with Baldwin Street and Willow Street (the only two streets that cross the corridor in the study area).

In Character Area C, the elevation gradually decreases resulting in a tunnel under Main Street overpass, where the corridor also slightly curves meeting grade at Wells Avenue.



AREA A: RAISED CORRIDOR

The rail bed from Route 201, to just before Baldwin Street is situated at a higher elevation than adjacent residential and commercial areas.

AREA B: LEVEL CORRIDOR

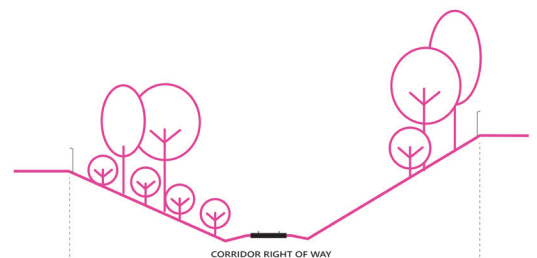
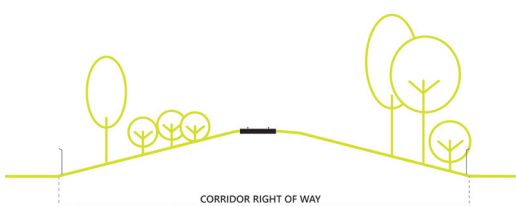
The rail bed from Baldwin Street past Willow Street is situated at grade and is located among the new development and busier area of the Village

AREA C: DEPRESSED CORRIDOR

The rail bed to the east ending at Wells Ave, is situated at a lower elevation than the adjacent residential area.



Typical Sections of each Character Area



Character Area A

Corridor Character

The existing vegetation along Character Area A corridor varies from low invasive shrubs and weeds to larger deciduous trees. The higher vegetation to the north presents a wall that does not allow for views beyond the corridor edge.

While this section of the corridor is elevated, the dense vegetation offers few open views, fills in the slope from the chain link fence along the right of way on both sides making access unfeasible and creates a feeling of seclusion.

There is a significant amount Japanese Knotweed (*Polygonum cuspidatum*). This invasive plant species tends to spread rapidly and shade out native vegetation. At the Route 201 open space area there are some small juvenile Knotweed plants. However, from Albert Street to Harrison Street there are many large, thick areas of Knotweed.

Starting at Albert Street (about halfway point of this character area) the corridor has residential homes on both sides of the corridor.



- A.** View Looking south west capturing the terminus of St. Charles Street, demonstrates elevation change from adjacent neighborhood.
- B.** Looking west under Route 201 overpass.
- C.** Open corridor view looking east with dense vegetation along the north side of the corridor.
- D.** View from Riverside drive with elevated rail crossing and sidewalk to Corliss Ave.
- E.** View of corridor looking west at showing dense Japanese knotweed and typical elevation difference to adjacent neighborhoods on Allen Street.



OPPORTUNITIES

- Open space for trailhead at Route 201/ Riverside Drive connection
- Multiple access points from the south are available
- Existing tunnel may be upgraded and utilized to connect the north and south sides of the corridor
- Wide width of right of way allows for options of amenities along the rail corridor

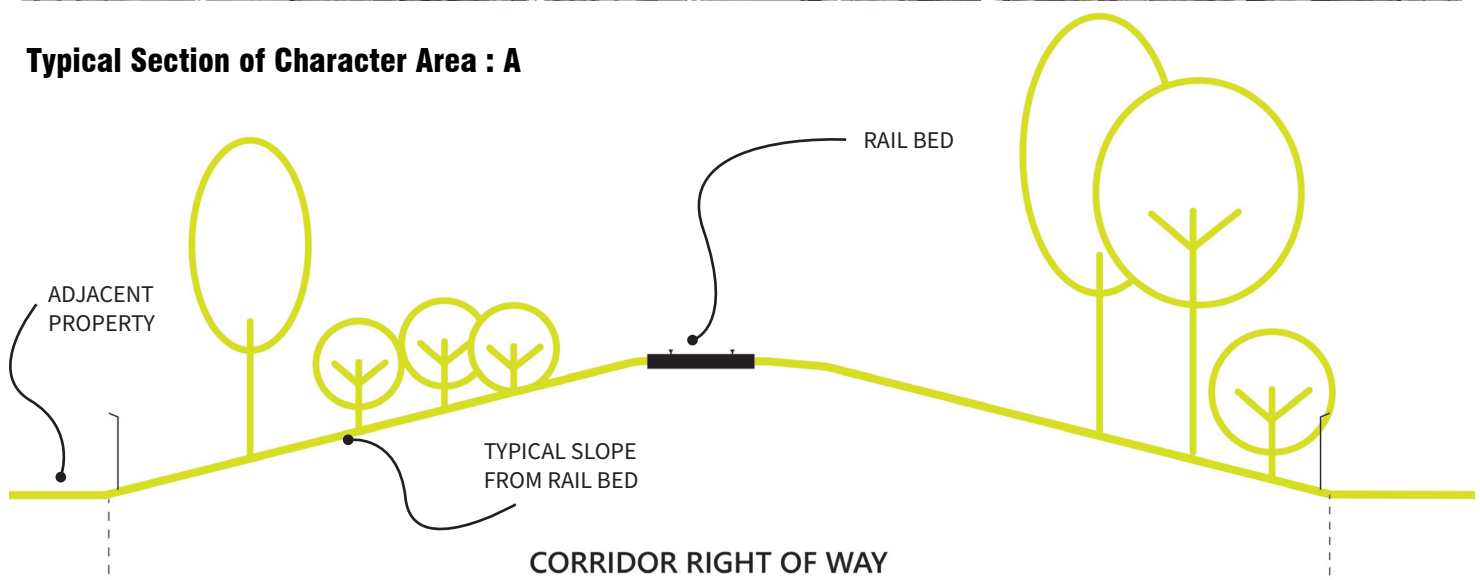
CONSTRAINTS

- Large stands of Japanese Knotweed will need to be removed
- Access to and from north side of the rail corridor is limited due to private ownership of adjacent properties
- Existing tunnel is in need of repair
- Steep slopes on either side of the rail corridor impact handicap accessibility to railbed area

AREA A: RAISED CORRIDOR



Typical Section of Character Area : A



JAPANESE KNOTWEED

Once sold in plant catalogs in the late 1800s Japanese knotweed became viewed as a problematic pest by late 1930s. Now it is an invasive perennial that threatens diverse native plant communities.

The appearance of knotweed is woody and can be mistaken for a shrub. The plant, however, is herbaceous, the stems are smooth and hollow, resembling bamboo. The plant can grow up to 15 feet tall and horizontal roots can reach lengths of 65 ft. As with many invasive, knotweed thrives in disturbed areas. Once it is established can spread rapidly by seed, stem fragments and shoots by sprouting from its system of rhizomes.

Once established, populations of Japanese knotweed are extremely persistent and hard to eradicate

REMOVAL

For established stands such as along the corridor in Johnson City the NYS DOT recommends two options for removal.

Herbicide: This treatment can adequately control Japanese Knotweed, but it is usually not possible unless the entire stand of knotweed is treated (otherwise, it will re-invade via creeping rootstock from untreated areas).

Excavation: This treatment is usually limited by cost and availability of spoil disposal sites. Excavation must be a minimum of six feet in depth and filled with suitable uncontaminated fill.



Japanese Knotweed along corridor.

http://nyis.info/invasive_species/japanese-knotweed/

<https://www.dot.ny.gov/divisions/engineering/environmental-analysis/manuals-and-guidance/epm/repository/A1Invasive.pdf>

Right of Way

Character Area A is approximately 2,413 feet in length and the right of way (ROW) is approximately 95 feet wide.

Topography

At the east end there is a grade separation at Riverside Drive and Corliss Avenue with an elevated corridor crossing over Riverside Drive, followed by a pass under Route 201. The slopes on either side of the rail bed are quite steep, creating a feeling of seclusion in this segment. The elevation difference between the top of the rail bed to the adjacent streets and property is 9-10 ft in most areas (30-55% slopes). While moving west the grade difference at each street decreases making connections and access easier.

The western tip of this character area, a section 500 feet east from Route 201 is in a “Zone A” floodzone (an area inundated by 1% annual chance flooding), requiring design elements this zone to be flood resistant.

Connectivity

At the west end of the rail corridor, there is pedestrian access from Corliss Avenue to Riverside Drive via a narrow sidewalk. The ADA compliance of this sidewalk should be further investigated. Via this sidewalk, connections from the neighborhood to

the north as well as from Grand Avenue to the south via Riverside Drive allows for users to come and go without much problem. The section leading up to the neighborhoods on both sides of the rail corridor has an open feel as the rail bed is above the grade to the south and the low vegetation to the north make the higher slope seem less enclosed.

The rail corridor in this segment appears to have frequent use by residents. An informal pathway has been created at the end of Saint Charles Street on the southern side of the corridor. This path is devoid of vegetation and appears to be heavily used. The tunnel at Allen Street also appears to be used, and there are informal paths created around the tunnel entrances up to the rail bed. Along the north side of the corridor there does not appear to be any informal paths created. This indicates people are accessing the corridor and walking along the rail bed instead of only trying to get to the other side of the tracks. While there are many informal pathways this is a long stretch of corridor that has access issues by not having easy exit and entry points.

At the end of this Character Area, as the slopes on the side begin to lessen, there are more opportunities to access the corridor and the busy commercial area is within view and accessible, providing a more open feel. An example of the access is apparent through evidence of foot paths to the corridor from Harrison Street.



Allen Street Tunnel. Left: Access from North. Right: Access from South.



Footpath to rail corridor around fence looking north from Harrison Street.

Character Area B

Corridor Character

The corridor in this character area is narrow and flat, with little vegetation and open views to and from the corridor. The corridor from Baldwin east is lined with fences, separating it from the adjacent properties. This is the only portion of the corridor that intersects with at grade streets and sidewalks. Baldwin Street and Willow Street connect downtown area north to south from Main Street to Floral Avenue. There is new construction activating this space due to the BU Health Sciences Campus and Century Sunrise Apartments. Within the ROW there are business signs, parking lots utility poles and railroad crossing signals.

While there is some encroachment with the lots, making the usable corridor narrow, there is ample land width to accommodate future conversion into a 12-ft wide multi-use trail with 4-ft buffers.



- A.** View looking east to Baldwin Street intersection, demonstrates level elevation between the corridor and adjacent land.
- B.** Looking south and east toward Baldwin Street showing parking lot and property encroachments.
- C.** Open corridor view from east side of Baldwin Street intersection looking east with fence separations.
- D.** View looking east toward the at grade Willow Street intersection.

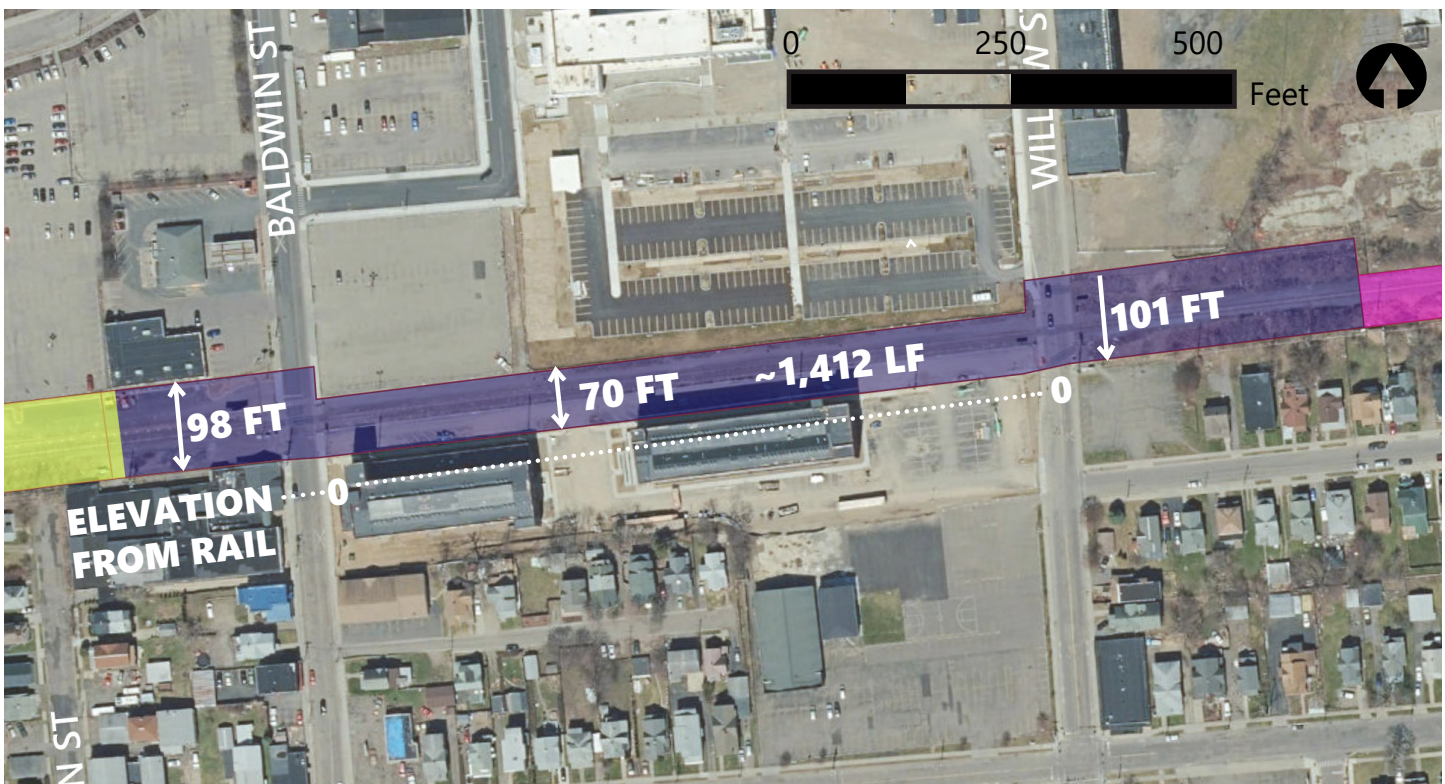
OPPORTUNITIES

- Multiple access points available
- Open, easy to navigate area
- Proximate to public and private facilities
- Potential connection/plaza to Arch Street

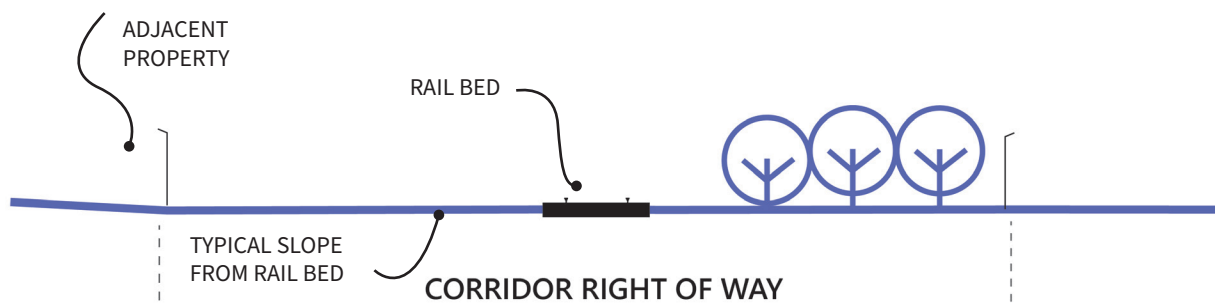
CONSTRAINTS

- Heavily paved, not much green space
- Fenced parking lots right against ROW of line
- ROW is 70-ft, but with encroachments the width is closer to 30-ft

AREA B: LEVEL CORRIDOR



Typical Section of Character Area : B



Right of Way

Character Area B is approximately 1,412 feet in length. The right of way (ROW) width from Harrison Street to Baldwin Street west is 97-ft, between Baldwin Street and Willow Street 70-ft and widens at Willow Street to 101-ft until the end of the character area.

The ROW width is compromised with encroachments of parking lots between Harrison Street and Baldwin Street along the north and south sides of the corridor as well as between Baldwin Street and Willow Street along the south side of the corridor. The available corridor width range from 20 to 30 feet due to these encroachments.

Topography

The rail bed is at grade within this Character Area. The elevation at the rail bed goes from 854 at Baldwin Street to elevation 856 at Willow Street. The slopes on either side of the rail bed are between 1-2.5%, indicating that this area is relatively flat and easily accessible.

Connectivity

The accessibility to the rail corridor in this area is high. The rail bed matches grades on each side of the corridor allowing for easy access from either the north or south. The area is open with views of adjacent properties and buildings and easily navigated.

This character area is the only area along the rail bed that is actively crossed by vehicular traffic. This is also the only portion of the study area that has existing sidewalks that provide a pedestrian connection to the rail corridor.

As seen in the bottom right photo, there is a potential for a public gathering space and access from Arch Street. This land straddles two properties, to the west, is a parking lot owned by Bay Reality Three LLC, and to the east, is the BU School of Pharmacy and Pharmaceutical Sciences, owned by People of the State of NY SU.

In addition to the road crossings, there are several opportunities to have direct pedestrian and bike connections to and from the BU School of Pharmacy and Pharmaceutical Sciences building, and the Century Sunrise Apartments by extending existing sidewalks through the parking areas and fence.



At the Willow Street intersection looking north from corridor, view of new wide sidewalk to Corliss Avenue and proximity of the BU Nursing School renovation.



Baldwin Street intersection with railroad crossing signals and markings.



At Willow Street looking south from corridor, view of improved sidewalk and proximity of neighborhood to the south.



View looking north to BU School of Pharmacy and Pharmaceutical Sciences building and potential connection to trail from existing sidewalk.



View looking north to Arch Street showing the open access to/from the corridor.

Character Area C

Corridor Character

The general feel of this portion of the corridor is wide but enclosed. Utility poles line the corridor along the south edge. The steep slopes and tall vegetation create a quiet sanctuary. There are areas where trash and debris have been dumped into the rail corridor. Character Area C is heavily vegetated with deciduous trees and low shrubs and weeds, with a large presence in this area of Japanese Knotweed. The slope and vegetation combination does not allow for easy views beyond the rail corridor.

There is a retaining wall holding grade along the north side of the corridor, near the west end, where the residential properties begin.

The east end of the corridor curves slightly south after tunneling under Main Street, making sight lines constricted.

Right of Way

Character Area C is approximately 2,097 feet in length and the right of way (ROW) width ranges from 58-ft to 150-ft.

Topography

The rail bed begins to decrease in elevation and is depressed from adjacent property. The elevation difference along this character area is 10-20 ft from rail bed to adjacent properties (the slope ranges from 21-55% on both sides). This creates an enclosed feeling along the corridor as the steep slopes and elevation changes create a wall on either side of the rail bed. This corridor travels under Main Street; the bottom of the overpass is approximately 18-ft from the corridor elevation. After the tunnel under Main Street the corridor veers southeast where the adjacent elevation and rail corridor level out at Wells Avenue where there is road access across the railroad.



- A.** Adjacent to the BU Nursing School Site, view looking east showing the transition between Character Area B and C.
- B.** Near the east end of Character Area B, the view looking east toward Main Street demonstrates the wall-like feel created by the slopes and vegetation.
- C.** At the east end of Character Area B, looking west toward Willow Street view of the north side of the corridor, private properties elevated above the corridor.

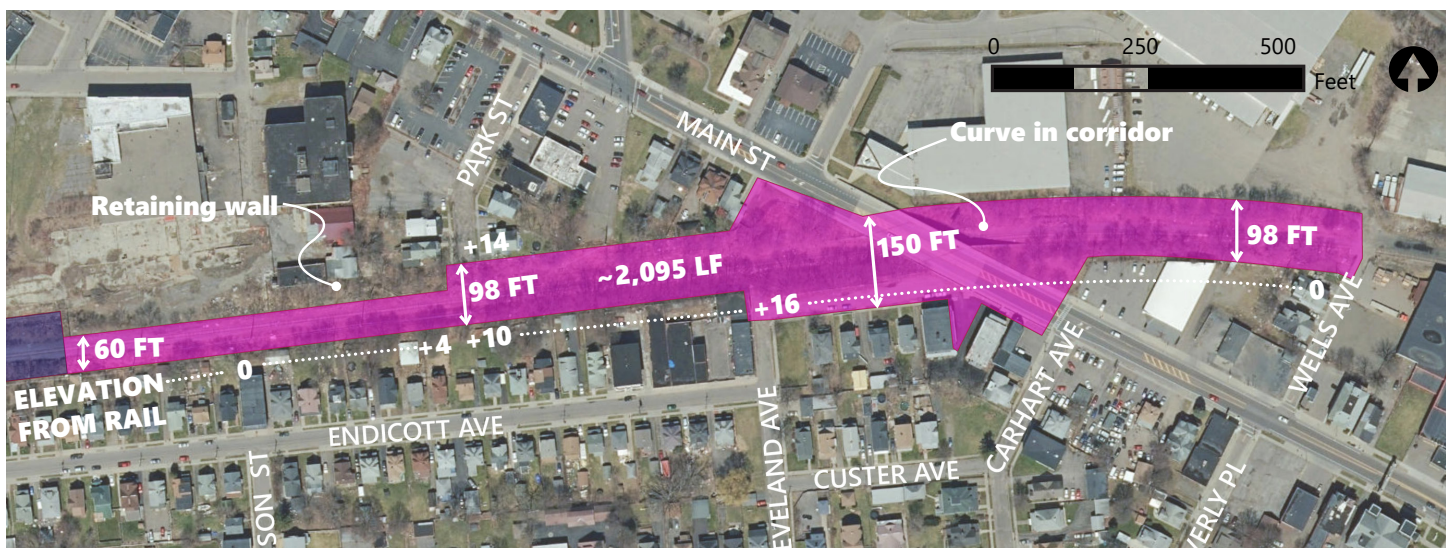
OPPORTUNITIES

- Connection to Main Street
- Wide ROW through most of the area
- Rail bed flat and at same elevation throughout area

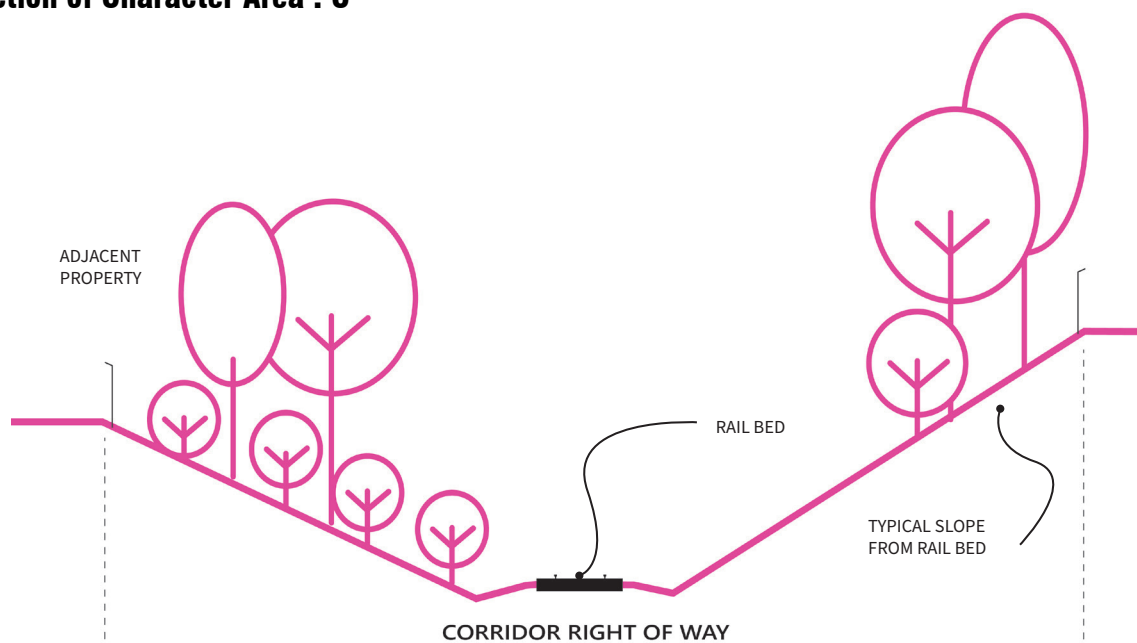
CONSTRAINTS

- Enclosed due to steep rising slopes on both north and south sides of corridor
- Access to Main Street requires a costly ramp system
- Large presence of Japanese Knotweed
- Not many opportunities for access along corridor between Willow Street and Main Street

AREA C: DEPRESSED CORRIDOR



Typical Section of Character Area : C



Connectivity

With the rail bed set well below surrounding grade the corridor does not allow for easy access. There does not appear to be any informal pathways created for access to the rail corridor. Access to Main Street from the rail corridor is unavailable under current conditions.

Unlike in Character Area A and B, this Character Area has few roads that dead end into the corridor. Park Avenue with proper ramping is the only potential for connection to the north side of the corridor. On the south side of the corridor, Cleveland Avenue terminates into Main Street Terrace which runs parallel to the corridor but at a higher elevation.



View looking north at private property where wall exists.



Looking west viewing the north side of the corridor, private properties elevated above the corridor.



Looking east at the south side of the corridor, the private properties elevated above the corridor.



Looking east toward Main Street showing wall like feel created by the slopes and vegetation and the presence of trash.



Looking south from corridor at Wells Avenue connection to Main Street.



Looking west from Wells Avenue toward the Main Street overpass.



Looking east under the Main Street overpass as the corridor curves to the south east toward Wells Avenue.

BENEFITS OF MULTI-USE TRAILS

MULTI-USE TRAILWAYS HAVE THE POTENTIAL TO PROVIDE A TOTAL PACKAGE OF BENEFITS, INCLUDING PUBLIC HEALTH, TRANSPORTATION AND LIVABILITY, ECONOMIC DEVELOPMENT, AND EVEN COMMUNITY PRIDE AND IDENTITY.



HEALTH

Trails create healthy recreation and transportation opportunities by providing community members with safe, accessible, and attractive places, giving visitors more reason to walk, jog or bike around town.



TRANSPORTATION

Multi-use trails have the potential to function as viable transportation corridors that can create a localized or regional transportation system. Replacing automobile trips with walking and biking reduces greenhouse gas emissions from private vehicles, and also improves air quality.



GOOD FOR BUSINESS

Development and businesses along or near trails can attract more patrons, increasing spending, job creation and land value for properties along trails.



COMMUNITY IDENTITY

Trails can be used as a way to highlight and provide access to Johnson City's historic and cultural resources. In doing this, they can create a stronger sense of community identity and pride.



RAIL TRAIL DESIGN

Introduction

Conceptual designs for the JC Rail Trail Feasibility Study were developed based on field visits, the existing conditions analysis, committee feedback and public input. The trail envisioned in this plan will function as a non-motorized recreation facility as well as an alternative transportation network with multiple access points.

This section provides a summary of the feedback and input that influenced the design recommendations for the trail and its amenities, trail branding of the JC Rail Trail concepts to give the corridor a unique identity as part of the Two River's Greenway system and lastly a proposed trail design, with detailed descriptions of the design for each of the three Character Areas: A, B and C.

TRAIL OWNERSHIP AND MAINTENANCE

The key element to the success of the JC Rail Trail is acquisition of the corridor.

At the time of this report, through verbal communication, Norfolk Southern Corporation shared their desire to sell the entire decommissioned corridor as a whole, rather than segments. The section across Johnson City is one piece and thus would require greater collaboration with adjacent municipalities, county and or state to further negotiate with Norfolk Southern to acquire the property. Property ownership including areas of potential encroachment and fences needs to be verified throughout the entire corridor.

In addition, to the main corridor acquisition, the passage to Arch Street that straddles two properties, should be further investigated. There is an opportunity to partner with Bay Reality Three LLC, and the People of the State of NY SU. Discussions about ownership, designated easements, utilities and any impacts of the proposed design on these, need to be finalized prior to future design and implementation. The logistics of ownership and maintenance of such facilities should be worked out prior to implementation.

PROPOSED JC RAIL TRAIL RECOMMENDATIONS

1 . 1 2 Miles in Length



Community's Influence on Trail Design

During the public meetings in 2017 as a part of the E-J BOA Revitalization Study, the public demonstrated interest in utilizing Johnson City's abandoned railbed as a railway to create a much needed open space in the Village, while also providing opportunities to establish a regional trail system with connections to nearby municipalities and trails. It was selected as one of the 15 projects to implement in the Greater Binghamton Fund and was awarded funding through the BOA to continue momentum for implementation.

In addition to the meetings that helped drive the Master Plan design presented in the Revitalization Study (2018), the community gathered again to share feedback and input specifically for the proposed JC Rail Trail design. The findings from the Open House meeting in November and the three committee meetings, are organized into three primary topics of safety, community amenities, and connections. The detailed summary from the Open House public meeting can be found in Appendix A.

Safety

- The trail needs to be open and visible to deter unwanted activity.
- Lighting throughout more intense near century
- Access
- Compile with ADA accessibility
- Incorporating a mixed use asphalt trail with centerline to help with traffic flow and safety for trail users.

Community Amenities

- Provide a commons, gathering areas.
- Provide gardens and plantings
- Provide seating options throughout the trail.

- Provide design elements for special needs population, incorporate educational/therapeutic trail experiences
- Incorporate solar paving into design and gathering areas
- Provide bathroom and water filling stations
- Provide locations for art along the trail or incorporate art in elements such as bollards, fences, pavement etc.
- Provide a dog park along the trail.
- Provide a playground.
- Provide exercise stations.
- Provide bicycle/scooter rental stations.

Connections

- At Riverside Drive remove current railroad bridge overhead. Provide passage across or substantial clearance under JC Rail Trail for trucks
- Provide loops 1-5 mile incorporating the Hospital, BU Facilities, Lester Avenue and Main Street.
- Provide wayfinding signage to direct people to and from the JC Rail Trail.
- Provide interpretive areas to connect users to the space/place.
- Connect to Vestal Rail Trail
- Connect to Boland Park.



Participants at the Public Meeting in November 2019.

Design Recommendations Applicable To The Entire Corridor

We evaluated best practices, trail surfaces, accessibility, lighting and signage and when the JC Rail Trail becomes a reality, the following design recommendations along with the proposed design, are intended to set the framework for the decision-making process during the design of the trail and its associated amenities.

The purpose of these recommendations is to aid the community in creating a distinct identity and a safe and welcoming environment for the JC Rail Trail.

Proposed Trail Branding

It is recommended that a uniform standard (or logo) be used for the identification of the JC Rail Trail project that is consistent throughout its length. This local trail branding can be used to visually connect the trail corridor to adjacent neighborhood and iDistrict, create a local network, tell stories, and promote a healthy lifestyle.

The recommended branding color scheme includes earth tones, based on tannery colors associated with the Endicott Johnson Shoe Factory and the Village of Johnson City burgundy. These colors are compatible with standard range: powdercoat colors, concrete stains and wood stains.



Color Scheme for the JC Rail Trail, inspired by the tannery colors used to make the shoes.

Preliminary Design Concepts

Preliminary design concepts were inspired by the Endicott Johnson Shoe Company's rich history in the area. Three concept logo ideas are presented here.



The first logo incorporates the boot as a symbol for EJ Shoe Company as well as an indication that shoes are made for walking and hiking, thus an appropriate symbol for a trail.



The second logo incorporates the JC from the Village of Johnson City's logo, as well as a railroad track, with an overlay of the boot tilted, as if in motion along the trail.



The third logo is a railroad track with the Village's logo centered.

Branding Beyond the Logo

Using the branding colors and theme of the Endicott Johnson Shoe Company graphic branding can go beyond a logo. The branding can be incorporated through loop trails, referencing the hundreds of thousands of miles of thread and shoelaces used in the city to make the shoes, or shoe trademark brands. Other opportunities for custom features include nodes with bronze shoes as area icons, fence decorating with the color scheme slats, public art in the form of beacons relating to the rich history within the Village. For more details on the research used for inspiration and potential node design/trail loops see Appendix B.

TRAIL BRANDING: CREATING A NETWORK OF POSITIVE EXPERIENCES

An effective signage system, focused on all modes of transportation, will entice residents and visitors to explore beyond their traditional comfort zone. An appropriately designed system can function as the connective thread of Johnson City, linking destinations, historic sites, neighborhoods, and other resources together in a cohesive network, rather than a linear park.

The ability to easily and efficiently navigate an unfamiliar place is directly related to the enjoyment of that place. A healthy wayfinding system allows visitors to easily orient themselves and navigate between destinations. These systems are not limited to signage, but also include visual cues from the streetscape, landscape, and landmarks.

Another way to encompass interpretation and wayfinding from all aspects and potentials: physically, intellectually, and emotionally can be through the use of art such as decorative light poles, fence lacing, sculptures and pavement art.

USING ART TO CREATE IDENTITY



Decorative Light Poles

Pavement Art

Decorative Fence Art



Above is an example of a wayfinding system established for the Two Rivers Greenway. Sign types include, vehicular circulation, pedestrian circulation, kiosks, parking, path and trail signs, maps and interpretive signs.

Trail Dimensions and Surface

It is recommended that a 12 foot wide asphalt trail be used along the entirety of the corridor. In addition, there is ample width to provide 4 feet of buffer along each side of the trail.

This recommendation meets the state and national trail design guidance, of a 10 foot wide trail surface plus 2 foot clear buffers on each side (14 feet total) as a minimum desired width for a two-directional trail accommodating bicyclists and pedestrians.

To maintain sight lines and safety for users along the trail, the vertical clearance from overhanging trees or objects should be a minimum of 8 feet, although 10 feet is preferred.

The Village of Johnson City's preferred trail surface is asphalt which is currently used on the Vestal Rail Trail and a majority of the existing sections of the Two Rivers Greenway. This feasibility Study recommends the use of asphalt for the proposed trail.

An asphalt or concrete surface would initially be more expensive but will require less maintenance than a stone dust trail. An option to consider for minimizing impervious pavement, although more costly, is pervious asphalt or concrete pavements. They provide a permeable yet stable trail surface.

Safety

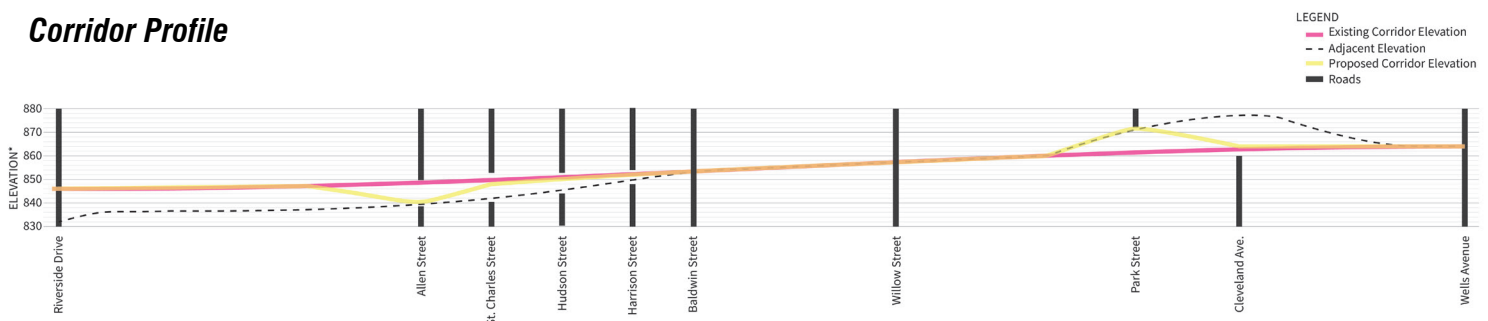
Trail safety will be factored into the final design of the JC Rail Trail. The design should incorporate open views to and from the trail and from the intersecting streets.

Vegetation. Safety can be achieved by limbing up existing trees, clearing shrub growth, and opening views to increase the eyes and ears to and from the trail.

Access to and from trail. Another element to consider for safety is to offer more opportunities to enter and exit the trail. To do this the elevation of the trail will need to change to meet surrounding neighborhood roads. (Refer to Corridor Profile on below). Further environmental investigation will need to be conducted to determine the environmental impact and feasibility of using the cut earth beneath the rail bed near Allen Street as fill near Park Street.

Intersections. The two major road intersections at Baldwin Street and Willow Street should be designed to increase safety for both the motorist and the trail users. This can be achieved with the use of regulatory / trail identification signage and enhanced pedestrian crosswalks to signal to the motorist and trail user of potential conflict. Design features can also be incorporated into the trail approaches to warn trail users of the intersection. This can be achieved with elements such as tactile warning in the surface of the trail, narrowing of the trail as it approaches the intersection, and using bollards or gates at the intersection to slow down trail users.

Corridor Profile



* Vertical scale is exaggerated

To achieve connections at multiple locations along the trail some excavation near the west end and fill near the east end is proposed. Above is an exaggerated profile of the corridor showing the elevations of the existing rail bed, adjacent lands and proposed trail.

Trail Maintenance and Stewardship

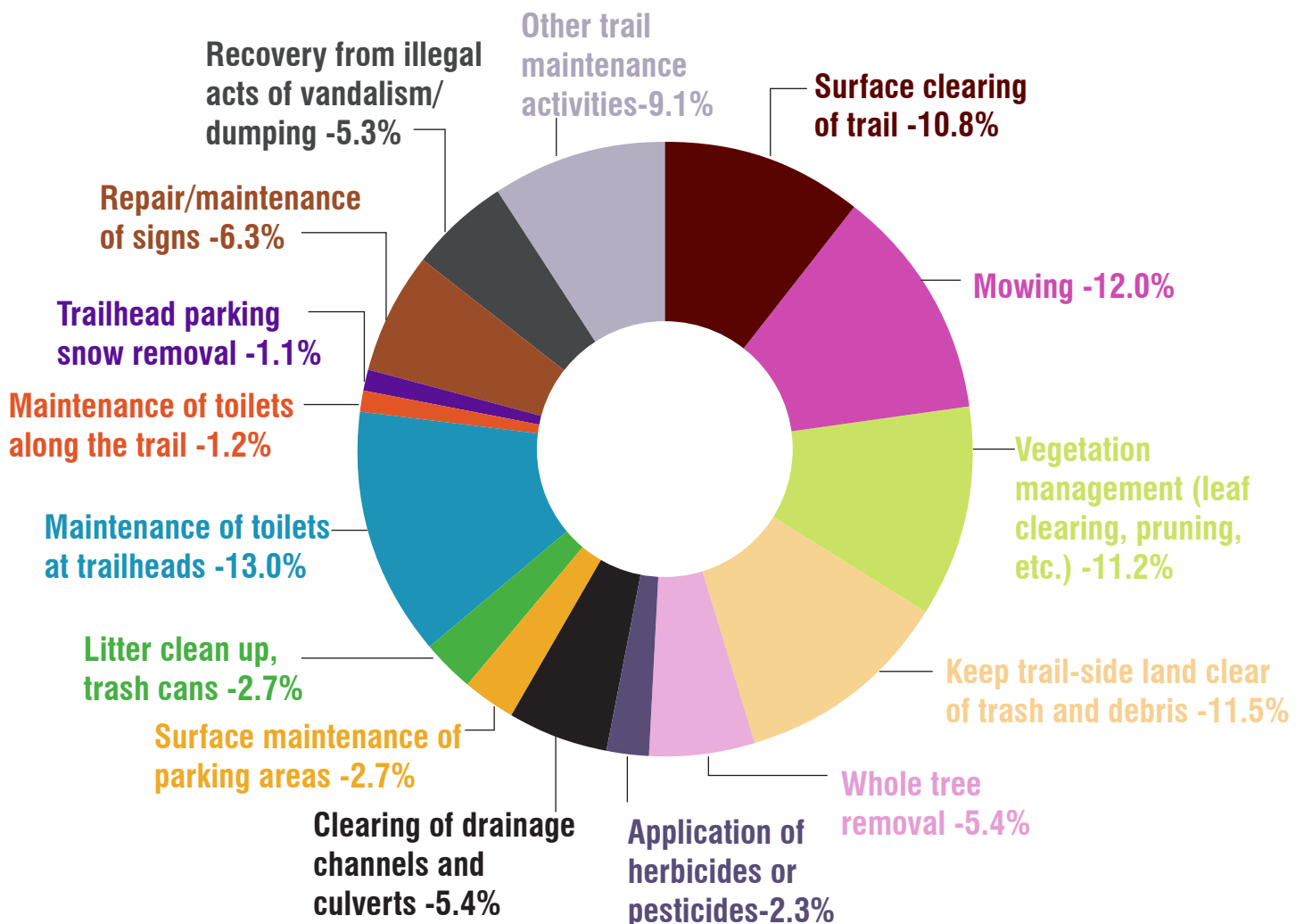
In June 2015, the Rails-to-Trails Conservancy (RTC) released a report on the Maintenance Practices and Costs of Rail-Trails (<https://www.railstotrails.org/resourcehandler.ashx?id=6336>). For the report a comprehensive survey determined the annual average maintenance costs for trails to be \$1000 to \$2000 per mile.

In 2014, the average maintenance cost for asphalt trails was \$1,971 per mile. In the report, RTC recommends having a maintenance plan with a schedule of tasks and inspections for trail facilities. The maintenance plan will help save money by preventing deferred maintenance and will contribute to a better user experience.

Many of the respondents to the survey reported participation in volunteer trail maintenance programs. These programs have been growing in size and dependability and are increasingly taking on more responsibility. Volunteer programs are a tool that could be implemented to help with the maintenance and operations of the JC Rail Trail and help create community ownership and pride.

To aid with allocating resources necessary for maintaining the JC Rail Trail the RTC determined the percentage for activities typically conducted with a trail maintenance budget, based upon a detailed cost analysis survey they conducted. The activities and percentages are presented in the chart below.

Typical Trail Maintenance Activities and Proposed Percent of Budget Determined by Rails-to-Trails Conservancy



Accessibility

Age-Friendly Best Practices, as well as accessibility for people with disabilities, including wheelchair users, should be provided whenever possible throughout the length of the proposed JC Rail Trail.

Where trailhead parking lots are designed, it is recommended that handicapped parking be provided along with any major trailhead connections to the trail meet the standards of the Americans with Disabilities Act, also known as ADA compliant.

Such standards limit the grade of a trail to a maximum of five percent, although exceptions are permitted if railings and level landings are present at intervals defined within the standards. The trail surface should also be firm, stable, and slip resistant in order to accommodate as much of the public as possible.

Lighting

Pedestrian-level lighting should be considered for the JC Rail Trail corridor due to its semi-secluded nature and adjacency to uses that may not provide eyes and ears on the trail.

With potential use as a transportation corridor the hours of use may be during darker hours, before/after work or class times especially. The need for lighting is imperative.

Solar-powered trail lights can be beneficial in that no trenching is required for cables, it is environmentally friendly and simple to maintain. However they are only reliable if they are sized correctly for the location and are not heavily shaded by trees or structures, which can make solar less viable.

The option for solar powered lights will need to be further evaluated. For the purpose of this feasibility study and cost estimates we assumed traditional in ground trenched lines for the lights.

PATHS THAT GLOW

Inspiration is growing from a glowing bike lane in the Netherlands designed by Daan Roosegaarde. The lane is solar-charged using materials in the asphalt. At night, these synthetic particles called “luminophores,” emit power captured from sunlight, creating the electric blue hue¹.

In 2017, Texas A&M installed the nations first glow-in-the-dark bike lane enhancements. The photoluminescence used in Texas is a material that does not immediately re-emit the radiation it absorbs. Initial discharge is very bright for a very short duration².

Products such as CORE Glow and Unime pebbles are made with photo-luminescent pigment and resin can last 10-12 hours³.



1 https://www.huffpost.com/entry/glow-in-dark-bike-path-lane-sun-poland_n_57fd0732e4b068ecb5e1d57b

2 http://www.browardmpo.org/images/WhatWeDo/completestreetsinitiative/BCS_Events/FDOT_Presentation_-_Innovative_Materials_Bike_Workshop_08082018.pdf

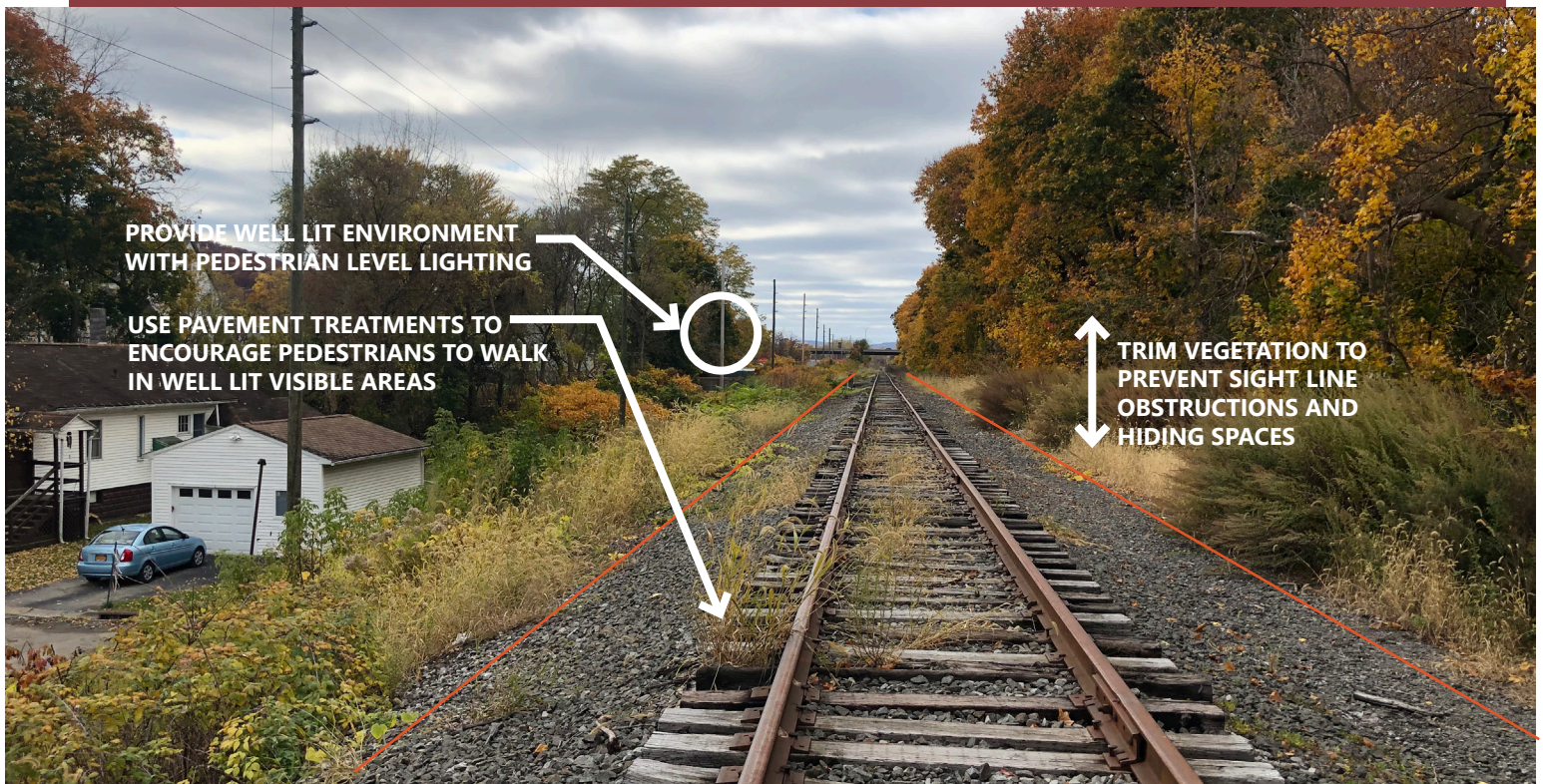
3 <https://www.simplemost.com/how-to-make-a-glow-in-the-dark-path-or-driveway/>

CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN

The goal of Crime Prevention Through Environmental Design (CPTED) is to implement a set of design principals to reduce the opportunity for crime to occur. This can be achieved in the corridor landscape/public realm with the inclusion of pedestrian amenities, lighting, pavement treatments, and by creating environments that encourage positive activity. These elements have the potential to increase the number of eyes and ears on the path, reducing criminal activity.

Principles to keep in mind when looking at design solutions for the Johnson City Rail to Trail Corridor include the following:

- Keep areas well lit
- Don't create areas to be used as hiding spots and for illegal activity to occur
- Make sure sight lines are not obstructed by vegetation
- Place design elements and site amenities strategically to guide pedestrians to walk in well lit visible areas.



Although the JC Rail Trail will provide easier access to semi-secluded areas, the presence of an official and highly-visible community facility can actually deter inappropriate or illegal activities. An improved, maintained trail as part of a larger system solidifies the perception that a trail is well used and can be occupied at any given time, which can deter unwanted activities. As the trail grows in popularity, it can in effect become self-policing. Other communities have reported this phenomenon, citing that people who typically choose to use the trail are the ones that care most about its preservation.

Signage

While the JC Rail Trail is not directly along either of the two rivers of the Two Rivers Greenway it is still in the project boundary and has potential to directly connect in the future. Thus, efforts to align the design standards of the Greenway signage along the JC Rail trail will help to reinforce that this section is a part of this larger regional network. In doing so it is also important to identify this section as unique to the Village of Johnson City. One way to achieve both is to use the Greenway Sign Standards form, shape, sizes and layouts and placement guidelines, while developing a brand and color pallet that is unique to the Village.

Informational or wayfinding signage that provides an overview of the trail system, orients users to their position within the trail corridor, and directs trail users to nearby destinations and attractions should be included at all trailheads and at crossroads with other trail systems or connections.

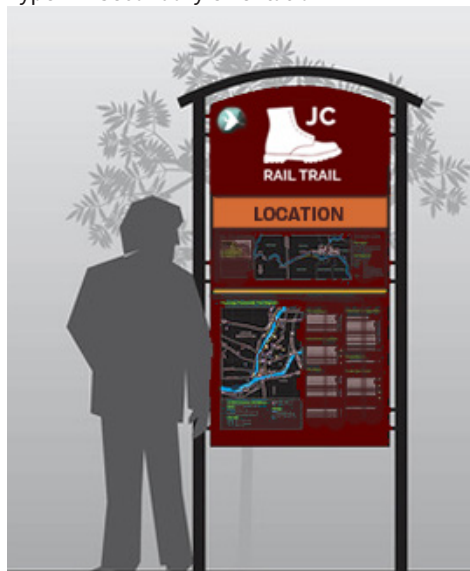


Trailblazer Sign with alternative trail logo concepts.

Type C-1 Trailblazer



Type A-2 Secondary Orientation



Type D-1 MUTCD Vehicular Directional



Two Rivers Greenway Sign Standards, sign examples incorporating colors and logo unique to the JC Rail Trail. The sign posts, frame and panels follow the standards already defined Two Rivers Greenway Sign Standards

This signage can be achieved with informational kiosks, light pole banners, pavement markings, or graphics etched or engraved into the pavement.

Accessible routes and general rules and regulations that apply to the trail system, such as permitted uses or hours of operation should be incorporated into the signage system. Area-specific signage should also be included, such as 'STAY ON TRAIL' or 'RESPECT YOUR NEIGHBORS' for portions that pass through or are adjacent to residents or active businesses.

Interpretive information for historic resources or key features along the trail should also be incorporated into the informational/wayfinding signage system.

Additionally, warning signs are recommended to caution about various hazards such as steep adjacent slopes, roadway crossings, pedestrian crossing signs (for motorists), etc. Utilization of consistent barrier gates or bollards to control access to the trail can also identify or reinforce the trail system and communicate a consistent application of rules and regulations for all portions of the trail.

If federal and/or state funding is used to construct an off-road trail along with on-road improvements, the signage used must comply with the Manual of Uniform Traffic Control Devices (MUTCD).

INTERPRETIVE OPPORTUNITIES

The history of the Endicott Johnson Shoe Company, associated factories, and shoe making facts can be captivating allowing for interpretive opportunities along the trail. Possible interpretive opportunities include:

- Tools and Machines, Anatomy of a Shoe, and Production Volumes
- Factory Mapping, plat maps and historic factory plans
- Various Jobs, and Shoe Production Volumes
- Anatomy of a Shoe, Shoe Sizes and Brands/ Trademarks
- Tannery and Leather Trust history

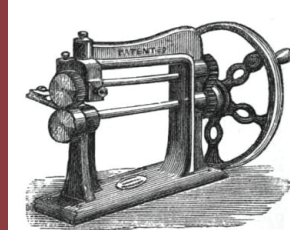
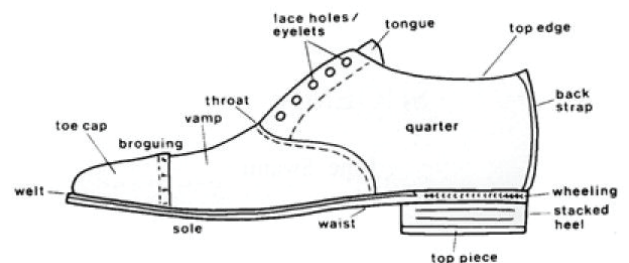
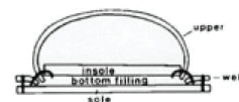


Fig. 75.—UPPER SKIVING MACHINE.



Proposed JC Rail Trail Design

The goal of the JC Rail Trail design is to create a safe and welcoming environment inspired by the railroad, local history and recent “iDistrict” designation.

For the ease of organizing and evaluating the design components of this project, the proposed JC Rail Trail design is divided into the same three segments as the existing conditions:

- Area A: Raised Corridor,
- Area B: Level Corridor, and
- Area C: Depressed Corridor.

The following section of this study discusses in detail the design elements in each Character Area.

AREA A: RAISED CORRIDOR



AREA B: LEVEL CORRIDOR

AREA C: DEPRESSED CORRIDOR



Character Area A

From Riverside Drive to Harrison Street the existing understory vegetation, scrub growth, and invasive species are proposed to be removed and remaining trees limbed up to 8-ft to open views to and from this portion of the corridor. A 12-ft wide asphalt multi-use trail is proposed to be located in a linear alignment throughout the corridor to Baldwin Street intersection.

Adjacent to the trail, turf buffer areas, 4-ft on each side, would be maintained to provide a clean edge and open views to and from the trail and also provide lawn areas for passive recreational opportunities. Beyond the lawn buffer the slopes can remain naturalized with wildflower seed mixes.

AREA A: RAISED CORRIDOR | PROPOSED DESIGN



CROSSING AT RIVERSIDE DRIVE

At Riverside Drive where the railroad crosses the road, there is a desire to design this intersection to allow for passage of trucks. To do this, the existing bridge, shown on the next page, would need to be removed. There are two proposed options for this intersection. In both options there is trail access to and from Riverside Drive and ADA access to Corliss Avenue.

Existing Railroad Bridge Over Riverside Drive



Option 1. Pedestrian Bridge Gateway



Option 1 is to replace the railroad bridge with a new pedestrian bridge which allows for substantial clearance for larger trucks and emergency vehicles (standard height of an 18 wheeler is 13.5 feet). The new bridge can incorporate lighting and signage to act as a gateway to the JC Rail Trail on the west end. In this option to the east of the bridge, to allow users to enter and exit the trail from the north and south, there is a neighborhood connection node, number ② on the plan below and perspective. This node would have a small gather area with benches, potential interpretive elements, and trail signage.

Option 2 At Grade Crossing and Gateway



Option 2 is to create an at grade pedestrian crossing with a raised table crossing at Riverside Drive. This can also be an opportunity for a trail gateway to JC Rail Trail to include informational / wayfinding kiosk, benches, interpretive elements.

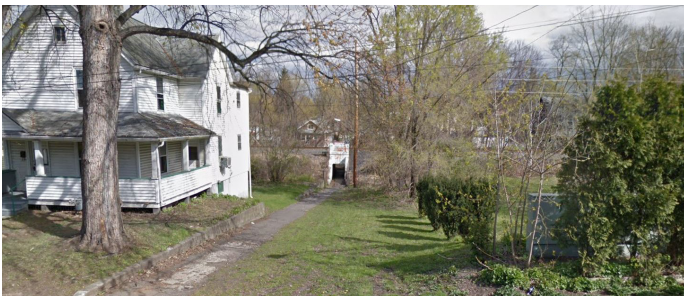
NEIGHBORHOOD NODES

Allen Street. At Allen Street there is an opportunity for neighborhood connection from the north and south. Currently at this intersection there is an unwelcoming pedestrian tunnel under the railroad. The proposed design removes the tunnel structure and adjust the trail corridor slope to a lower elevation, meeting closer to the existing grade at Allen Street. Changing the grade of the trail adds interest to the user and provides entrance/ egress more accessible as well as an opportunity for a neighborhood node to include informational / wayfinding kiosk, benches, and interpretive elements.

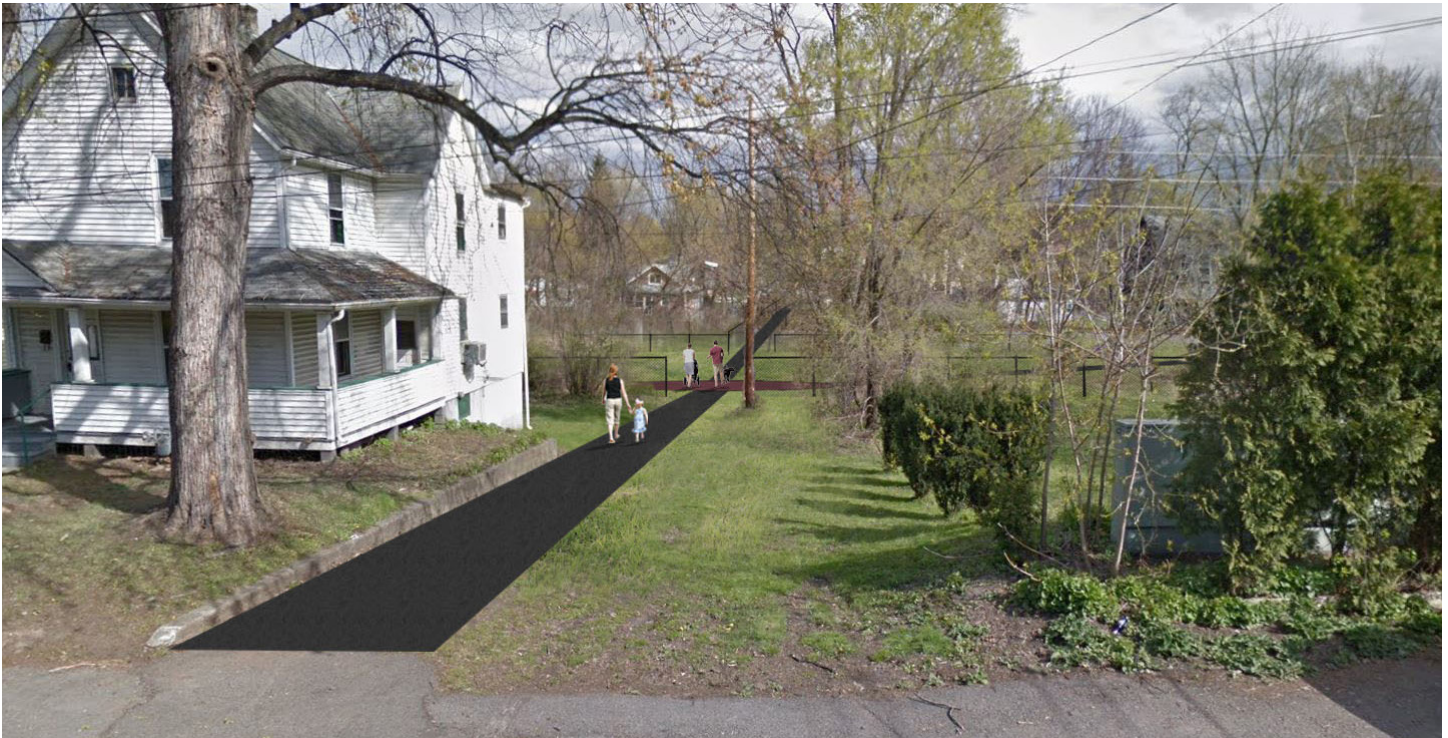
St. Charles Street. At St. Charles Street the corridor would be raised similar to current elevations (higher than St. Charles Street), a stair access on the north and south side is proposed at this intersection.

Hudson Street and Harrison Street. At Hudson Street and Harrison Street the grade difference is less there is opportunity to create ADA accessible routes to the south side of the trail.

Existing Tunnel Under Railroad



Proposed At Grade Connection



POTENTIAL TRAILHEAD PARKING

Three sites have been identified as potential locations for dedicated trailhead parking, all sites are within Character Area A. These three sites would provide approximately 15 total spaces along the corridor for trail users.

New Riverside Drive Parking Lot. Proposed parking for the western-most trailhead would utilize vacant land within the ROW underneath a portion of the Route 201 Bridge, along Riverside Drive. This vacant site would be developed into a small parking lot dedicated to trailhead parking, providing visitors with approximately 5-6 spaces. Prior to implementation, the Village and NYS DOT should be consulted.

Department of Public Works. Located in a proposed site for the future Department of Public Works, these trailhead parking spaces would be incorporated into the design and development of the DPW parking lot. Approximately 5-6 spaces would be dedicated to visitors.

Baldwin Street Parking Lot. The recently constructed parking lot with access from Baldwin Street is located within the Norfolk Southern Corporation Railroad ROW. The ownership of this lot is to be determined. An agreement with the owner for shared parking for approximately 5-6 spaces to be dedicated to trail users, should be explored.



Existing view of potential parking spaces to be dedicated to trailhead parking for the JC Rail Trail, in the lot within the corridor ROW west of Baldwin Street.



LEGEND

 Potential Location for Trailhead Parking

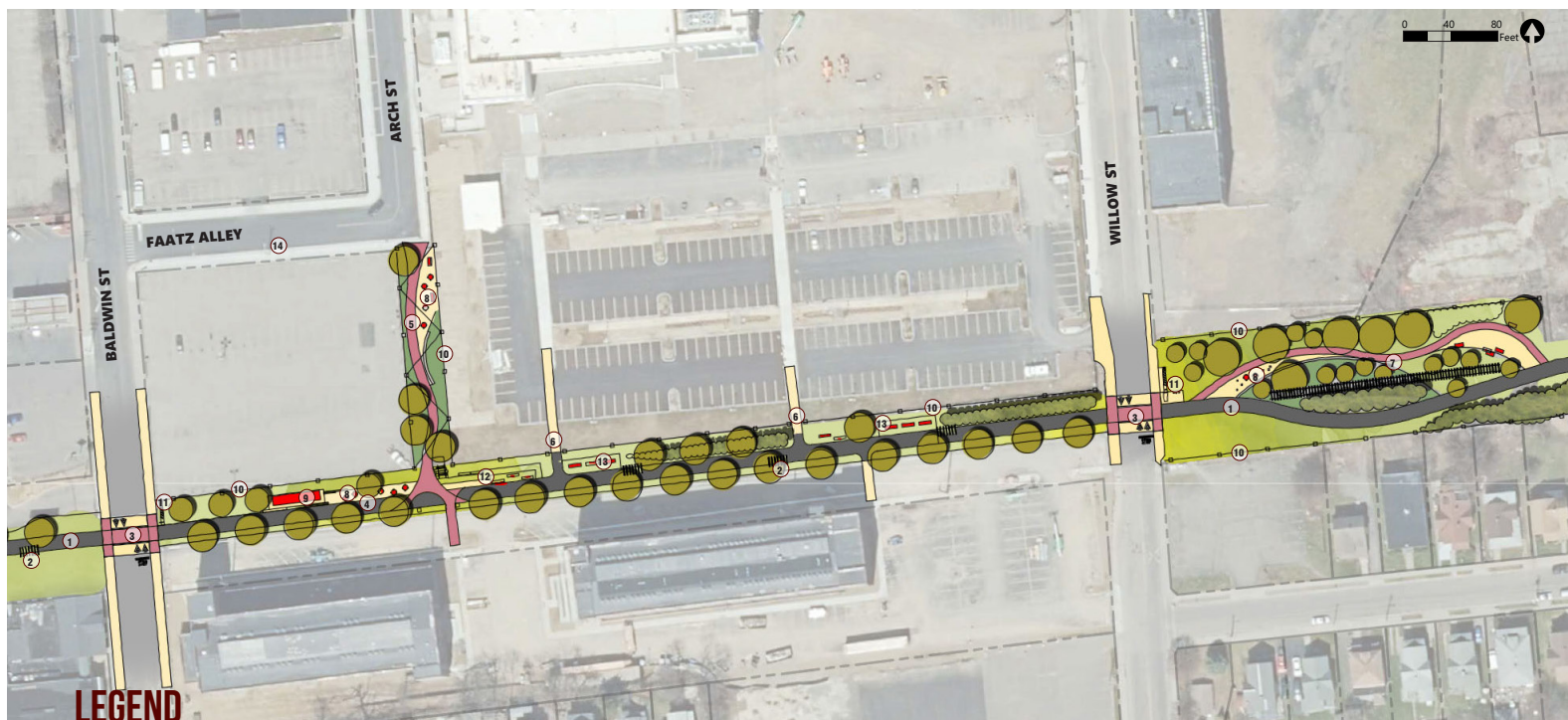
Character Area B

Character Area B is the middle section of the mile long trail where two roads cross at grade creating the potential for activating the trail with gathering spaces, passive recreation opportunities and educational/therapeutic experiences.

AREA B: LEVEL CORRIDOR | PROPOSED DESIGN



AREA B : LARGE SCALE PLAN



LEGEND

TRAIL IMPROVEMENTS

- 1 12-ft Wide Asphalt Multi-Use Trail With Striping
- 2 Pavement Treatment Signifying Upcoming Crossing
- 3 Raised Table Pedestrian Crossing
- 4 Gathering Apace Along Trail
- 5 Enhanced Connection / Gathering Space to Trail
- 6 Extend Sidewalks from BU Facilities
- 7 Secondary Trail/ Passive Park/ Interpretive Area

TRAIL AMENITIES

- 8 Charis and Tables
- 9 Shipping Container Shade Structure
- 10 Decorative Fence Treatments
- 11 Bike/Scooter Rental Station
- 12 Therapeutic Training Amenities
- 13 Raised Planting Beds-Community Gardens
- 14 Potential Food Truck Parking

ROAD CROSSINGS

Currently, there are slightly raised rail crossings with stop signs and rail arm infrastructure at Baldwin Street and Willow Street. The proposed design considers keeping the stop signs and installing a raised table crossing to warn motorists of pedestrians and cyclists. These raised table crossings will need to be evaluated further for traffic patterns and existing driveway entrances. JC Rail Trail signs will also be incorporated into the design act as an identifying branding feature for the trail as well as an additional visual cue of the crossing in conjunction with the traditional MUTCD rail crossing signage.

Each street crossing would have an informational / wayfinding kiosk, benches, embedded railroad ties (or detectable warning strip system for trail users), and plantings to help define the intersection crossings and give the JC Rail Trail an identity. The embedded rail road ties would be a standard treatment for all intersection approaches and function as a visual and sensory cue for increased trail safety at access points to the trail.

Baldwin Street Intersection



Proposed perspective view of Baldwin Street intersection looking east into the Public Space.

Willow Street Intersection



Proposed perspective view of Willow Street intersection looking east into the Willow Street passive recreation space.

PUBLIC SPACE AT BALDWIN STREET

With the number of residents, employees, patients and students in the vicinity, activating this space between Baldwin Street and Willow Street should be easy. Some of the trail amenity considerations include providing a train car, shipping container or caboose as a shade shelter or kiosk option (snack vendor). This can be an opportunity/ space for impromptu performances and also a space for interpretation of the corridor and local history.

Also there are proposed areas with tables and chairs, space for passive recreation, a decorative fence as a replacement for the chain-link fences along both the north and south side, bike/scooter rental stations, and dedicated area for potential food truck parking (along Faatz Alley - Arch Street).

With the hospital and the Handicap Children's Association a block away, the proposed design incorporates therapeutic training/educational experiences, such as different pavement textures/ types, stairs/ramp with railings, and different seating types.

Raised planting beds/community gardens are proposed as a way to engage local residents and give gardening space to apartment dwellers. This can be an opportunity to get the neighborhood involved and create sense of ownership on the trail.



Intersection of the extension from Arch Street to the Trail, looking west at the passive recreation gathering space at Baldwin Street.

THERAPEUTIC SITE DESIGN

HUMANISTIC ARCHITECTURE AND THERAPEUTIC DESIGN ARE IMPORTANT DESIGN APPROACHES THAT AIM TO PLACE A FOCUS ON MEETING THE PHYSICAL AND PSYCHOLOGICAL NEEDS OF A DIVERSITY OF USERS.

THESE DESIGN ELEMENTS CAN CONTRIBUTE TO PUBLIC HEALTH BY EMPHASIZING ELEMENTS THAT CREATE BOTH ACTIVE AND PASSIVE INSTALLATIONS THAT INDIVIDUALS CAN ENGAGE WITH TO LEVERAGE THE HEALING ELEMENTS OF NATURE, WHETHER A SOOTHING WATERFALL OR SENSORY-ORIENTED PLANTINGS FOCUSED ON COLOR, TEXTURE AND FRAGRANCE.



Precedent image of raised bed community garden.

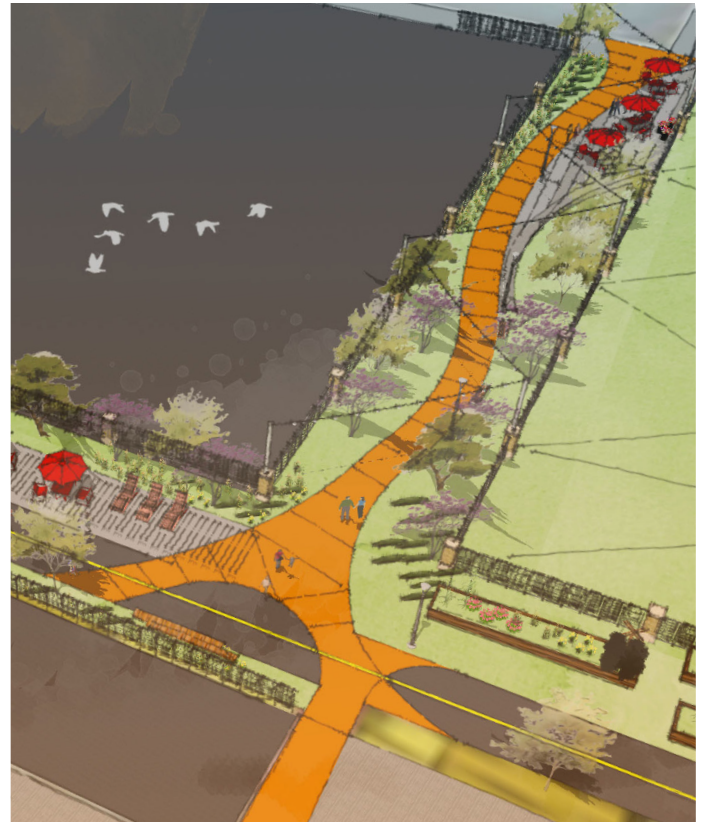


The outdoor spaces around the ABVI in Rochester, NY offers a gathering space where different pavement textures and seating opportunities for therapeutic training are incorporated into the design.

MID BLOCK ACCESS

The design proposes to utilize the alley space from Arch street as a pedestrian connection to the trail. Food Trucks can park along Faatz Alley or Arch Street and this connector can also be a fun space with overhead “twinkle” lights, table and chair seating as well as planting beds. The ownership of this space is unknown and may require purchase or an easement.

With this segment there is a potential for mid-block access to the trail. From the north, access can be provided from the BU property by extending the sidewalks through the parking lot. From the south, access from the Century Sunrise buildings sidewalks can extend through the driveway. These connections would require easement or collaboration with the private landowners of these properties.



Access and Public Space at Arch Street to the North and access from Century Sunrise Apartments to the south of the trail.



EXISTING



PROPOSED

Proposed perspective view looking north to Arch Street from the trail.

PUBLIC SPACE AT WILLOW STREET

To the east of Willow Street the gathering area is proposed to contain a split trail where a walking path curves north and the multi-use trail veers south of the original track line. Between these paths it is proposed that a segment of the existing rail track remain with incorporated plantings as well as offer a space for interpreting the historic past railroad and local industry.

This space is a potential location for a public restroom facility. Further investigation into utility access, ownership and maintenance of such a facility will need to be determined prior to future design and implementation.



Precedent image showing existing rail bed with plantings.



Proposed birds-eye view of the Willow Street Plaza Space.

PUBLIC BATHROOMS

PUBLIC RESTROOMS - ALWAYS IN DEMAND. A FEW OPTIONS TO INSTALL ALONG A MULTI-USE TRAIL INCLUDE PORTABLE TOILETS, PERMANENT RESTROOM STRUCTURES OR SOMEWHERE IN BETWEEN WITH THE “PORTLAND LOO”.



Portable Toilets: \$3000/year rental (includes maintenance)

Portable toilets are free standing, single stall, gender neutral toilets. ADA compliant units are available. People often have negative perception of port-a-potties. To make them more welcoming, a structure can be designed to house portable toilets, or public art can improve aesthetics.



Portland Loo: \$125,000+ maintenance

After a study was complete in 2006, “Going Pubic”¹, The Portland Loo was designed by the City of Portland for installation in Portland and other urban and rural locations. It is a single occupancy, public toilet with unique design features which make it safe, affordable, and aesthetically pleasing. They are designed specifically to prevent problems that are commonly experienced with public toilets. The sleek and modern kiosk discourages crime with graffiti-proof wall panels and open grating².



PARK RESTROOMS: >\$300,000+ maintenance

Permanent structures that house multiple toilets and sinks. These can be custom designed and can include green technology (water conservation, natural lighting). A con to these structures is that they are subject to being vandalized and used for illicit activities.

¹ <https://www.phlush.org/wp-content/uploads/2018/03/GoingPublic.pdf>

² <https://pffcdc.org/wp-content/uploads/2017/03/Portland-Loo-Presentation-DC-march-2017-1.pdf>

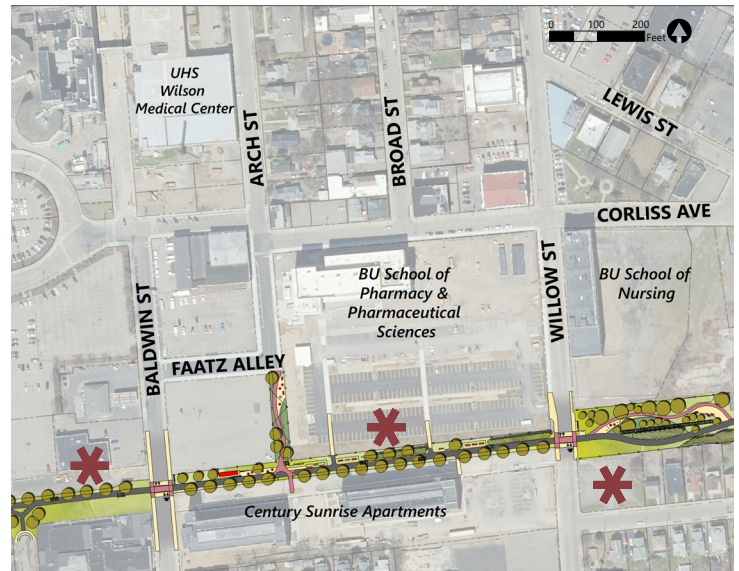
POTENTIAL TRAILHEAD PARKING

Three sites have been identified as potential locations for dedicated trailhead parking in Character Area A.

Existing Baldwin Street Parking Lot. Mentioned in Character Area A. The parking lot that is currently within the ROW can potentially accommodate trailhead parking.

Existing BU and/or UHS Parking Lots. Collaboration with UHS and/or Binghamton University to dedicate 5-6 parking spots should be investigated.

Existing Endicott Avenue/Willow Street Parking Lot. This existing parking lot is currently owned by Handicapped Children's Association (HCA) and dedicated to staff parking. Potential agreements through a lease or sale for future trailhead parking should be investigated.



LEGEND

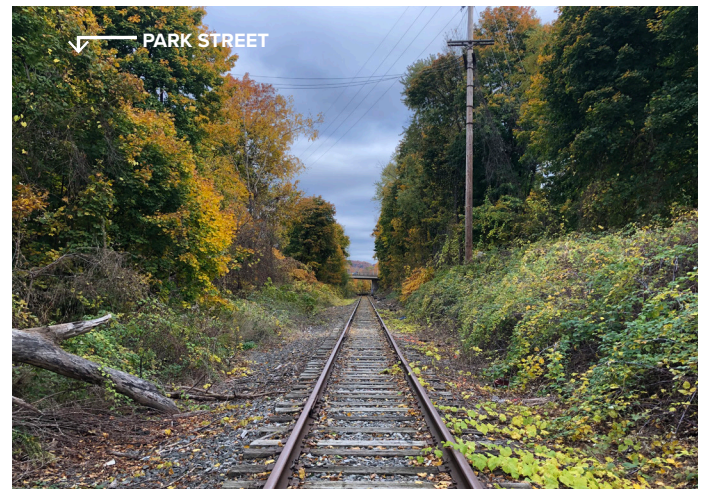
 Potential Location for Trailhead Parking



Existing street view from Endicott Avenue of HCA staff parking lot

Character Area C

From the end of the Willow Street Plaza to Wells Avenue the existing understory vegetation, scrub growth, invasive species and garbage are proposed to be removed. The remaining trees are to be limbed up to 8-ft to open views to and from this segment of the corridor.



Existing view of corridor near Park Street looking east.

AREA C: DEPRESSED CORRIDOR | PROPOSED DESIGN



① 12-ft Wide Asphalt Multi-use Trail with Striping

② Adjust Grade of Corridor to Meet ADA Access at Park Street

③ Access to trail From Main Street via Main Street Terrace

④ Access to Wells Avenue and Improvements to Sidewalks to Main Street

NEIGHBORHOOD NODES

In Character Area C, there are few opportunities for neighborhood connections for two main reasons, a) there are few side roads that dead end into the corridor unlike in Character Area A, and b) the grade difference between the adjacent is reaches 16 feet.

There are three potential connections from the trail to the neighborhood proposed in this area, with Wells Avenue being the terminus of the JC Rail Trail in the east end of the Village.

1. Park Street. The first proposed connection involves altering the corridor elevation, using fill from Character Area A, to raise the trail and create a connection at Park Street.

The raise will be at a 5% slope for 320-ft up to Park Street. This undulating profile not only offers this

connection but also trail interest for users as a change from the straight flat path.

The existing power substation at the terminus of Park Street, within the corridor ROW will need to be investigated further for any potential ownership/easement needs.

The Park Street trailhead is a gateway from Main Street. This node will act as a connection for trail users to the northside of Main Street to Lester Ave, CFJ Park, Walmart and any future development at the abandoned factory site. In addition to the Park Street connection from the trail the sidewalks along Park will need improvements

Left: Proposed perspective view showing the trail elevation change to and from the Park Street trailhead.



Proposed perspective view of the trail and Park Street trailhead looking east.

2. Main Street Terrace. The trail continues down at a 5% slope from Park Street and travels through and underpass of Main Street. After the underpass the trail also begins to curve south. The passage under Main Street is proposed to incorporate branding and lighting for identity and safety.

The second connection to the neighborhood is just past the connection to Park Street. There is a proposed spur to Main Street via a ramp off the south side of the trail up to Main Street Terrace.

Any steep slopes remaining after proposed fill and connections, should be stabilized using low growth vegetation, wildflower seeding and/or large rocks terraced into the slope if needed.

3. Wells Avenue. To open sight lines and make the underpass more inviting, after passing through, the trail should remain straight and hug the north edge of the corridor ROW. Then curve farther east meeting back to Wells Ave.

The final connection is at grade at the intersection of Wells Avenue. This trailhead will include the typical trailhead amenities including the informational kiosk, wayfinding signage, benches and plantings.

To facilitate trail use, connections at Park Street, Main Street Terrace and Wells Avenue and to establish neighborhood loops pedestrian sidewalks and road infrastructure for bicyclists will need to be improved for safety.



Proposed perspective view looking east at the connection path to Main Street Terrace.

POTENTIAL TRAILHEAD PARKING

Three sites have been identified as potential locations for dedicated trailhead parking,

Existing Park Street Parking Lot. This property is owned by BFSS LLC, is a Binghamton University Foundation. Collaboration with BU to dedicate 5-6 parking spots should be investigated.

On-Street Parking at Main Street Terrace. There is a possibility to dedicate on street parking along Main Street Terrace for the JC Rail Trail where the trail connection slopes up to the street.

ROW at Wells Avenue. There is space to dedicate 2-3 parking spaces for the JC Rail Trail as a trailhead at the east end of the proposed trail within the Village of Johnson City. The land shown in the image to the right is within a right-of-way.



Existing terminus of Main Street Terrace with stair access to Main Street.



Existing intersection of rail corridor at Wells Avenue.



LEGEND

 Potential Location for Trailhead Parking

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LINKAGES

Introduction

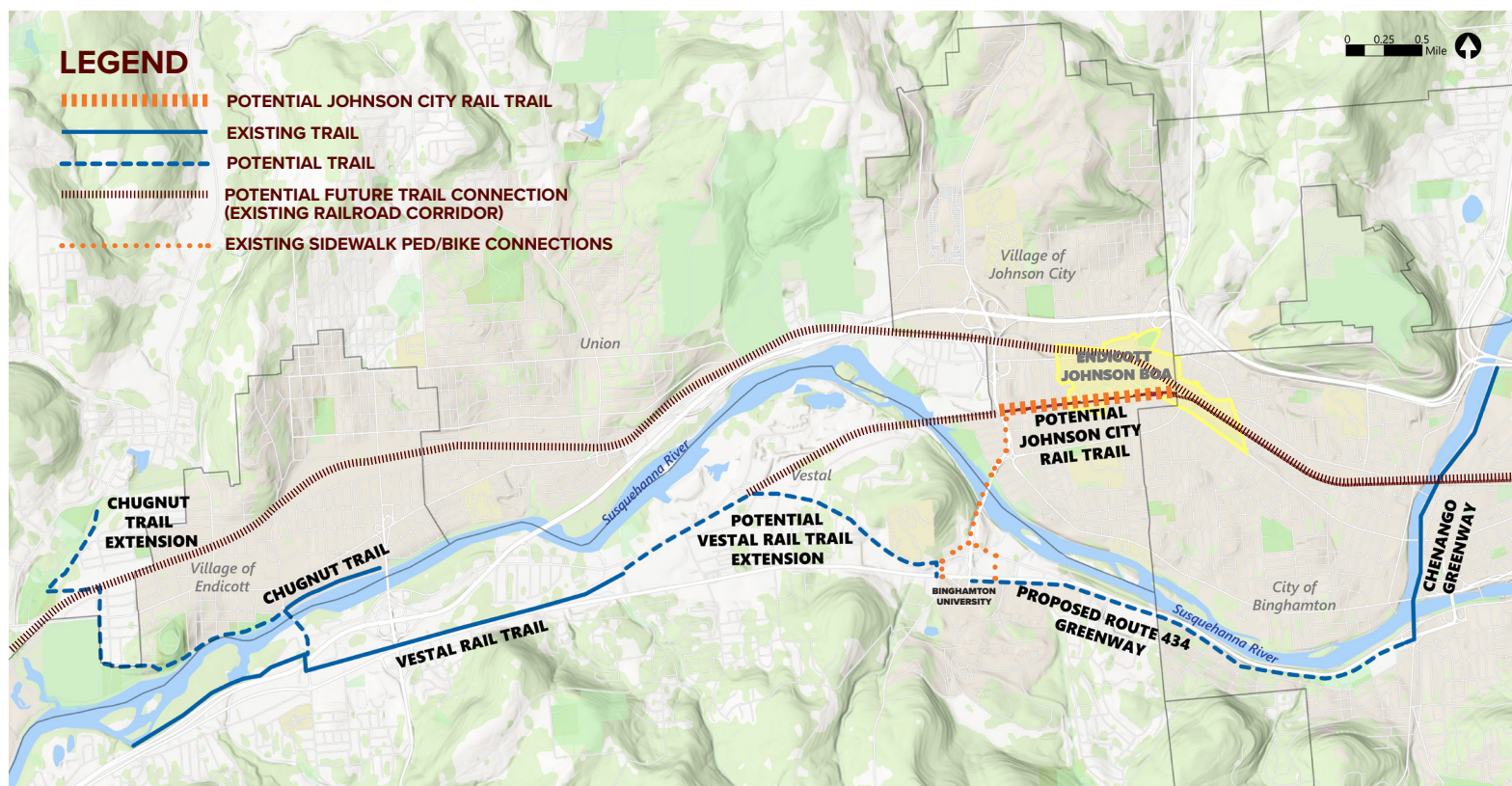
The JC Rail Trail would be the only dedicated trail in the Village of Johnson City, it would create an alternative mode of transportation for neighborhood and village residents across the village from west to east and connect destinations beyond the trail from the north and south.

Connections to the greater regional trail network and to local destinations beyond the neighborhood will impact the usability and success of the JC Rail Trail.



Vestal Rail Trail. Photo Credit: <https://newyorkoutdoors.wordpress.com/tag/vestal-rail-trail/>

REGIONAL CONNECTIONS MAP



Regional Trail Connections

Regionally the JC Trail has potential to connect to the Two Rivers Greenway Trail and proposed trail extensions from that system, the Vestal Rail Trail Extension and Proposed Route 434 Greenway, which connects to the Chenango River Promenade. The regional connection map on the previous page shows the context of other trails in the region.

Connecting to Binghamton University & Route 434 Greenway

This connection commences at the proposed trailhead at the terminus of the JC Rail Trail at Riverside Drive. Trail users would head south on Riverside Drive and cross at Grand Avenue (where crossing improvements are needed) and continue on the pedestrian path adjacent to Route 201 to the roundabout. Then users would continue south on either side of CFJ Memorial Park bridge to route 434 Vestal Parkway East. Bicycle users will share the road or use existing bike lanes or sharrows facilities and pedestrian will use existing sidewalks.

Trail users can also use Baldwin or Willow to travel south to Floral Avenue and head west to the roundabout and south from there.

Connecting to Vestal Rail Trail and West to Endicott

The desired route to the Vestal Rail Trail is to continue west on the rail corridor once it is converted to a trail. Before this is a reality the users can take same path to route 434 as described above and then head west along Vestal Road (County Route 44) to African Road. Just south of Vestal Road is where the Vestal Rail Trail East, African Road trailhead parking is located.

From the Vestal Rail Trail, users can head north on Bridge Street, the proposed route of the extension to the Chugnut Trail crossing the Susquehanna River into the Village of Endicott.

BIKE SHARE & EDUCATION PROGRAMS

A culture that encourages and supports bicycling is just as important as building the hard infrastructure that makes cycling possible.

Several universities across New York State have bike share programs to increase students' mobility and access to low-cost transportation. Binghamton University is one of those. In collaboration with Gotcha Bike, a bike share and technology company, The BU Bike Share program offers free bike rentals to students, faculty and staff.

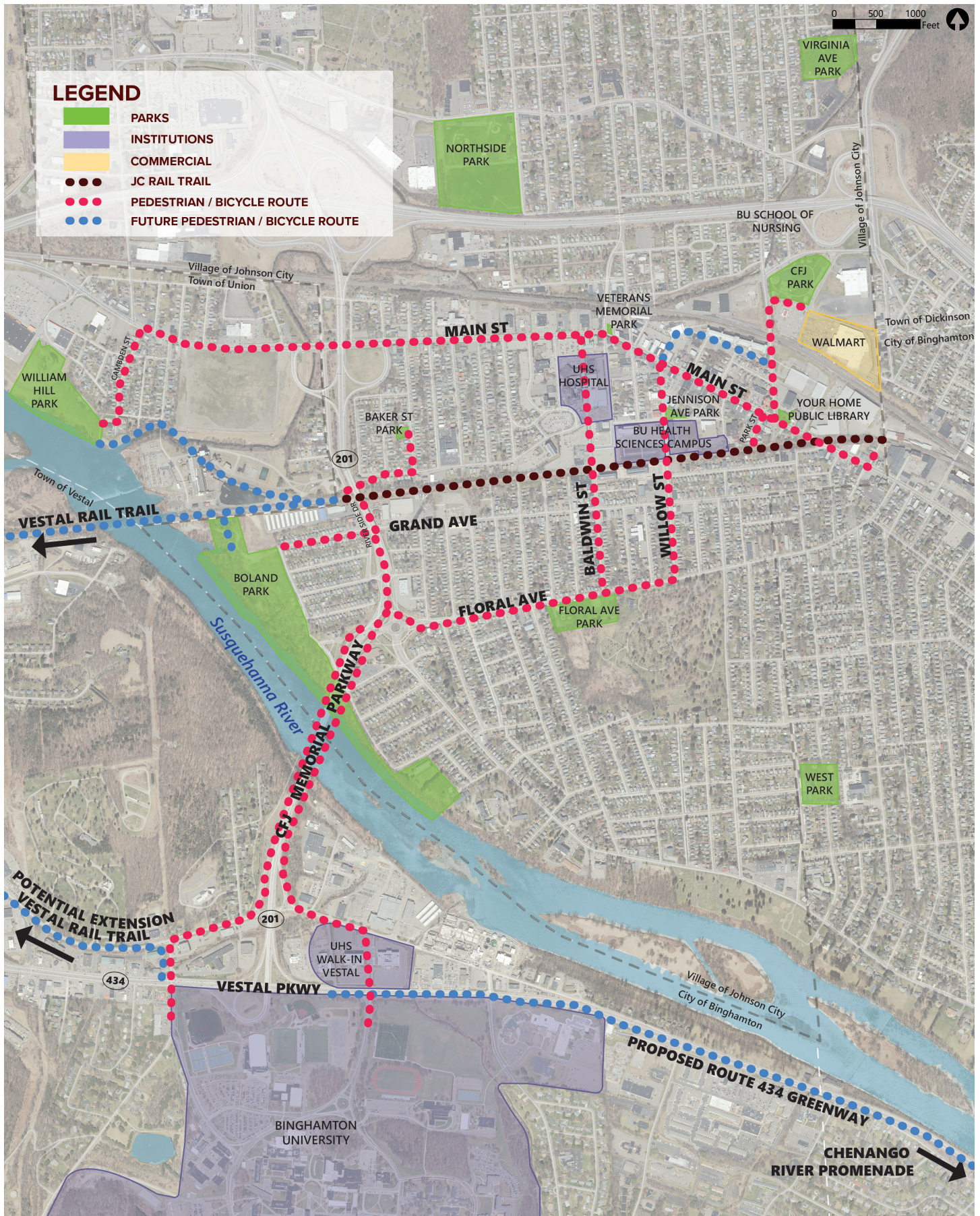
Currently, there are 30 GPS enabled bikes located in four locations on BU's main campus¹. The bikes can be reserved for free for the first two hours and then for \$5 an hour after that. The bikes are encouraged to be used to ride to class or around the local nature trails, perfect for a ride along the proposed JC Rail Trail.



As a part of the Blueprint Binghamton, the comprehensive plan for the City of Binghamton (2014), one of the goals related to improving bicycle transportation included 3.10: Consider a small bike share program. In addition to BU's Bike Share program, BMTS plans to develop an Urban Corridor Bike Share Study.

¹ <https://www.binghamton.edu/services/transportation-and-parking/alternative-transportation/bike-share/index.html>

LOCAL AND REGIONAL CONNECTIONS MAP



Local Connections

Locally the JC Rail Trail has the potential to connect to other key destinations such as parks, Binghamton University Campus, and local retail stores. These connections can be achieved with a series of existing and proposed on-road and off-road trail facilities. One proposed connection includes a path through the former BAE site to William Hill Park.

Providing these connections will further enhance the alternative transportation network in Broome County. These connections and future connections can be seen on the local and regional connections map on the previous page.

Loop Trails

In addition to users accessing the trail for daily transportation and or solely recreation along the trail below are examples of potential “lunch loops” (afternoon walks during lunch hour or between classes). Each loop varies in length and approximated time. This would be a fun way to incorporate the historical saying of “Which Way EJ?”

EXAMPLE LOOP TRAILS

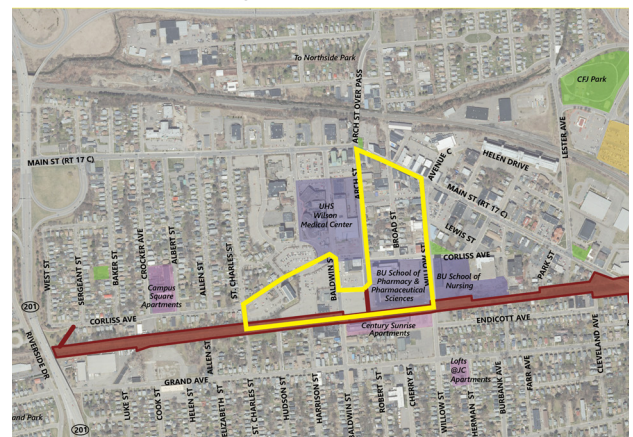
Lolly Pops Loop

0.5 Mile Loop | 10 Minute Lunch Walk



Lady Endicott Loop

1 Mile Loop | 1/2 Hour Lunch Walk



Ranger Loop

1.5 Mile Loop | 45 Minute Lunch Walk



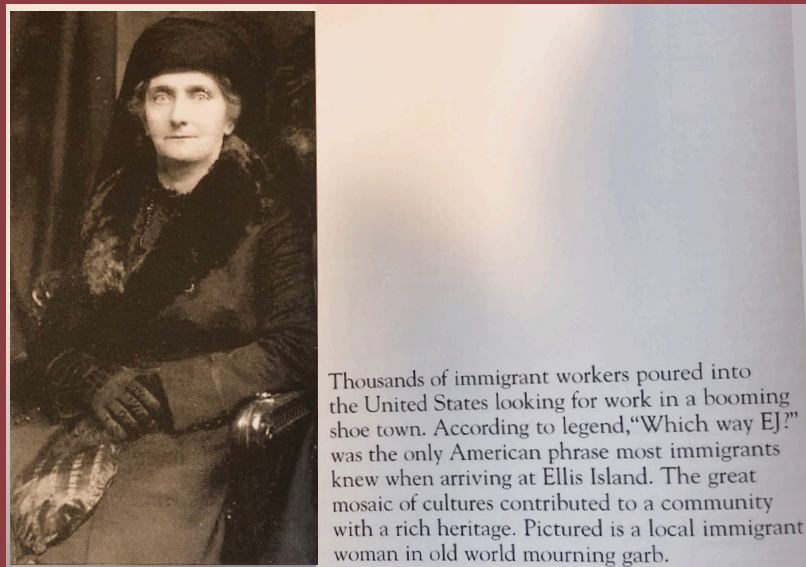
Treasure Step Loop

2 Mile Loop | 1 Hour Lunch Walk



LOOP TRAILS | WHICH WAY...?

The term “Which way EJ?” is a popular phrase among locals in Johnson City. The phrase is said to have originated in the late 19th- early 20th century when immigrants came through Ellis Island in New York City to work for EJ.



Reference of “Which way EJ!” -Excerpt from book “Endicott-Johnson: Images of America” by Ed Aswad & Suzanne M. Meredith

LOOP TRAILS

Loop trails can be 10, 30 minute or hour long walking loops throughout the adjacent neighborhoods can offer designated walking paths that can be achieved over lunch hours or breaks.

As the Village of Johnson City moves forward with loop trails this historic saying can be incorporated into the branding and collateral created for the trails. This can be achieved through pavement treatments, sand blasting, thermal plastic logos and signage.





IMPLEMENTATION

Pre-Construction Work

This Study represents a planning-level feasibility study, and therefore, additional actions and analyses will need to be undertaken prior to initiating construction of the recommended trail.

Grant Writing

Given the scope and significant expense associated with the recommend JC Rail Trail, the village should seek additional funding sources to support the acquisition, design and implementation of the project. Securing sufficient funding is a critical step and grant applications should be initiated as early as possible.

Engineering Design + Permitting

The proposed rail trail and cost estimates presented in this study will be refined significantly through engineering design and the preparation of construction documents and the construction bid package. During engineering design, additional analysis should be conducted, such as drainage and utility studies and potential dedicated parking spaces, to inform and refine design recommendations. Coordination with several Village and Town of Union Departments should occur throughout the entire engineering design process, including: the Departments of Engineering, Water and General Public Works.

Permitting should occur in advance of or at the beginning of engineering design (e.g., once 10% construction documents are developed) to ensure any permit requirements are efficiently integrated into the final design. Anticipated permitting and consultation requirements include:

- State Environmental Quality Review (SEQR)
- NYS Department of Transportation (DOT)
- NYS DEC SPDES General Permit for Stormwater Discharges from Construction Activity
- NYS State Historic Preservation Office (consultation)
- Local Permits for Buildings (for proposed structures), Signs, etc.



Cost Estimates and Phasing

This section provides an overview of the proposed estimated costs, phasing and prioritization of the JC Rail Trail implementation.

All cost estimates presented in this Study are planning-level with a high percentage of contingency to account for unknowns and unexpected risks. These planning-level cost estimates assume acquisition is final and no other right-of-way acquisitions is required and that estimated costs will be refined as designs are further developed. The cost estimates are presented by character area and broken down into categories to assist in identifying potential funding sources.

THE CURRENT PROJECT BUDGET FOR IMPLEMENTATION IS \$600,000 WITH \$500,000 FROM THE GREATER BINGHAMTON FUND (GBF) AND A \$100,000 MATCH FROM THE VILLAGE OF JOHNSON CITY.

IT IS RECOMMENDED THE VILLAGE USE THEIR MATCH TO COMPLETE CONSTRUCTION DOCUMENTS FOR THE ENTIRE ONE MILE CORRIDOR WITHIN JOHNSON CITY AND WITH THE INITIAL \$500,000 FROM THE GBF, CONSTRUCT THE BASE ASPHALT TRAIL AND INTERSECTION IMPROVEMENTS IN SEGMENT B.

BY COMPLETING CONSTRUCTION DOCUMENTS FOR THE ONE MILE TRAIL IN IT'S ENTIRETY, THE VILLAGE WILL BE PREPARED TO CONTINUE IMPLEMENTING THE TRAIL DESIGN AS FUNDING BECOMES AVAILABLE.

Each cost estimate includes the following:

- Materials and labor
- Mobilization (4% of total estimated cost of materials and labor)
- Basic Work Zone Traffic Control (5 % of total estimated cost of materials and labor)
- Survey Operations (5% of total estimated cost of materials and labor)
- Erosion & sediment control (5% of total estimated cost of materials and labor)
- Design fee (10% of total estimated cost of materials and labor).

Construction fees and contingencies are also included in each cost estimate as a percentage s of the total estimated cost of the project segment:

- Construction Contingency is conservatively estimated as 20% of the total estimated cost to account for incidentals, field changes and unknown risks.

Detailed cost estimates for the project may be found in Appendix C. The detailed estimates further break down the cost of the trail design to assist the Village of Johnson City and partners in phasing trail implementation. The actual design of the trail may change once the project reaches the detailed design stage and construction costs are subject to change over time. Dollar figures included are from 2019; escalation due to inflation or other factors is not included.

Phasing recommendations focus on designing implementing the base trail first including intersection improvements at Baldwin Street and Willow Street and then enhancing the trail experience with additional amenities and landscaping.

TOTAL CORRIDOR

***Corridor Acquisition Costs:****\$50,000*****Total Base Estimate with Asphalt Trail:****\$1,860,000****Total Estimate of Invasive Species Removal:****\$710,000****Total All Amenities:****\$3,280,000****GRAND TOTAL:****\$5,900,000**

***Corridor Acquisition Costs:** Acquisition costs for the abandoned railroad corridor is assumed to be approximately \$50,000 per mile. To purchase the approximate 4 mile corridor from Vestal to Binghamton the approximate cost would be +/- \$200,000. This is an estimate for planning purposes only; an exact cost for the 4-mile corridor or smaller segment will only be determined through continued negotiations with Norfolk Southern. It is recognized that purchasing individual segments of the corridor may not be an option. Based on research of representative railroad corridor sales between 1980-2013, corridor sale costs ranged from \$9,000 to \$947,000 per mile across the country¹.

***Total Base Estimate with Asphalt Trail:** Some railroad sales include removal of infrastructure and ballast. It is unknown whether Norfolk Southern will salvage existing rail infrastructure for their future use. For the purposes of this feasibility study estimates and preliminary design assume Norfolk Southern will remove existing infrastructure and ballast.

1 <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7B55457EC7-C8EF-485E-A036-21D5064C8AA8%7D>

AREA A: RAISED CORRIDOR



Segment A (Base Estimate with Asphalt Trail):

\$700,000

- Earthwork / Topsoil / Seeding (Connection to Riverside Drive / Tunnel Removal)
- Clearing and Grubbing / Tree Removal / Tree Pruning
- Basic Trail Signage (Wayfinding / Informational kiosk/MUTCD Trail signage)

Segment A Invasive Species Removal:

\$380,000

Segment A Additional Amenities:

\$525,000

- Trail Lighting (75-ft O.C. Spacing)
- Ornamental Benches/Bike Racks/ Trail Counters / Stone Boulders / Embedded Railroad Ties

Bridge Removal and Replacement:

\$450,000

- Existing Bridge Removal
- Sidewalk Repair
- Road Repair
- New Prefab Pedestrian Bridge Installed on Existing Abutments



SEGMENT A GRAND TOTAL:

\$2,055,000



Segment B (Base Estimate with Asphalt Trail):

\$590,000

- Earthwork / Topsoil / Seeding / Tree and Shrub Planting
- Baldwin and Willow Street Improvements
- Clearing and Grubbing / Tree Removal / Tree Pruning
- Basic Trail Signage (Wayfinding / Informational kiosk/MUTCD Trail signage)

Segment B Additional Amenities:

\$935,000

- Trail Lighting (75-ft O.C. Spacing)
- Ornamental Benches and Bike Racks / Stone Boulders / Embedded Railroad Ties / Tables and Chair/ Trail Counters
- Ornamental Fence & Brick Pier Treatment
- Repurposed Shipping container / Bike Rental Station
- Raised Community Gardens

Arch Street Alley:

\$590,000

- Ornamental Pavement
- Pedestrian Lighting and String Lights
- Ornamental Fence / Brick Pier Treatment
- Tables and Chairs
- Tree and Shrub Plantings



Willow Street Plaza:

\$430,000

- Ornamental Pavement
- Bike Rental Station
- Raised Community Gardens
- Tables and Chairs
- Tree and Shrub Plantings
- Sensory Elements / Therapeutic Gardens



SEGMENT B GRAND TOTAL:

\$2,545,000



Segment C (Base Estimate with Asphalt Trail):

\$570,000

- Earthwork / Topsoil / Seeding (Connections to Park Street and Main Street)
- Clearing and Grubbing / Tree Removal / Tree Pruning
- Basic Trail Signage / wayfinding

Segment C Invasive Species Removal:

\$330,000

Segment C Additional Amenities:

\$350,000

- Trail Lighting (75-ft O.C. Spacing)
- Ornamental Benches and Bike Racks / Stone Boulders / Embedded Railroad Ties

SEGMENT C GRAND TOTAL:

\$1,250,000

Funding

Due to the costs associated with full implementation of the Rail Trail corridor, it is likely that funding will be needed from multiple sources at the federal, state, local, and private levels. The implementation of the trail on a character area specific basis or utilizing another phased approach (beginning with acquiring the corridor and basic alignment) will likely be required to spread out the overall costs. A small amount of local or private funding, in conjunction with volunteerism and donated time and materials, can leverage state and federal funding to ensure the JC Rail Trail becomes a reality.

This section provides an overview of the potential funding sources for development of the JC Rail trail.

Greater Binghamton Fund (GBF)

The JC Rail Trail received \$500,000 from the first round of the Greater Binghamton Fund (GBF). If further rounds of the GBF should become available, The Village of Johnson City could apply for additional funding to help expand the implementation of the JC Rail Trail project.

Consolidated Funding Application (CFA)

A significant amount of State funding is now procured through the Consolidated Funding Application (CFA) process, an initiative begun in 2011 in concert with the establishment of the regional economic development councils (REDC). The JC Rail Trail is within the Southern Tier Regional Economic Development Council. Each Regional Economic Development Council has a Capital Fund for catalytic projects within the region. Funding requested through the Office of Parks Recreation and Historic Preservation is typically procured through the CFA.

New York State Office of Parks, Recreation and Historical Preservation (OPRHP)

The New York State Office of Parks, Recreation and Historical Preservation (OPRHP) dedicates state and federal funds to parks, historic preservation, heritage areas and trail projects through the Consolidated Funding Application (CFA) for the Environmental Protection Fund and Recreational Trails Programs.

Environmental Protection Fund Grant Program for Parks, Preservation and Heritage (EPF)

The NYS Environmental Protection Fund (EPF) was created in 1996 as part of a statewide bonding initiative. The EPF is a matching grant program for the acquisition, planning, development, and improvement of parks, historic properties, and heritage areas located within the physical boundaries of the State of New York. Funds may be awarded to municipalities or not-for-profits with an ownership interest. All applicants must use the online Consolidated Funding Application to apply.

The JC Rail Trail can benefit from the Parks Program within this grant. It is a matching grant program that can assist with the acquisition, development and planning of parks and recreational facilities such as the JC Rail Trail. In 2019, EPF offered up to \$19.5 million in matching grants for the planning, development, and improvement of parks. Any funds awarded must reflect the priorities established in NY Statewide Comprehensive Outdoor Recreation Plan (SCORP).

Recreational Trails Program (RTP)

RTP is a federal program that provides funds to each State to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational trail uses. The RTP provides funding from the U.S. Department of Transportation's Federal Highway Administration (FHWA) to construct and maintain recreational trails.

In New York State, the RTP is administered by the Office of Parks, Recreation and Historic Preservation (OPRHP). The RTP legislation requires that States use 30% of funds for non-motorized recreation, 30% for motorized recreation, and 40% for diverse recreational trail use.

In 2019, the RTP offered up to \$1.9 million in matching grants for the acquisition, development, rehabilitation and maintenance of trails and trail-related projects. Funded projects must further a specific goal of the Statewide Comprehensive Outdoor Recreation Plan (SCORP), the Statewide Trails Plan or a local plan, and must be accessible to the public.

Other State and Federal Programs

Community Development Block Grant Program (CDBG)

In New York State, The Office of Community Renewal administers the Community Development Block Grant (CDBG) program. The NYS CDBG program provides financial assistance to eligible cities, towns, and villages with populations under 50,000 and counties with an area population under 200,000, in order to develop viable communities.

Typically CDBG provides annual grants on a formula basis to local governments and states for a wide range of community planning initiatives, Community Development Block Grant Program (CDBG) funds are intended for activities that benefit low- and moderate-income persons, prevent or eliminate slums or blight, and address urgent community development needs.

In the past, the Rails to Trails Conservancy has reported that CDBG funds have been used for trail construction (<https://www.railstotrails.org/build-trails/trail-building-toolbox/funding/acquisition-funding/>).

Southern Tier 8

Established in 1968 as a special purpose local government unit under Articles 5G and 12B of New York State's General Municipal Law, this regional agency represents eight counties (including Broome County) as a Local Development District for the Appalachian Regional Commission (ARC), five counties as an Economic Development District under the US Economic Development Administration (EDA). ARC and EDA offer investments to leverage private sector dollars that increase job opportunities, raise per capita income, and promote infrastructure improvements.

Southern Tier 8 supports sustainable community programs and projects, striving to improve local opportunities for residents and businesses across the region. Southern Tier 8 has developed a Comprehensive Economic Development Strategy (CEDS), a regional effort that supports 6 goals defined to encourage community well-being and private-sector economic growth across our 8-county region in Upstate New York.

In 2019, the Two Rivers Greenway: Chugnut Trail Improvements requested funding which aligned with Goal 5 (create innovative approaches to community well-being) of the CEDS. To support the continued extension of this regional trail network it is possible for JC Rail Trail to apply for similar funding.

Climate Smart Communities (CSC)

The CSC Grant program was established in 2016 to provide 50/50 matching grants to cities, towns, villages and counties of the State of New York for eligible climate adaptation and mitigation projects. Funding is provided for projects that help communities reduce greenhouse gas emissions and prepare for a changing climate. The CSC is a grant program offered through the NY State CFA Funding Application. In 2019, five projects across the state were awarded funding to reduce vehicle miles through pedestrian/bicycle related projects. One of the five funded projects was similar to the JC Rail Trail in that it was a half mile multi-use trail.

Transportation Alternatives Program (TAP) and the Congestion Mitigation and Air Quality Improvement Program (CMAQ)

In April 2019, Governor Andrew M. Cuomo announced the award of \$144.3 million to bicycle, pedestrian and multi-use path transportation projects in New York State. It is anticipated that the next TAP Set-Aside solicitation will occur in the summer of 2020.

These set-aside funds include all projects and activities including projects like the JC Rail Trail; a smaller-scale transportation project that is proposed to provide pedestrian and bicycle facilities, a recreational trail, safe route, community improvements, and vegetation management.

Better Utilizing Investments to Leverage Development (BUILD) Transportation Discretionary Grants

Previously known as Transportation Investment Generating Economic Recovery, or TIGER Discretionary Grants, Congress has dedicated nearly \$7.9 billion for eleven rounds of National Infrastructure Investments to fund projects that have a significant local or regional impact.

Fiscal Year 2020 BUILD Transportation grants are for planning and capital investments in surface transportation infrastructure. These funds are to be awarded on a competitive basis for projects that will have a significant local or regional impact. BUILD funding can support roads, bridges, transit, rail, ports or intermodal transportation. Projects for BUILD will be evaluated based on merit criteria that include safety, economic competitiveness, quality of life, environmental sustainability, state of good repair, innovation, and partnership. The deadline to submit for a FY 2020 application is May 18, 2020.

Local Sources

Limited federal and state funding opportunities for trail development have led many communities to allocate more local funding for these types of projects. The most common sources of funds at the municipal level include allocations from specific departments (e.g., public works or parks). Local revenues for trail development have also been raised in some communities through property tax, sales tax, or bond measures.

Private Funding

Some trails have been partially or substantially developed utilizing private funds from private donations by individuals and businesses, corporate sponsorships, and various fundraising efforts.

Examples of fundraising efforts range from trail-related events, merchandise sales, and even the sale of trail sections or trail amenities in exchange for advertisement rights (ex. benches, information kiosks, etc).

An excellent New York State example of local private fundraising efforts is the Cayuga Waterfront Trail in Ithaca. A number of trails have been developed and maintained through the volunteer efforts of private individuals, Friends of the Trails groups, local civic organizations (Chamber of Commerce, Scout groups), and corporate volunteerism. Likewise, in some cases, specialized services (materials and equipment donation, trail construction work, trail design) have been donated by local businesses.

Foundations

Community foundations provide charitable contributions which may be a potential source of funding. They operate much like a private foundation, but their funds are derived from many donors rather than a single source. Community foundations are usually classified under the tax code as public charities and therefore are subject to different rules and regulations than those which govern private foundations.

Private foundations with health oriented missions are also more receptive to supporting trails as a means of encouraging healthy lifestyles (e.g., the Robert Wood Johnson Foundation's). Private and community foundation grants focus largely on outreach and capacity building, building grass-roots support among local trail enthusiasts.

In the case of the JC Rail Trail, private foundation funding could be utilized to build and organize a local organization to construct and maintain portions of the trail network, essentially functioning as seed money for local in-kind match services for larger state and federal funding opportunities.

Rails-to-Trails Conservancy (RTC)

The RTC has awarded close to \$2 billion since 2008. In 2015 RTC launched a grant program, the Doppelt Family Trail Development Fund, that supports organizations and local governments that are implementing projects to build and improve multi-use trails. Each year they award approximately \$85,000, distributed among several qualified projects.

2020 funds have been distributed, to get updates on future grants RTC suggests becoming a part of Trail Expert Network (TEN). The TEN is a resource for trail professionals to get relevant news and tools to help build and steward trails.



Less than 30 miles away, in 2020 the Rail Trail Council of Northeastern Pennsylvania was awarded a \$5,000 state grant match to install a bridge that connects the D&H Rail-Trail to the small town of Lanesboro, Pennsylvania, and eliminate the need for an on-road detour that is dangerous to walkers and bicyclists.

Next Steps

In order for the JC Rail Trail to become a reality the following priority actions should be advanced (some may be happening simultaneously).

1 Acquisition: Secure Property

The Village of Johnson City, in partnership with the Town of Union and Broome County must continue negotiations with Norfolk Southern Corporation in order to purchase the abandoned railroad corridor.

2 Engineering Design and Permits

Using a portion of the funding from the Greater Binghamton Fund to refine the trail design proposed in this Study through engineering design and the preparation of construction documents. Issues to explore include elevation changes, invasive species removal, parking, maintenance and neighborhood connections.

3 Implement Phase 1

Implement Phase 1 of the JC Rail Trail using funding from the Greater Binghamton Fund. It is recommended Phase 1 include construction the base asphalt trail construction, neighborhood connections and intersection improvements in Segment B.

4 Secure Additional Funding for Implementation

The Village of Johnson City, in partnership with the Town of Union and Broome County should continue to seek funding for implementation of the JC Rail Trail. Potential funding may come from a mix of public and private sources as described in the Funding Section of this report.

5 Land Owner Outreach + Collaboration

In order for the JC Rail Trail to be a success, the Village of Johnson City will need to remain in contact with adjacent landowners along the trail corridor. This will be an important part of the design process especially in the central section, Character Area B. Not only has encroachment onto the corridor already occurred in this area, but open dialogue is necessary to accomplish connections and amenities that will benefit the landowners, the Village of Johnson City and the JC Rail Trail.

Examples include conversion of the open space at the terminus of Arch Street, into a plaza gathering space, sidewalk connections through the Binghamton University School of Pharmacy and Pharmaceutical Sciences and Century Sunrise parking lots, and dedicated trailhead parking in the new parking lot within the corridor to the west of Baldwin Street.

6 Outreach to Neighborhood

The Village of Johnson City should continue to reach out to the neighborhood, local institutions and businesses. Inclusion of the neighborhood throughout the design process will help to create a sense of ownership of the trail by the community and will help the JC Rail Trail succeed.



Existing view of open space along the corridor looking north toward Arch Street.

APPENDIX A

summary

Johnson City Rail Trail Feasibility Study

Public Open House | November 20, 2019

A public open house was held on November 20, 2019 to provide an opportunity for Johnson City community members to learn about the Johnson City Rail Trail and provide feedback. The open-house style meeting featured four informational stations (regional context and corridor character). There were also, four interactive stations each offering opportunities to provide feedback. Each interactive station and results are summarized below.



This document was prepared with assistance from the New York State Department of State with funds provided through the Brownfield Opportunity Areas Program.



Station 1: Tell us what Amenities you would like to see

Station #1 provided an opportunity for attendees to give feedback by selecting the amenities they would most like to see on the Johnson City Rail Trail.

Information Hub- Charging Post, WiFi Available, Bulletin Board

Votes: 16

Bicycle/ Scooter Rental

Votes: 23

Public Art

Votes: 24

Playground Equipment

Votes: 29

Exercise Stations

Votes: 25

Gathering Space/ Event Programming- Food Trucks, Music Events, Picnic Area

Votes: 31

Water Fountains/ Bottle Filling Stations

Votes: 35

Summary of Station #1

While each station received plenty of votes top 3 are:

1. Water Fountains/ Bottle Filling Stations
2. Gathering Space/Event Programming
3. Playground Equipment

This document was prepared with assistance from the New York State Department of State with funds provided through the Brownfield Opportunity Areas Program.



Station 2: Please tell us what TYPE of amenities you would like to see.

Station #2 provided an opportunity for attendees to give feedback by selecting the appearance of different amenities.

Benches

Votes



4



9



3



4



6

Trash Receptacles

Votes



7



11



3



1



1

This document was prepared with assistance from the New York State Department of State with funds provided through the Brownfield Opportunity Areas Program.

Lighting

Votes



6



6



6

Lighting

Votes



3



6

Kiosk

Votes



2



4



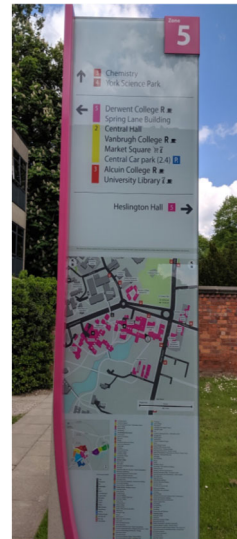
4

Kiosk

Votes



5



3

This document was prepared with assistance from the New York State Department of State with funds provided through the Brownfield Opportunity Areas Program.



Bicycle Racks

Votes



10



0



4



4



11

Summary of Station #2

Each attendee chose a sticker that represented their preferred style of the different amenities. The style with the most votes has been highlighted in red. The only item that does not have clear winner are the light fixtures.

Overall it appears that more traditional elements are chosen.

This document was prepared with assistance from the New York State Department of State with funds provided through the Brownfield Opportunity Areas Program.



Station 3: Share your ideas

Station #3 provided an opportunity for attendees to give feedback by writing on sticky notes any ideas or concerns they may have along the trail.



Comments on the board area as follows:

- | | |
|--|---|
| 1. Dog Park Somewhere? | 14. Playground design like Depot Park in Gainesville Florida |
| 2. Senior housing connect to trail | 15. Pedestrian right of way |
| 3. Underpass at Allen St is awful!! Unsafe and filthy! | 16. Ice cream place? Yes! |
| 4. Pedestrian right of way | 17. Wayfinding and kiosks with history of these structures |
| 5. Commons, garden | 18. Plaques describing historical locations such as buildings and tracks themselves |
| 6. Signage highlighting the history of the area, Wayfinding signage to these cultural destinations | 19. Spool art...gallery- music events |
| 7. Knotweed (Japanese bamboo) major issue! Who would be responsible? | 20. Yay! Finally a clear and lit-up underpass! Yes! |
| 8. "Info Stations/Hub, Signage, tell about history, buildings such as Johnson-Endicott factory | 21. Safety. Yes! Underpass needs to be clean |
| 9. Connect school to trail | 22. Train tressel bridge should have lighting |
| 10. Would like to see link to JC Library | 23. Continue to former Gowdy Station and connect to Vestal. Yes! |
| 11. Safety! Yes! | 24. Connection/Path to Corliss or West End |
| 12. <u>Parking?</u> Yes! | 25. Would like to see path go to river/bridge and cleanup area behind park. By the Town of Union! |
| 13. Rest Rooms not PortaPotty | |

This document was prepared with assistance from the New York State Department of State with funds provided through the Brownfield Opportunity Areas Program.

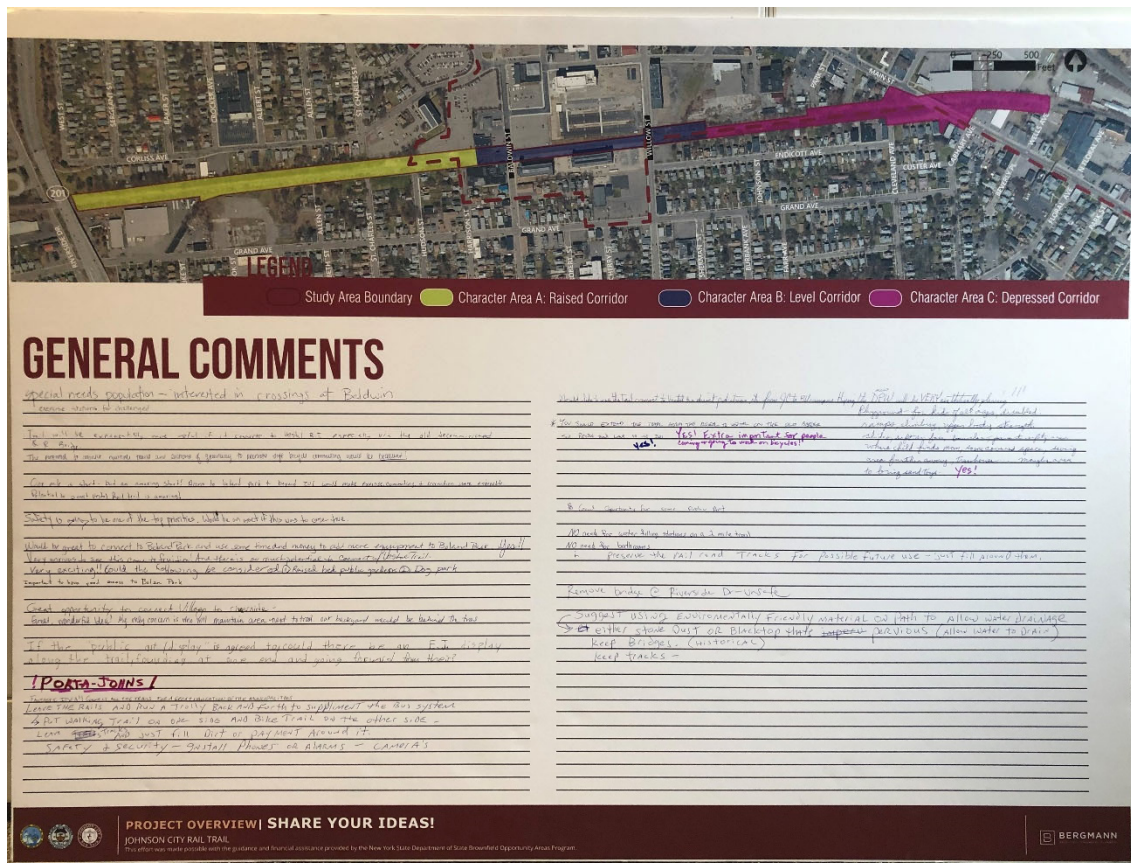
26. Great spot for mini park and public art...
27. Eventual separte crossing of 201 bridge for bicycles and pedestrians

Summary of Station #3

Comments given are mostly positive and looking for some historical connection as well connections to other regional areas.

Station 4: General Comments

At Station #4 participants were asked to share their ideas or comments in regards to the Johnson City Rail Trail. The comment board is illustrated below with the comments listed below.



Summary of Station #4 Comments

- Connection to Vestal Rail Trail is mentioned 5-6 times
- Safety is a major concern
- Connection to Boland Park
- Special needs population should be included in design (exercise stations for physically challenged)
- Public art should also include history of the area (Endicott Johnson factory)
- Removal of bridge at Riverside Drive

This document was prepared with assistance from the New York State Department of State with funds provided through the Brownfield Opportunity Areas Program.

Station 5: Comment Cards

At Station #5 participants were asked to share their comments on individual cards, they had the option of providing their name and email address. 5 comment cards were left:

Comment Card #1: Stan (skauff@binghamton.edu)

Very clear presentations that effectively reached many people in a small space.

Curious if there is a projected year that the bike JC trail system will reach the Vestal Trail Trail.

All this is a real boost to each community that these trails go through- We are very fortunate to be able to continue these plans during tough economic times- Thanks!

Comment Card #2: Robin Morse (Robin.Morse@hotmail.com)

We are very excited! Please release info on when we are expected to make this happen. Wonderful for the community!

Comment Card #3: History Hunting with Tom

Lets not forget about history such as plaques explaining when the tracks were built and for what railroad.

Give the history of the EJ buildings and bridge crossing the river.

To be honest the modern amenities being suggested do not interest me at all.

Comment Card #4: (Anonymous)

This is a wonderful idea to make a walking, biking trail right in town, accessible to so many people.

Comment Card #5: Marie Mebdon (strong.btfl@gmail.com)

I love the idea of continuity in the trail system, connecting communities (Vestal with JC) people to places, like parks and businesses.

Overall Summary of Public Meeting #1

The overall consensus was positive among the visitors. Most people seemed to be excited about the linkage to the Vestal Rail Trail. History and safety were also a common theme throughout the evening.

This document was prepared with assistance from the New York State Department of State with funds provided through the Brownfield Opportunity Areas Program.



sign-in

Johnson City RAIL TRAIL Feasibility Study

Open House | November 20, 2019

Please write your name, affiliation and email below.

NAME	ORGANIZATION	EMAIL
Tom LANGHERE	Village Resident	lamphere@binghamton.edu
Bob Prentice	Self	bobprentice@gmail.com
Kayla Velie	UHS	Kayla.velie@nyuhs.org
Todd Brown	UHS + Village resident	JCWildcat1985@gmail.com
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Johnson City RAIL TRAIL Feasibility Study

Open House | November 20, 2019

Please write your name, affiliation and email below.

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Johnson City RAIL TRAIL Feasibility Study

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send
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Johnson City RAIL TRAIL Feasibility Study

Open House | November 20, 2019

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APPENDIX B

RESEARCH AND BACKGROUND

- 1899 founded
- 1920's, thousands of miles of thread each day and 14 tons of tacks and nails, 20K employees
- 1940's boom with supplying military shoes, supplied army boots for WWI and WWII, averaged 52 million pairs of shoes per year, greater number of employees
- 1948 last company peak
- 1995 company sold, Rocky Shoes and Boots

Facts and Figures

- Independent leather opted out of the leather trust. Only shoe manufacture to do so.
- Over 100 trademarks for shoes, hosiery, clothing, rubber soles, and counters.
- Company based on welfare capitalism, responsibility of employer to provide welfare for employees
 - Paid by the piece, tannery conditions were dangerous, brand loyalty expected
- Johnson City was one of 5 main factories
 - 7,468 workers
 - Avg weekly production, 36,110 dozen pairs (433,320 pairs/week)
- 285 separate operations to make a single shoe:
 - Jigger, skiver, beamers, welt beaters, vamping, clicking, and cack.

IMAGERY AND INSPIRATION

- Brands
- Shoe types
- Advertisements
- Anatomy of a Shoe
- Tannery Colors

PROBLEM / CHALLENGES

- Context sensitive thematic concept
- Easily recognizable and pleasing identity
- Interpretation and education opportunities

PRELIMINARY DESIGN CONCEPTS

- Trail Logo
 - Incorporated boot imagery, as a symbol of Endicott Johnson Shoe Company
 - Recognizes the military boot production's impact on economic development
 - Work boot is symbol of factory workers of Johnson City
- Color Scheme
 - Earth tones based on tannery colors
- Graphic Branding
 - References the hundreds of thousands of miles of thread and shoelaces used in the city to make the shoes.
- Opportunities for Custom Features
 - Beacon
 - Nodes with bronze shoes as area icons
 - Fence slats with color scheme

Interpretive Opportunities

- Mapping of factory, plat maps historic factory plans
- Tannery information and Leather Trust history
- Welfare Capitalism
- Anatomy of a Shoe
- Production rates, types of shoes and trademarks

Branding & Identity – Inspiration and Background

Endicott Johnson Shoe Company

Brief History

- 1920's
 - Thousands of miles of thread each day and 14 tons of tacks and nails, 20K employees
 - 13 rail cars were filled daily with shoes shipments.
- 1940's
 - Second boom supplying military shoes.
 - Supplied army boots for WWI and WWII, averaged 52 million pairs of shoes per year, greater number of employees
- 1948 Last company peak
- 1995 Company sold, Rocky Shoes and Boots



WW II Boots

Branding & Identity – Inspiration and Background

Endicott Johnson Shoe Company

Notable facts and figures

- **The ONLY shoe manufacturer to opt out of the leather trust. EJ had its own tannery and produced their own leather for their shoes.**
- Over 100 trademarks for shoes, hosiery, clothing, rubber soles, and counters.
- Johnson City was home to 1 of 5 main factories
 - 7,468 workers
 - Avg weekly production, 433,320 pairs per week
- 285 separate operations to make a single shoe:
 - Terms no longer in daily use:
 - Skiver, beamers, welt beaters, vamping, and clicking.
- In 1920's, 13 rail cars were filled daily with shoes shipments.



Branding & Identity – Inspiration and Background

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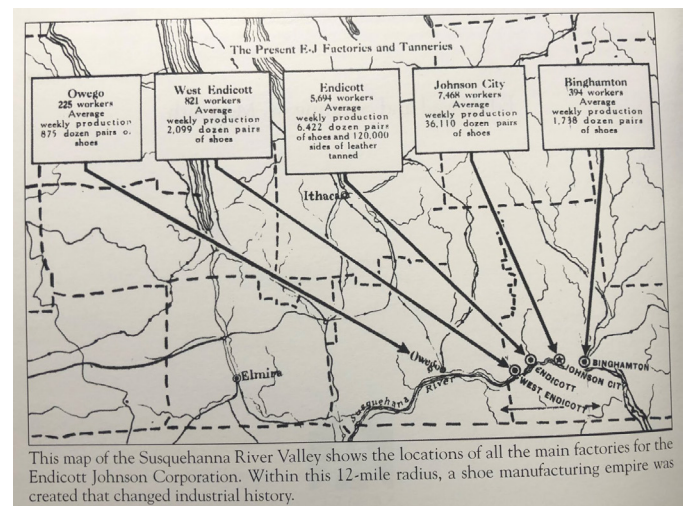


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Branding & Identity – Inspiration and Background

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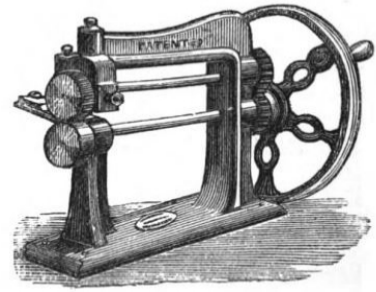
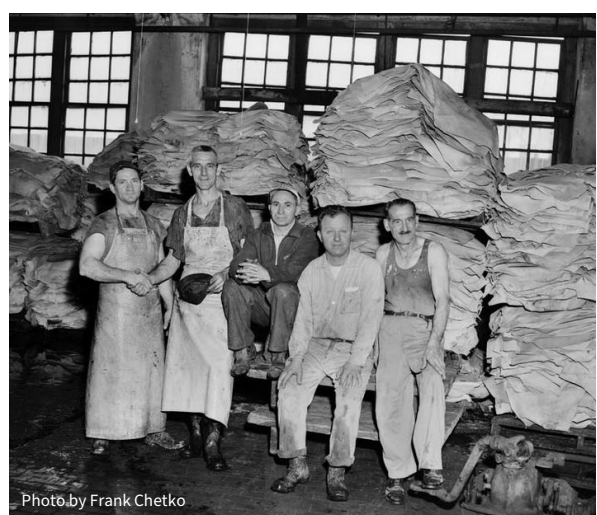


Fig. 75.—UPPER SKIVING MACHINE.



Waist Edge Iron

Branding & Identity – Color Theme



Branding & Identity – Color Theme



Branding & Identity – Interpretive Opportunities

Tools, Machines & Anatomy of a Shoe

- Hand tools used in the shoe making process
- Diagrams of shoe with names.
- Display shoe production volumes:
 - 433,320 pairs per week
 - 285 separate operations to make a single shoe.
 - 13 rail cars filled daily.
 - Thousands of miles of thread each day
 - 14 tons of tacks and nails

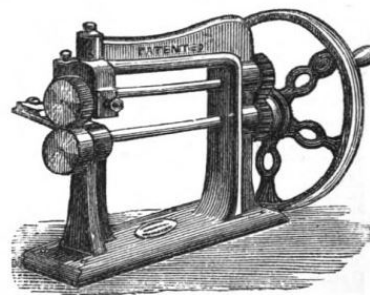
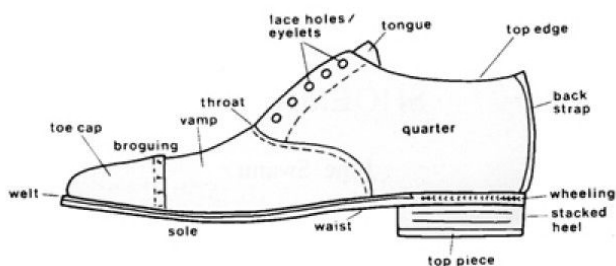


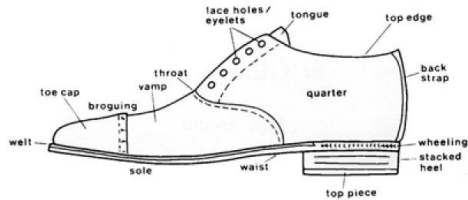
Fig. 75.—UPPER SKIVING MACHINE.



Branding & Identity – Interpretive Opportunities

EJ Brands & Anatomy of a Shoe

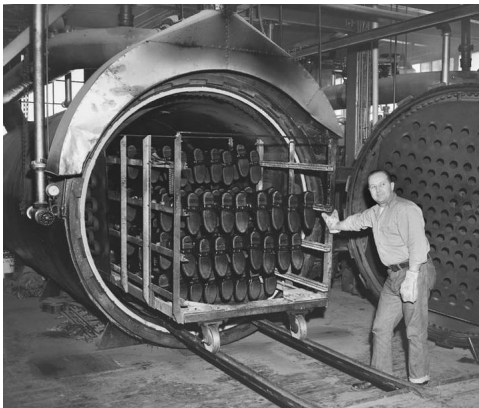
- Over 100 trademarks with unique logos.
- Diagrams of shoe with names.



Branding & Identity – Interpretive Opportunities

Historical Mapping & Shoe Making

- Historic maps with Factory Layout
- Identify some steps to making a shoe and where it occurred
- Highlight shoe production rates in graphic format



Photos by Frank Chetko

Branding & Identity – Trail Logo Alternatives

Early concept development



Revised concept designs



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APPENDIX C

JC Rail Trail Feasibility Study
Segment A - From Riverside Drive to Baldwin Street
Planning Level Cost Estimate



February 26, 2020

Item Description	Unit	Quantity	Unit Price	Cost
Segment A - Base Trail Construction				
Unclassified Excavation and Disposal	CY	0.0	\$25	\$0
Embankment In Place	CY	0.0	\$15	\$0
Earthwork (Assumed Cut/Fill Balance on Site)	CY	3,000.0	\$30	\$90,000
Clearing and Grubbing	AC	2.0	\$5,200	\$10,400
Tree Removal (assumed quantity)	EA	10.0	\$400	\$4,000
Prune Existing Trees and Shrubs	LS	1.0	\$5,700	\$5,700
Asphalt Trail - Including Excavation and Subbase	SF	41,464.0	\$5.50	\$228,052
Wayfinding / Information Kiosk	EA	3.0	\$10,000	\$30,000
Bollards	EA	7	\$500	\$3,500
MUTCD Trail Signage (Including Post and Sign Panels)	EA	3.0	\$250	\$750
Topsoil - Assume 4" depth	CY	870.0	\$75	\$65,250
Hydroseeding	SY	7,854.0	\$2.00	\$15,708
Segment A - Base Trail Construction SUB-TOTAL				\$453,360
Mobilization (4%)	LS	1		\$18,200
Basic Work Zone Traffic Control (5%)	LS	1		\$22,700
Survey Operations (5%)	LS	1		\$22,700
Erosion and Sediment Control (5%)	LS	1		\$22,700
Design (10%)	LS	1		\$45,400
TOTAL				\$585,060
Contingency (20%)				\$117,012
GRAND TOTAL PRELIMINARY COST				\$702,072
Segment A - Invasive Species Removal				
Control Invasive Species by Excavation	CY	4,444.0	\$20.00	\$88,880
Disposal of Materials Containing Invasive Species	CY	4,444.0	\$35.00	\$155,540
Equipment Cleaning	LS	1.0	\$1,000.00	\$1,000
Segment A - Invasive Species Removal SUB-TOTAL				\$245,420
Mobilization (4%)	LS	1		\$9,900
Basic Work Zone Traffic Control (5%)	LS	1		\$12,300
Survey Operations (5%)	LS	1		\$12,300
Erosion and Sediment Control (5%)	LS	1		\$12,300
Design (10%)	LS	1		\$24,600
TOTAL				\$316,820
Contingency (20%)				\$63,364
GRAND TOTAL PRELIMINARY COST				\$380,184
Segment A - Additional Amenities				
Foundation for Light Standards	EA	47.0	\$900	\$42,300
Pedestrian Light Assembly	EA	47.0	\$3,000	\$141,000
2" Conduit	LF	3,525.0	\$6	\$21,150
Wire	LF	3,525.0	\$2	\$7,050
Electric Meter	LS	1.0	\$3,000	\$3,000
Ornamental Benches	EA	11.0	\$5,000	\$55,000
Ornamental Bike Racks	EA	5.0	\$1,500	\$7,500
Integral Color Concrete - Including Excavation and Subbase	CY	53	\$635	\$33,655
Embedded Railroad Ties	EA	20.0	\$600	\$12,000
Stone Boulders	EA	20	\$500	\$10,000
Trail Counters	EA	1	\$6,000	\$6,000
Segment A - Base Trail Construction SUB-TOTAL				\$338,655
Mobilization (4%)	LS	1		\$13,600
Basic Work Zone Traffic Control (5%)	LS	1		\$17,000
Survey Operations (5%)	LS	1		\$17,000
Erosion and Sediment Control (5%)	LS	1		\$17,000
Design (10%)	LS	1		\$33,900
TOTAL				\$437,155
Contingency (20%)				\$87,431
GRAND TOTAL PRELIMINARY COST				\$524,586
TOTAL SEGMENT A PROJECT COST				\$1,606,842

Assumptions

JC Rail Trail Feasibility Study
 Bridge Removal / Replacement
 Planning Level Cost Estimate



February 26, 2020

Item Description	Unit	Quantity	Unit Price	Cost
Segment A - Bridge Removal and Replacement				
Bridge Removal	LS	1.0	\$50,000	\$50,000
Sidewalk Repair	LS	1.0	\$20,000	\$20,000
Road Reapair	LS	1.0	\$50,000	\$50,000
New Pedestrian Bridge	LS	1.0	\$150,000	\$150,000
Segment A - Base Trail Construction SUB-TOTAL				\$270,000
Mobilization (4%)	LS	1		\$10,800
Basic Work Zone Traffic Control (5%)	LS	1		\$13,500
Survey Operations (5%)	LS	1		\$13,500
Erosion and Sediment Control (5%)	LS	1		\$13,500
Design (10%)	LS	1		\$27,000
TOTAL				\$348,300
Contingency (20%)				\$69,660
GRAND TOTAL PRELIMINARY COST				\$417,960

Assumptions

1. Cost to purchase corridor from Norfolk Southern not included.
2. Removal of railroad tracks and ties by Norfolk Southern.

JC Rail Trail Feasibility Study
Segment B - From Baldwin Street to Willow Street
Planning Level Cost Estimate



February 26, 2020

Item Description	Unit	Quantity	Unit Price	Cost
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Baldwin Intersection Improvements

Integral Color Concrete Sidewalk - Including Excavation and Subbase (6" Sidewalk)	CY	23	\$635	\$14,605
Integral Color Concrete Ramp - Including Excavation and Subbase (12" Sidewalk)	CY	26	\$1,270	\$33,020
Reset Existing Frame and Grate	EA	2	\$600	\$1,200
Detectable Warning Strip	SY	4	\$415	\$1,660
Bollards	EA	2	\$500	\$1,000
Curb	LF	107	\$85	\$9,095
Pavement Markings	LF	200	\$2	\$400
MUTCD Trail Signage (Including Post and Sign Panels)	EA	6	\$250	\$1,500
Rectangular Rapid Flashing Beacon (RRFB)	EA	2	\$12,000	\$24,000
Baldwin Intersection SUB-TOTAL				\$86,480

Willow Intersection Improvements

Integral Color Concrete - Including Excavation and Subbase	CY	18	\$635	\$11,430
Integral Color Concrete Ramp - Including Excavation and Subbase (12" Sidewalk)	CY	21	\$1,270	\$26,670
Reset Existing Frame and Grate	EA	2	\$600	\$1,200
Detectable Warning Strip	SY	4	\$415	\$1,660
Bollards	EA	2	\$500	\$1,000
Curb	LF	66	\$85	\$5,610
Pavement Markings	LF	200	\$2	\$400
MUTCD Trail Signage (Including Post and Sign Panels)	EA	6	\$250	\$1,500
Rectangular Rapid Flashing Beacon (RRFB)	EA	2	\$12,000	\$24,000
Baldwin Intersection SUB-TOTAL				\$73,470

Segment B - Base Trail Construction

Asphalt Trail - Including Excavation and Subbase	SF	15,600.0	\$5.50	\$85,800
Wayfinding / Information Kiosk	EA	2.0	\$10,000	\$20,000
Topsoil - Assume 4" depth	CY	651.0	\$75	\$48,825
Hydroseeding	SY	5,859.0	\$2.00	\$11,718
Tree Planting	EA	26.0	\$800.00	\$20,800
Shrub Planting	EA	500.0	\$65.00	\$32,500
Segment B - Base Trail Construction SUB-TOTAL				\$219,643
SUB-TOTAL				\$379,593

Mobilization (4%)	LS	1		\$15,200
Basic Work Zone Traffic Control (5%)	LS	1		\$19,000
Survey Operations (5%)	LS	1		\$19,000
Erosion and Sediment Control (5%)	LS	1		\$19,000
Design (10%)	LS	1		\$38,000

TOTAL**\$489,793****Contingency (20%)****\$97,959****GRAND TOTAL PRELIMINARY COST****\$587,752****Segment B - Additional Amenities**

Foundation for Light Standards	EA	19.0	\$900	\$17,100
Pedestrian Light Assembly	EA	19.0	\$3,000	\$57,000
2" Conduit	LF	1,418.0	\$6	\$8,508
Wire	LF	1,418.0	\$2	\$2,836
Electric Meter	LS	1.0	\$3,000	\$3,000
Ornamental Benches	EA	10.0	\$5,000	\$50,000
Ornamental Bike Racks	EA	5.0	\$1,500	\$7,500
Ornamental Fence	LF	2,208.0	\$100	\$220,800
Ornamental Pier	EA	20.0	\$7,500	\$150,000
Lounge Chairs	EA	3.0	\$5,000	\$15,000
Embedded Railroad Ties	EA	32.0	\$600	\$19,200
Repurposed Shipping Container	LS	1.0	\$10,000	\$10,000
Moveable Tables & Umbrella	EA	4.0	\$300	\$1,200
Moveable Chairs	EA	16.0	\$200	\$3,200
Bike Rental Station	EA	1.0	\$10,000	\$10,000
Community Gardens (Including Excavation and Planting Soil)	SF	1,000	\$15	\$15,000
Stone Boulders	EA	15	\$500	\$7,500
Trail Counters	EA	1	\$6,000	\$6,000
Segment B - Base Trail Construction SUB-TOTAL				\$603,844

Mobilization (4%)	LS	1		\$24,200
Basic Work Zone Traffic Control (5%)	LS	1		\$30,200
Survey Operations (5%)	LS	1		\$30,200
Erosion and Sediment Control (5%)	LS	1		\$30,200
Design (10%)	LS	1		\$60,400

TOTAL**\$779,044****Contingency (20%)****\$155,809****GRAND TOTAL PRELIMINARY COST****\$934,853****TOTAL SEGMENT B PROJECT COST****\$1,522,594**

**JC Rail Trail Feasibility Study
Arch Street Alley
Planning Level Cost Estimate**



February 26, 2020

Item Description	Unit	Quantity	Unit Price	Cost
Arch Street Alley				
Foundation for Light Standards	EA	5.0	\$900	\$4,500
Pedestrian Light Assembly	EA	5.0	\$3,000	\$15,000
2" Conduit	LF	375.0	\$6	\$2,250
Wire	LF	375.0	\$2	\$750
Electric Meter	LS	1.0	\$3,000	\$3,000
Ornamental String Lights	LF	240.0	\$112	\$26,880
Ornamental Benches	EA	5.0	\$5,000	\$25,000
Ornamental Bike Racks	EA	10.0	\$1,500	\$15,000
Ornamental Fence	LF	368.0	\$100	\$36,800
Ornamental Pier	EA	14.0	\$7,500	\$105,000
Lounge Chairs	EA	5.0	\$5,000	\$25,000
Integral Color Concrete - Including Excavation and Subbase	CY	110	\$635	\$69,850
Moveable Tables & Umbrella	EA	3.0	\$300	\$900
Moveable Chairs	EA	12.0	\$200	\$2,400
Stone Boulders	EA	10	\$500	\$5,000
Tree Planting	EA	12.0	\$800.00	\$9,600
Shrub Planting	EA	500.0	\$65.00	\$32,500
Arch Street Alley Construction SUB-TOTAL				\$379,430
Mobilization (4%)	LS	1		\$15,200
Basic Work Zone Traffic Control (5%)	LS	1		\$19,000
Survey Operations (5%)	LS	1		\$19,000
Erosion and Sediment Control (5%)	LS	1		\$19,000
Design (10%)	LS	1		\$38,000
TOTAL				\$489,630
Contingency (20%)				\$97,926
GRAND TOTAL PRELIMINARY COST				\$587,556

Assumptions

**JC Rail Trail Feasibility Study
Willow Street Plaza
Planning Level Cost Estimate**



February 26, 2020

Item Description	Unit	Quantity	Unit Price	Cost
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Segment B - Additional Items

Ornamental Benches	EA	6.0	\$5,000	\$30,000
Ornamental Bike Racks	EA	5.0	\$1,500	\$7,500
Lounge Chairs	EA	8.0	\$5,000	\$40,000
Integral Color Concrete - Including Excavation and Subbase	CY	73	\$635	\$46,355
Embedded Railroad Ties	EA	50.0	\$600	\$30,000
Moveable Tables & Umbrella	EA	6.0	\$300	\$1,800
Moveable Chairs	EA	18.0	\$200	\$3,600
Bike Rental Station	EA	1.0	\$10,000	\$10,000
Community Gardens (Including Excavation and Planting Soil)	SF	1,050	\$15	\$15,750
Stone Boulders	EA	12	\$500	\$6,000
Tree Planting	EA	25.0	\$800.00	\$20,000
Shrub Planting	EA	1,000.0	\$65.00	\$65,000

Willow Street Plaza Construction SUB-TOTAL \$276,005

Mobilization (4%)	LS	1		\$11,100
Basic Work Zone Traffic Control (5%)	LS	1		\$13,900
Survey Operations (5%)	LS	1		\$13,900
Erosion and Sediment Control (5%)	LS	1		\$13,900
Design (10%)	LS	1		\$27,700

TOTAL \$356,505

Contingency (20%) \$71,301

GRAND TOTAL PRELIMINARY COST \$427,806

Assumptions

JC Rail Trail Feasibility Study
Segment C - From Willow Street to Wells Ave
Planning Level Cost Estimate



February 26, 2020

Item Description	Unit	Quantity	Unit Price	Cost
Segment C - Base Trail Construction				
Earthwork (Assumed Cut/Fill Balance on Site)	CY	3,000.0	\$30	\$90,000
Clearing and Grubbing	AC	3.0	\$5,200	\$15,600
Tree Removal (assumed quantity)	EA	10.0	\$400	\$4,000
Prune Existing Trees and Shrubs	LS	1.0	\$5,700	\$5,700
Asphalt Trail - Including Excavation and Subbase	SF	28,396.0	\$5.50	\$156,178
Wayfinding / Information Kiosk	EA	3.0	\$10,000	\$30,000
Bollards	EA	5	\$500	\$2,500
MUTCD Trail Signage (Including Post and Sign Panels)	EA	3.0	\$250	\$750
Topsoil - Assume 4" depth	CY	670.0	\$75	\$50,250
Hydroseeding	SY	6,030.0	\$2.00	\$12,060
Segment C - Base Trail Construction SUB-TOTAL				\$367,038
Mobilization (4%)	LS	1		\$14,700
Basic Work Zone Traffic Control (5%)	LS	1		\$18,400
Survey Operations (5%)	LS	1		\$18,400
Erosion and Sediment Control (5%)	LS	1		\$18,400
Design (10%)	LS	1		\$36,800
TOTAL				\$473,738
Contingency (20%)				\$94,748
GRAND TOTAL PRELIMINARY COST				\$568,486
Segment C - Invasive Species Removal				
Control Invasive Species by Excavation	CY	3,851.0	\$20.00	\$77,020