

2013

Prepared by Bergmann Associates in
association with Steinmetz Planning
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BLACK CREEK TRAIL FEASIBILITY STUDY

Funded in part by the Genesee Transportation Council, this study explores the feasibility of a fifteen mile trail connecting the Village of Churchville, through the Towns of Riga and Chili, to the Genesee Valley Greenway within the Black Creek Trail Study Area.

Financial assistance for the preparation of this report was provided by the Federal Highway Administration through the Genesee Transportation Council (GTC). The Town of Chili, Town of Riga, and Village of Churchville are responsible for its content and the views and opinions expressed herein do not necessarily reflect the official views or policy of the U.S. Department of Transportation.

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Acknowledgments

We wish to thank the many people who participated in the development of this Study.

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Executive Summary

The purpose of this study is to evaluate the feasibility of a trail located within the Black Creek corridor connecting the Village of Churchville, Black Creek Park, the Chili Nature Center and the Genesee Valley Greenway Trail.

Overview

The Black Creek Trail is a Mid-Term Project Recommendation in the Regional Trails Initiative (RTI) as developed by the Genesee Transportation Council (GTC) in 2002. The Town of Chili received funding from the GTC to explore the feasibility of an approximately 15-mile trail connecting the Village of Churchville, through the Towns of Chili and Riga, to the Genesee Valley Greenway within the Black Creek Trail Study Area. The goal of the trail is to provide a non-motorized transportation facility which connects neighborhoods, parks, schools, retail and service establishments and employment centers and to provide a connection to other existing and planned trails in the larger regional trail network.

The study involved an analysis of:

- the existing characteristics of the project area;
- the presentation of potential alignments and features to the Steering Committee and the public;
- the integration of feedback into the preliminary alternatives;
- the selection of a preferred alternative; and
- the development of an implementation plan for future development of a trail.

The physical and environmental attributes of the project area and a preferred alternative are outlined in this report. The preferred alternative was supported by the Steering Committee and the general public. Overall, the construction of a trail connecting these communities could provide the area with new opportunities for alternative transportation and recreation.

Community Support and Participation

The Towns of Chili, Riga, and Village of Churchville established a Steering Committee to oversee the development of a Feasibility Study for the Black Creek Trail. The Steering Committee included Town and Village officials as well as other local stakeholders with multi-use trail experience. Bergmann Associates was hired as the consultant to assist with trail feasibility, master planning and public outreach. This included two public meetings, four Steering Committee meetings and meetings with landowners potentially affected by the proposed trail. Information gathered from the public, Steering Committee and inventory and analysis of the project site resulted in the selection of a preferred alternative.

Enhancement of the Environment

Trail alignment alternatives were identified and evaluated according to several criteria, including economic benefit, cost of improvements, land ownership, connectivity and environmental impacts. The preferred trail alignment balances these criteria along with consideration of cost-effectiveness, impacts to adjacent landowners and timely completion. The connections made by the Black Creek Trail would serve as an important enhancement to the quality of life enjoyed by residents, visitors and those employed in the area. The proposed trail would also enhance the quality of the regional trail network by acting as a link between existing trails in the area, including the West Shore Trail and Genesee Valley Greenway Trail.

Enhancement of the Transportation System

For the ease of organizing and evaluating the feasibility of this project, the potential trail corridor was divided into three segments:

- Segment A—Village of Churchville to Black Creek Park at Stuart Road;
- Segment B— Black Creek Park at Stuart Road to Chili Scottsville Road ; and
- Segment C— Chili Scottsville Road to the Genesee Valley Greenway Trail.

Each segment contained several trail alternatives. The preferred alternative for the Black Creek Trail (See Figure 1) consists of Alternatives A-1, B-1 from Black Creek Park to Stottle Road, B-2 and C-1 as described in the Trail Alignment Alternatives section. The preferred alternative achieves the overall goal of providing a non-motorized transportation facility connecting the Village of Churchville, through the Towns of Chili and Riga, to the Genesee Valley Greenway within the Black Creek Trail Study Area.



Figure 1 | Preferred Trail Alignment Map, See map 10, Appendix A

Opinion of Probable Cost

The analysis of the Study Area and discussions with the Steering Committee resulted in the recommendation for a two phased project. Phase I would be feasible in a five year timeframe, and Phase II would be feasible in a ten year timeframe.

Phase I (Five Year Plan) includes the construction of the on-road and off road trail segments within the Village of Churchville, local bicycle route designation n, installation of signage in the Town of Chili, Riga, and Village of Churchville, and the construction of off road trail segments within Chili. The improvements include trail crossings, signage, trailheads, and landscape enhancements. The planning-level opinion of probable cost for these elements in 2013 dollars is approximately \$4.2 million dollars, which includes costs for contingency (20 percent), engineering (15 percent), and construction management (15 percent).

Phase II (Ten Year Plan) includes the construction of the remaining on road and off road trail segments, crossing improvements, directional signage, relocation of existing utility poles, mailboxes and hydrants. The planning-level opinion of probable cost for these elements in 2013 dollars is approximately \$9.2 million dollars, which includes costs for contingency (20 percent), engineering (15 percent), and construction management (15 percent).

Together, Phase I and Phase II represent the construction of approximately four miles of off-road trail and ten miles of on-road trail and necessary amenities to provide pedestrian and bicyclist connectivity between the Genesee Valley Greenway Trail in Chili with Churchville Park (via the West Shore Trail) in the Village of Churchville. The construction of the complete feasible alternative is estimated to be approximately \$13.4 million inclusive of contingencies, engineering and construction management fees.

Conclusion

The Black Creek Trail represents a significant opportunity for the residents of Chili, Riga, and Churchville to improve their non-motorized transportation alternatives and provide an enhanced level of choice in their recreational activities. The preferred alternative provides the greatest level of connectivity, improved safety and quality of life enhancements while balancing all other factors and local community values. Moving forward, project success will hinge upon the continued cooperation of the Towns of Chili, Riga, and Village of Churchville with State and County officials and the involvement of project stalwarts that are determined and committed to seeing this project to its fruition.

Introduction

Project Overview

The Black Creek Corridor Trail is a Mid-Term Project Recommendation in the Regional Trails Initiative (RTI) as developed by the Genesee Transportation Council (GTC) in 2002. The RTI process prioritized potential trails for further study based upon several factors such as community support, importance to the overall regional system and cost. Based upon this information, the Black Creek Trail was identified as a Mid-Term Project Recommendation. The Town of Chili received funding from the GTC to explore the feasibility of an approximately 15-mile trail connecting the Village of Churchville, through the Towns of Chili and Riga, to the Genesee Valley Greenway within the Black Creek Trail Study Area. This potential connection will be achieved with new off-road shared use paths and on-road signed shared roadway facilities.

The Study Area follows Black Creek, which flows west to east from the Village of Churchville to its confluence with the Genesee River (Figure 2). The Creek meanders as it flows west to east offering many scenic opportunities throughout the Study Area. In the Village of Churchville, the Study Area consists of a mix of land uses, including industrial, commercial, residential and public lands. Within the Town of Riga, the Study Area consists of a mix of agricultural and residential properties. Through the Town of Chili, there are primarily residential properties with several public parcels and parks. There are fifteen vehicular bridges that transect the Study Area, offering challenges for creekside trail alignments and pedestrian safety. Opportunities for a creekside trail alignment are present within the six public parks within the Study Area.

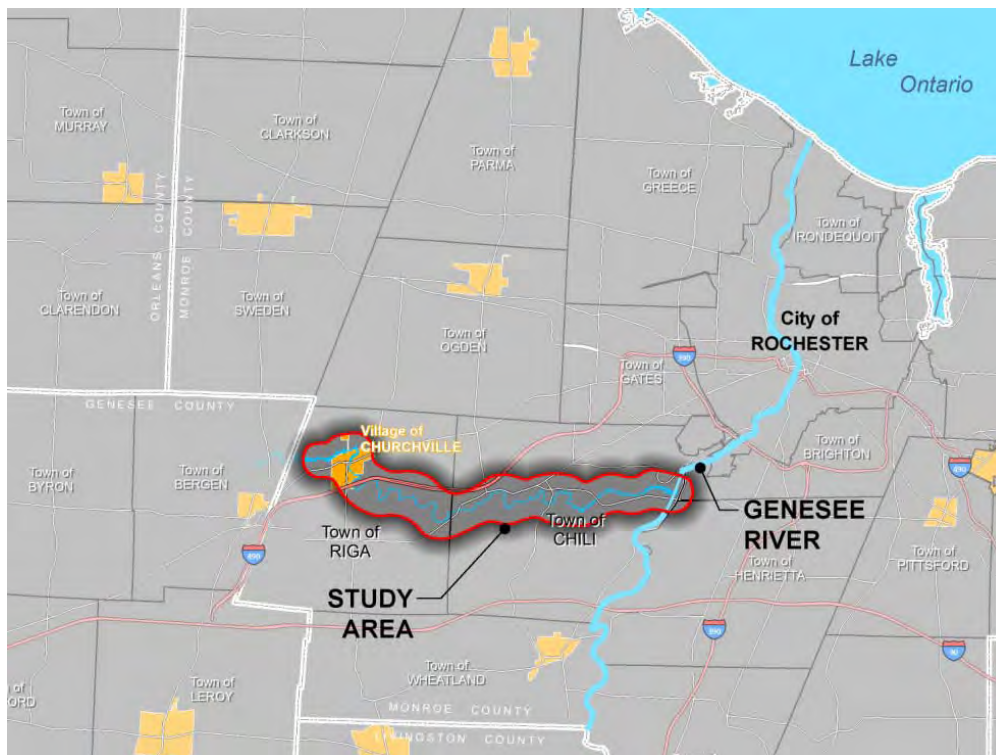


Figure 2 | Project Location Map

Local and Regional Significance

There are numerous active and passive recreation resources within the 15 mile Black Creek Trail Study Area, which would result in a highly connective active living resource for all three municipalities. The proposed trail will service over 35,000 local residents, numerous businesses and potentially function as a regional draw, enhancing economic activity. The trail will provide a non-motorized transportation facility from the Village of Churchville, through the Towns of Riga and Chili, to the Genesee Valley Greenway, connecting neighborhoods, parks, schools, retail and service establishments and employment centers, and provide a connection to other trails in the larger regional trail network.

The Black Creek Trail Study Area is unique within the region, traversing a range of rural, agricultural, suburban and urban landscapes. This Study Area truly affords some of the most attractive viewsheds within the region.

Additionally, significant historic and culturally important resources are both present and interpreted in the Study Area including the two-span masonry arched aqueduct that carries the Genesee Valley Greenway (formerly Genesee Valley Canal) over Black Creek; the Stuart Road historic truss bridge; the former mill and breached dam located between Stuart Road and Chili Avenue, and the dam located in the Village of Churchville.



Genesee Valley Greenway Masonry Arched Aqueduct

The Planning Process

In 2011, the Town of Chili established a Steering Committee to oversee the development of a Feasibility Study for the Black Creek Trail. Members of the Committee included representatives from the Towns of Chili and Riga and Village of Churchville.

Bergmann Associates, along with the Steinmetz Planning Group and Razak Associates, were hired as the consultant team to assist with trail feasibility, master planning and public outreach. The planning process consisted of the following steps:

- Examine and verify the goals and objectives for the trail;
- inventory and analyze existing conditions in the Study Area;
- tour the Study Area to observe and document existing conditions;
- identify trail location alternatives and key opportunities/constraints;
- gather initial public feedback;
- refine alternatives and identify a preliminary recommended trail alignment;
- develop an implementation plan;
- develop design guidelines, planning-level cost estimates and potential funding sources;
- gather additional feedback on the Draft Feasibility Study at a Public Meeting; and
- finalize the Feasibility Study.

In January 2012, the Steering Committee participated in a visioning exercise to assist the design team in better understanding the opportunities and constraints. The following feedback was provided and was used to guide the development of possible trail alignment alternatives:

OPPORTUNITIES

- The trail should link existing trails, municipalities, and bring people to the Churchville Village center.
- The trail should connect Chili Nature Center and Union Station Park.
- Recreational activities along the trail should include fishing, hiking, snow shoeing, cross-country skiing and cross –country cycling.
- The trail should promote educational opportunities, wildlife conservation, regional and local destinations, public health and wellness, and key local natural resources.
- The trail could be a potential alternative transportation route for nearby higher education campuses.

CONSTRAINTS

- Local roads in Riga may need to be widened for on-road trail alignment opportunities.
- Churchville Riga Road Bridge over Interstate 490 currently does not accommodate pedestrians and does not feel comfortable.
- Culvert feasibility for crossing under I-490 is unknown.
- Railroad bridge crossings may not be feasible.
- Eastern segment of Black Creek is very wet and difficult to navigate at certain times of the year.
- Creek floodplains are extensive, making a trail alignment along Black Creek difficult.
- Construction and maintenance of a trail in a floodplain may be costly.
- Potential trail access points and trailhead locations are limited.
- Trail alignment in Riga along Black Creek may be difficult.
- Environmental impacts need to be taken into consideration when constructing a trail along Black Creek.
- Utility locations and potential impacts.

Based upon guidance from the Steering Committee and input from the general public, several trail alignments were identified.

Study Area Overview

The following section provides a description of the trail segments, current land use and ownership, natural features, the transportation network, and demographics in the project Study Area.

Segment Descriptions

The Study Area includes the lands located within 1,000 feet from the centerline of Black Creek and is approximately 15 miles in length. The Study Area extends through the Towns of Chili, Riga and the Village of Churchville, covering approximately 15 miles.

For ease of organization and for evaluating the feasibility of this project, the potential trail Study Area was divided into three segments. The segments were determined based on the differing land use patterns, natural features, and potential trail alignment alternatives within each segment. (Figure 3):

- Segment A – Village of Churchville to Black Creek Park at Stuart Road.
- Segment B – From Black Creek Park at Stuart Road to Chili-Scottsville Road.
- Segment C – From Chili-Scottsville Road to the Genesee Valley Greenway Trail.

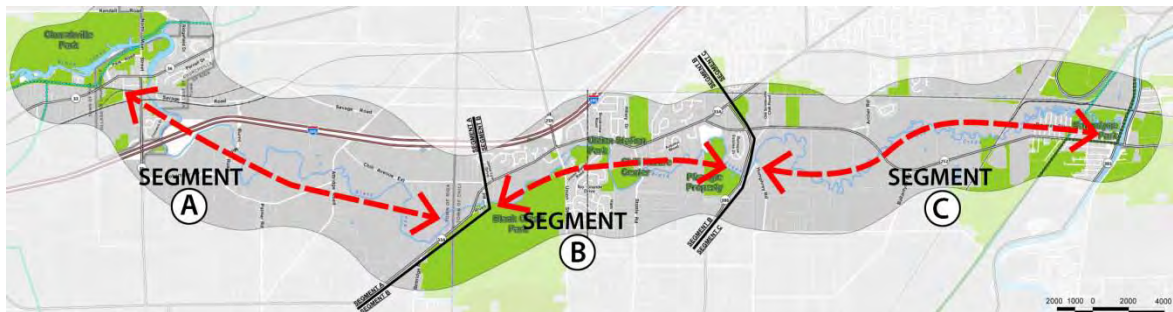


Figure 3 | Study Area Segment Map

Segment A- Village of Churchville to Black Creek Park at Stuart Road

This segment begins in the Village of Churchville, travels through the Town of Riga, and extends southeast to Black Creek Park at Stuart Road. Land uses within this segment consist of residential, commercial, industrial, vacant land, parks and conservation, agricultural and public service.

Residential, commercial, and industrial land uses are concentrated in the Village of Churchville along NYS Route 33 and NYS Route 36, with agricultural and residential land uses located in-between the active CSX railroad tracks and I-490. Parks and conservation land uses are concentrated in the northwest section of this segment and vacant lands are concentrated in the Village of Churchville adjacent to the existing railroad tracks.

Black Creek Trail Feasibility Study
Towns of Chili, Riga and Village of Churchville, New York



View East (downstream) at Stuart Rd



View North (upstream) at I-490 Overpass



View of Existing Trail in Black Creek Park



View South (downstream) at Churchville Village Hall

Segment B: Black Creek Park at Stuart Road to Chili-Scottsville Road

This segment begins at Black Creek Park at Stuart Road and extends east towards the Pfrengle Property at Humphrey Road. Land uses within this segment consist of residential, parks and conservation, commercial, public service and vacant land. Residential uses are the dominant land use type in this segment, with parks and conservation land uses located adjacent to Black Creek and commercial land uses concentrated at the intersection of Union Street and NYS Route 33A, and at Stottle Road and NYS Route 33A.



View West (upstream) from Stuart Road Bridge



View at Stottle Road

Segment C: Chili-Scottsville Road to the Genesee Valley Greenway Trail

This segment begins at the Pfrengle Property at Humphrey Road and extends east to Ballantyne Park at the Genesee River. Land uses within this segment consist of residential, agricultural, vacant lands, public service, commercial, industrial, recreation and entertainment, and parks and conservation. Residential land uses are concentrated in the area of NYS Route 386 and Humphrey Road and in the area of NYS Route 252 and NYS Route 383. Agricultural and vacant land uses are located along NYS Route 252 with agricultural activity concentrated south of NYS Route 252 and vacant lands north of NYS Route 252.



**Brook Road at Humphreys Road
Intersection**



Brook Road at Railroad Crossing

Land Use, Land Cover, and Ownership

Land use and land cover are two methods for describing how land is being used and managed in a given area. According to the New York State Office of Real Property tax classification system, land use refers to how the land is used, often has a political dimension, and is primarily defined at the parcel level (i.e., only one use is assigned to each parcel). Land use categories consist of general descriptions such as residential and commercial, as well as more detailed information including the type of residential or commercial use (e.g., single-family residential or highway commercial). By comparison, land cover provided by the National Land Cover Data set describes both the vegetative and man-made features that characterize a particular area (e.g., forest, agriculture, high-intensity development) and reflects the climate, topography, soils, geology, and other environmental features that have made various types of land use possible, and shaped settlement patterns and current economic activities. This section includes a description of both the land use and land cover within the ½-mile wide Study Area surrounding Black Creek.¹

Land Use

Land use within the ½-mile wide Study Area is predominately a mix of agriculture, residential, and vacant lands, with park and conservation lands also encompassing a fairly large amount of land in the (See Table 1 or Maps 1a and 1b in Appendix A). The highest density of commercial and residential land uses are located in and around the Village of Churchville, at the Study Area's western terminus.

¹ Due to the data source utilized for Land Use and Land Cover, the total Study Area acreage varies and is not a precise representation of the Study Area.

The Study Area segment between the Village of Churchville and Black Creek Park is mostly comprised of agricultural and low-density residential land uses, with some vacant properties scattered throughout.

Table 1 – Land Use in the Black Creek Trail Study Area

Land Use	Parcel Classification Codes	Black Creek Trail Study Area		
		Number of Parcels	Acres	Percent of Total Area
Agriculture	100s	50	2,220	22%
Residential	200s	2,832	2,756	28%
Vacant	300s	519	2,060	20%
Commercial	400s	78	331	3%
Recreation & Entertainment	500s	4	172	2%
Community Services	600s	50	460	5%
Industrial	700s	8	148	2%
Public Services	800s	32	352	4%
Parks & Conservation	900s	26	1,398	14%
No Data	--	2	0.5	0.0%
TOTAL		3,601	9,897	100.0%

Source: Monroe County Tax Parcel Data (2010)

Between Black Creek Park and NYS Route 386, the Study Area is characterized primarily by moderate density residential land uses; however, most of the Creek's shoreline in this segment is located along park and conservation lands including Union Station Park, Chili Nature Center, and the Pfrengle Property. From NYS Route 386, the Study Area traverses a series of agricultural lands until reaching the Genesee and Wyoming railroad crossing, at which point the Study Area is once again primarily residential with a mix of parks and conservation lands and lands used for other community and public services.

Nine public parks and/or other conservation lands are wholly or partially located within the Study Area. These include:

1. Ballantyne Park;
2. Black Creek Park;
3. Chili Nature Center;
4. Churchville Park;
5. The Pfrengle Property;
6. Union Station Park;
7. Widener Park;
8. Brookdale Preserve; and
9. Genesee Valley Greenway Trail

These lands cover more than 1,179 acres, or 12 percent of the Black Creek Trail Study Area.

Land Cover

In terms of land cover, the vast majority of the Black Creek Trail Study Area is classified as agriculture, with natural land cover types (i.e., forest, grassland/herbaceous, and wetland) comprising the next

largest group of lands (See Table 2 or Maps 2a and 2b in Appendix A). Although these natural land cover types are located throughout the Study Area, the highest density of these lands occurs downstream of Stottle Road, where the terrain becomes lower and flatter. A large amount of forest lands and wetlands are also located in the vicinity of Black Creek Park, south of Black Creek.

Table 2 – Land Cover in the Black Creek Trail Study Area

2005 CCAP Land Cover Type	Black Creek Trail Study Area		
	Number of Parcels	Acres	Percent Cover
Developed, High Intensity	957	213	2%
Developed, Low Intensity	6,951	1,546	14%
Agriculture	21,823	4,853	44%
Forest	9,267	2,061	19%
Grassland/Herbaceous	527	117	1%
Wetland	9,165	2,038	19%
Open Water	377	84	1%
TOTAL	49,067	10,912	100%

Source: National Land Cover Data (2006)

Property Ownership

Of the almost 10,000 acres of land located within the Black Creek Trail Study Area, approximately 2,219 acres (22 percent) are under public ownership, including lands owned by the Genesee Land Trust (See Maps 3a and 3b in Appendix A). The 2,219 acres of land under public ownership are held by 12 different entities, including:

- County of Monroe Industrial Development Agency;
- Churchville Cemetery;
- Churchville-Chili Central School District;
- County of Monroe;
- Gates-Chili Central School District;
- Gates-Chili Ogden Pure Waters Sewer District;
- Genesee Land Trust;
- New York State;
- Rochester Institute of Technology;
- Town of Chili;
- Town of Riga; and
- Village of Churchville.

The remaining approximately 7,678 acres (78 percent) of land is held under private ownership and is divided among 3,076 land owners. As noted, there are six parks that encompass almost 1,200 acres (12 percent) of the Study Area. With the exception of Ballantyne Park (1.3 acres), the remaining five parks are all immediately adjacent to Black Creek.

Natural Features

The natural features within the Study Area will determine the opportunities and constraints associated with the potential trail alignments being studied. This section includes a description of the wetlands and topography within the ½-mile wide Study Area surrounding Black Creek.

Wetlands

To determine the extent of regulated wetlands, both New York State Department of Environmental Conservation (NYSDEC) and National Wetlands Inventory (NWI) wetlands were mapped within the Study Area (See Maps 4a and 4b in Appendix A).

NYSDEC Wetlands

The NYSDEC identifies and regulates all freshwater wetlands greater than 12.4 acres in size. An adjacent area of 100 feet around these wetlands is also protected. As part of the mapping process, each wetland is assigned to one of four ranked regulatory classes, depending upon the degree of benefits supplied.²

Class I – Provide the greatest level of benefits and are afforded the highest level of protection.

Class II – Provide important level of function and benefits and are afforded a high level of protection.

Class III – Provide important functions and benefits and are afforded a lower level of protection.

Class IV– Provide important functions and benefits, but typically require less protection.

As is provided in Maps 4a and 4b (and Table 3), just over 15 percent (1,720 acres) of the Black Creek Trail Study Area is classified as wetlands. Of the more than 1,700 acres of NYSDEC wetlands in the Study Area, the vast majority are Class I wetlands. Most of the NYSDEC wetlands are located in segment C, near the east end of Black Creek (downstream of NYS Route 386), where the terrain becomes lower and flatter. The areas in and around Black Creek Park and Churchville Park are also characterized by large NYSDEC wetland complexes.

Table 3 – NYSDEC Wetlands in the Black Creek Trail Study Area

NYSDEC Wetland Type	Acres	Percent of Study Area
Class 1	1,119	10%
Class 2	586	5%
Class 3	15	<1%
Class 4	0	0%
TOTAL ACRES NYSDEC Wetlands	1,720	15%
STUDY AREA ACRES	10,920	

Source: NYS Department of Environmental Conservation (2008)

² *Part 664: Freshwater Wetlands Maps and Classification*. NYS Department of Environmental Conservation website. Accessed on April 8, 2009. <http://www.dec.ny.gov/regs/4612.html#13478>

² Ibid

NWI Wetlands

The U.S. Fish and Wildlife Service also maps wetland areas through the National Wetlands Inventory (NWI). The NWI identifies all wetlands, regardless of size and regulatory status, based on a combination of the interpretation of aerial photography, soils maps, and on-the-ground surveys. Additionally, NWI wetlands are classified according to cover type and hydrologic condition (e.g., semi-permanently flooded, palustrine forested wetland). Given the difference in identification methodologies, considerable overlap can occur between those wetlands identified by the NYSDEC and those identified by the NWI, with the NWI typically classifying more lands as wetlands than does the NYSDEC.

As is provided in Maps 4a and 4b (and Table 3), just over 18 percent (1,973 acres) of the Black Creek Trail Study Area is classified as NWI wetlands, with scrub-shrub wetlands being the dominant type. This represents an increase of almost 200 acres of wetlands from the NYSDEC designated wetlands.

Like the NYSDEC designated wetlands, most of the NWI wetlands are located near the confluence of Black Creek and the Genesee River (downstream of NYS Route 386), as well as the areas in and around Black Creek Park and Churchville Park. The major differences between the wetlands identified by the NYSDEC and NWI classifications occur mostly along the western extent of the Study Area, where the NWI identifies a series of large wetland areas immediately adjacent to the Creek.

Table 4 – NWI Wetlands in the Black Creek Trail Study Area

NWI Wetland Type	Acres	Percent of Study Area
Forested	61	<1%
Scrub-Shrub	1,485	14%
Unconsolidated Bottom	427	4%
TOTAL ACRES, NWI Wetlands	1,973	18%
STUDY AREA ACRES	10,920	

Source: National Wetland Inventory (2010)

Topography & Steep Slopes

As Black Creek meanders from the Towns of Riga and Chili to the Genesee River, the elevation of the Study Area drops by approximately 103 feet (615 feet Mean Seal Level (MSL) to 512 feet MSL), with much of that drop occurring before Stottle Road. Once the creek reaches Stottle Road, the land flattens out considerably.

The areas of steep slopes are generally limited to upland areas away from Black Creek and associated with the many drumlins left behind by the last glacial advance. Drumlins are streamlined and elongated hills comprised of glacial drift characterized by a tapered end facing the direction in which the glaciers advanced. Even with the presence of drumlins, the vast majority of slopes along the Study Area are less than 15 percent, with only a few isolated areas exceeding this amount (See Maps 4a and 4b in Appendix A).

Floodplains

Floods, and floodplains, are generally defined according to their statistical frequency, or risk, of occurrence. A 1 percent annual chance floodplain (formerly 100-year floodplain), for example, is an area subject to a one percent or greater chance of flooding during any given year. Depending on the degree of risk desired for a given analysis, any other statistical frequency of a flood event may be selected (FEMA flood maps delineate the 1.0 percent/100-year and 0.2 percent/500-year floodplains).³ For the purposes of this study, 1.0 percent chance and 0.2 percent chance floodplains were identified.

As is provided in Maps 4a and 4b in Appendix A (and Table 5), floodplains cover 43 percent (4,704 acres) of the Black Creek Trail Study Area. The majority of floodplains are located along Black Creek's downstream reaches near its confluence with the Genesee River.

Table 5 – FEMA Floodplains in the Black Creek Trail Study Area

Floodplain Type	Acres	Percent of Study Area
1.0% Annual Chance/100-Year Floodplain	4,144	38%
0.2% Annual Chance / 500-Year Floodplain	560	5%
TOTAL ACRES, FEMA Floodplains	4,704	43%
STUDY AREA ACRES	10,920	

Source: Federal Emergency Management Agency (2008)

Depending upon the source(s) of funding for the trail project, it may be necessary to consider and evaluate any significant floodplain encroachments in accordance with the federal provisions of Executive Order 11988, Floodplain Management, 23 CFR 650 Subpart A, *Location and Hydraulic Design of Encroachments on Floodplains*, and/or the State provisions of 6 NYCRR 502, *Floodplain Management Criteria for State Projects*. All of these regulations are based on the need for local communities to comply with the National Flood Insurance Program (NFIP) requirements. This program requires local communities, choosing to enroll in the NFIP, to assure that any development within floodplains (those areas within the 1% annual chance floodplain areas, and typically designated as an AE or a numbered A zone on a Flood Insurance Rate Map [FIRM]) to issue a floodplain development permit for any development that is proposed within the floodplain. The Towns of Chili, Riga and Village of Churchville are enrolled in the NFIP.

As the details of the trail system are developed, it will be important for designers to assure that any trail features located within the 1% annual chance floodplain comply with all NFIP requirements. This includes evaluating the effects of any lateral encroachments of fill, and/or new and modified bridges over Black Creek. The entire length of Black Creek within the Study Area was studied using detailed methods, and has a mapped floodplain with base flood (1% annual chance) elevations. NFIP also requires compliance with 44 CFR Part 60, which addresses:

³ Ibid

- Adequate anchorage of constructed features to prevent floatation, collapse or lateral movement resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy;
- Construction with materials resistant to flood damage;
- Construction by methods and practices that minimize flood damage;
- Construction of electrical facilities that are designed and or located so as to prevent water from entering or accumulating within the components during flooding conditions;
- Prohibiting construction of any encroachments including fill, new construction, substantial improvement and other development within the floodway; and
- Prohibiting water level increases of greater than 1.0 feet within the 1% annual chance (100 year) floodplain from any obstructions placed in the floodplain.

The trail project will provide people access to floodplain areas and thus potential increased risk to people occupying the trail. However, because alternative transportation routes will continue to be available during flood events, people are unlikely to utilize the project during flood events.

Erosion Potential

The prevention and minimization of soil erosion is one of the primary design issues for trails located adjacent to waterbodies. In addition to impacting water quality and the aesthetic value of the trail, soil erosion can pose user safety issues and require a high level of maintenance investment. To identify any potential soil erosion hazards in the Black Creek Trail Study Area, soil data provided by the Natural Resources Conservation Service (NRCS) was examined.

Based on the results of the analysis, four erosion classes were identified within the Study Area:

- **Slight** – erosion is unlikely under ordinary climatic conditions.
- **Moderate** – some erosion is likely and erosion control measures may be needed.
- **Severe** – erosion is very likely and erosion control measures, including re-vegetation of bare areas, are advised.
- **Very Severe** – significant erosion is expected, loss of soil productivity and off-site damage are likely, and erosion-control measures are costly and generally impractical.

As is depicted in Maps 5a and 5b in Appendix A (and Table 6), the vast majority of the Study Area is classified as having a slight or moderate risk for erosion. There are, however, two areas located within the Study Area that pose a very severe risk for erosion – south of Black Creek near Betteridge Road and NYS Route 33A, and south of Robertson Road between NYS Route 36 and Palmer Road. These areas should be avoided, if possible, as the design phase of this project moves forward.

Table 6 – Erosion Potential in the Black Creek Trail Study Area

Erosion Potential Class	Acres	Percent of Study Area
Slight	6,101	56%
Moderate	3,905	36%
Severe	59	1%
Very Severe	238	2%
Not rated	348	3%
No Data	269	2%
TOTAL ACRES	10,920	100%

Source: U.S. Department of Agriculture

Transportation Network

Beginning at its western terminus, the Black Creek Trail Study Area is traversed by several major NYS Routes and Interstate 490, the CSX Chicago Line Railroad, the Genesee and Wyoming Railroad, as well as several smaller County and local roads (See Maps 6a and 6b in Appendix A). This transportation infrastructure network will need to be considered when determining the location and design of the trail.

To gain a more detailed understanding of the local transportation network, the *NYSDOT Traffic Viewer* was used to identify the Average Annual Daily Traffic (AADT) on State Routes in the Study Area (See Maps 6a and 6b in Appendix A). The AADT increases as one travels from west to east along Black Creek, with the largest traffic volumes occurring at the intersection of NYS Route 259 and NYS Route 33A and the intersection of NYS Route 252 and NYS Route 383.

In addition to the roadway network, designated trails traverse the Study Area. The eastern end of the Study Area is traversed by the Genesee Valley Greenway (formerly the Genesee Valley Canal and later the Pennsylvania Railroad) as it makes its way from north to south parallel to NYS Route 383. In the Town of Riga and Village of Churchville, the Study Area contains a portion of a snowmobile trail sponsored by the Hilton Sno-Flyers (See Map 6a in Appendix A). At the western terminus of the Study Area, in the Village of Churchville, the newly constructed West Shore Trail connects the Study Area to Churchville Park.

Finally, the Rochester-Genesee Regional Transportation Authority (RGRTA) Regional Transit Service (RTS) also provides bus service to portions of the Black Creek Trail Study Area. The areas in and around the Chili Town Hall are serviced by RGRTA Route 8 (Chili / East Main) and the Village of Churchville is serviced by RGRTA Route 95 (North Chili/Churchville/Bergen/Batavia).

Gap studies were completed at four locations to determine the feasibility of providing safe pedestrian crossings at selected locations along the trail corridor. The crossing locations studied were Chili Riga Center Road, Chili Scottsville Road, Stottle Road, and Union Street. Acceptable number of gaps and adequate sight distances were documented at all four gap study locations. The complete gap studies can be found in Appendix C.

Structures (Bridges)

Fifteen bridges and two abutments exist within the Black Creek Trail Study Area. A majority of the bridges are owned by Monroe County and the NYSDOT with the remaining owned by CSX, Genesee and Wyoming Railroad, or privately owned. A majority of the vehicular bridges contain two vehicular traffic lanes, including the I-490 Eastbound and Westbound bridges. One pedestrian bridge exists in the Study Area as well as remnants of two bridges no longer in service. Pedestrian accommodations on the bridges and vertical clearance under the bridges varies throughout the Study Area (See Table 7).



I-490 Eastbound Bridge



Stottle Road Bridge

Table 7 – Existing Bridges in the Black Creek Trail Study Area

Bridge	Year Constructed	Ownership	Vehicular, Pedestrian or Rail Traffic	Number of Travel Lanes	Pedestrian Accomm.	Vertical Clearance
G&W Railroad Bridge	1906	G&W RR	Rail	2	No	14.3'
Archer Road	-	NYSDOT	Vehicular	2	Shoulder	9'
Old Humphrey Road (abutments only)	-	Unknown	-	2	-	Deck is Removed
Chili-Scottsville Road	1930	NYSDOT	Vehicular	2	No	11.1'
Stottle Road	2009	Monroe County	Vehicular	2	6' Wide shoulder	-
New Pedestrian Bridge	Future	-	Pedestrian	-	-	10.0'
Union Street	2011	Monroe County	Vehicular	2	4' wide Shoulder	10.2'
Stuart Road	2002	Monroe County	Pedestrian	-	Pedestrian Bridge	-
Chili-Riga Center Road	1928	Monroe County	Vehicular	2	No	-
Farm Truss Bridge (Private)	-	Private	Vehicular	1	No	-
Attridge Road	2008	Monroe County	Vehicular	2	6' Wide shoulder	8.6'
Burnt Mill Road	2012	Monroe County	Vehicular	2	shoulder	-
I-490 Eastbound	1960	NYSDOT	Vehicular	3	No	12.2'
I-490 Westbound	1960	NYSDOT	Vehicular	3	No	12.2'
CSX	-	CSX	Rail	-	No	Arch
West Shore Branch (abutments and pier only)	1907	-	-	-	-	Deck is Removed
East Buffalo Street	1995	NYSDOT	Vehicular	2	Sidewalks on both sides	>11'
North Main Street	1999	Monroe County	Vehicular	2	Sidewalks on both sides	>11'

Where existing bridges cross Black Creek, and a trail option was being considered for carrying the trail under the bridge, a hydraulic screening was performed to determine whether sufficient clearance between the normal water level and the low chord of the bridge was available. The minimum vertical clearance design standard above the trail of eight feet was used for the screening (see Table 7). Based on the trail alignment alternatives and the screening, the only existing bridges over Black Creek identified for preliminary hydraulic assessments, where a more detailed hydraulic evaluation was performed, were under the I-490 Eastbound and Westbound bridges.

Since a new pedestrian bridge crossing over Black Creek between Union Station Park and Chili Nature Center was identified as a necessary feature for all the alternatives in Segment B, a preliminary hydraulic assessment was also performed for this crossing. The preliminary hydraulic assessments for both locations are discussed in detail under the Trail Alignment Alternatives discussion.

Demographics

To gain a more detailed understanding of the types of potential trail users, as well as their characteristics, 2010 U.S. Census data indicates that approximately 6,900 people reside within the Study Area.⁴ This data was used to identify the total number of residents living in and around the Study Area, as well as the number of individuals in each of the following age groups:

- Under 18 years of age;
- 19 to 39 years of age;
- 39 to 64 years of age; and
- Over 64 years of age.

Based on the results of this analysis, almost 50 percent of residents in and around the Study Area are between the ages of 19 and 34 years (Figure 4). The next largest age group, 40 to 64 years, comprises just over 25 percent of the area's population. The smallest age group includes those individuals over the age of 65 (8.9 percent).

This demographic information was utilized when evaluating the location of various trailheads and trail amenities. Each demographic bracket has different recreational needs and physical abilities. While the younger demographic bracket has a greater need for active and physically challenging recreational opportunities, the older demographic brackets recreational needs are more passive. A general understanding of the surrounding population will aide in the development of recreational opportunities that the vast majority can benefit from.

⁴ The precise number of people living within the Study Area could not be determined, as the census data boundaries do not match the Study Area boundary.

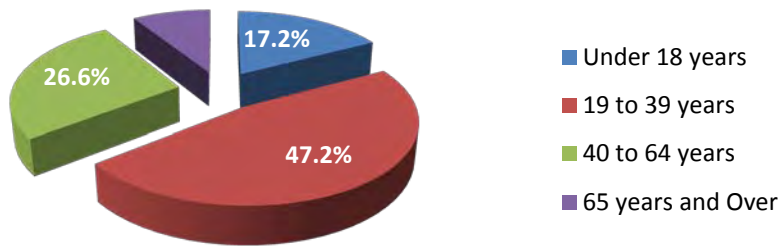


Figure 4 | Population by Age Group in and around the Black Creek Trail Study Area

Healthy Living

Across the U.S., communities are recognizing the link between our built environments and public health, particularly as it relates to physical activity. Among the benefits of a physically active population are reduced rates of obesity, coronary heart disease, hypertension, stroke, some cancers, and diabetes. One common predictor of the level of physical activity in a community is access to parks, trails and other Healthy Living infrastructure (e.g., sidewalks, playgrounds).

To gain a better understanding of the possible Healthy Living benefits of the proposed Black Creek Trail, a more detailed examination of the residential housing densities and demographic characteristics within the Study Area was conducted. In recent years, numerous studies have identified that most people are willing to walk approximately five to ten minutes, or $\frac{1}{4}$ to $\frac{1}{2}$ miles, to reach a particular destination.

The residential housing densities within the $\frac{1}{2}$ mile wide Study Area provides valuable information regarding the number of potential users, as well as where they are most likely to connect to the proposed trail. As illustrated in maps 7a and 7b (Appendix A), the highest residential densities occur near the midpoint of the proposed trail, along the intersection of NYS Routes 33A and 259. A second concentration of residences is located across the Genesee River, near the trail's eastern terminus.

A detailed breakdown of the population by age group is illustrated in maps 7a and 7b in Appendix A. Interestingly, the area with the highest residential housing density (along the intersection of NYS Routes 33A and 259) has a larger number of residents under the age of 18 and a larger number of residents over 65 years of age than does the Study Area as a whole. Both of these age groups represent individuals that are very likely to use the proposed Black Creek Trail in very different ways.

The Healthy Living analysis will be utilized during the planning process to evaluate the feasibility and appropriateness of both trailheads and trail amenities within the Study Area.

Trail Alignment Alternatives

Potential trail alignments were developed based upon field visits, the existing conditions analysis, Steering Committee discussions and public input. The transportation facility envisioned within this plan will function as a recreation facility as well as a transportation facility. The following provides a summary of possible alternatives shown in Figure 5. Regardless of the alternative chosen, it is assumed the trail will begin at Churchville Park in the Village of Churchville and end at the Genesee Valley Greenway Trail in Chili. Each of these alternatives were inventoried and examined (Table 8) and an initial preferred alternative was identified, as described in the *Preferred Trail Alternative and Implementation* section.

Table 8 - Trail Alignment Evaluation Matrix

TRAIL ALIGNMENT EVALUATION MATRIX									
CATEGORIES	SEGMENT ALTERNATIVE								D West Shore Line
	A West Shore Trail at Howard Avenue - Black Creek Park/Stuart Road			B Black Creek Park/Stuart Road - The Phrengle		C The Phrengle Property/Humphrey Road - Ballantyne		D	
	A-1	A-2	A-3	B-1	B-2	C-1	C-2		
Economic Benefit - Favorable for tourism, connects economic centers, etc 1. None 2. Few 3. Many	3	3	2	2	2	3	3	1	
Cost of Improvements 1. High 2. Medium 3. Low	3	1	3	3	3	3	1	2	
Timeframe for Implementation 1. Long Term (10+ years) 2. Intermediate (5-10 years) 3. Short Term (0-5 years)	2	1	2	3	2	3	1	1	
Environmental Constraints - Impacting creeks/streams, wetlands or floodplains 1. Many 2. Few 3. None	2	1	3	1	2	3	1	3	
Land Ownership - Is the trail on public or private property 1. Privately Owned 2. Private and Publicly Owned 3. Publicly Owned	3	2	3	3	1	3	1	1	
Number of Impacted Private Owners 1. Many Owners 2. Few Owners 3. No Owners	3	1	3	3	2	3	1	1	
Constructability and Maintenance 1. Difficult 2. Moderate 3. Easy	3	1	3	2	2	2	1	2	
Is flooding along the Black Creek a concern 1. High Concern 2. Some Concern 3. No Concern	3	1	3	2	2	3	1	3	
Connectivity - Does the trail connect municipal, residential, regional centers, existing trails, etc. 1. No Connections 2. Few Connections 3. Many Connections	3	3	3	3	2	3	3	2	
Opportunities - Does the trail promote educational opportunities, wildlife conservation, key destinations, public health and wellness, key natural resources, etc. 1. No Opportunities 2. Few Opportunities 3. Many Opportunities	3	3	3	3	3	1	3	3	
Is the trail segment scenic 1. Not Scenic 2. Moderately Scenic 3. Very Scenic	2	3	1	3	3	2	3	1	
Can the trail segment function as an ALTERNATE TRANSPORTATION ROUTE? 1. Not Likely 2. Potentially 3. Definitely Will	3	2	3	2	2	3	2	2	
Trail Uses 1. Peds Only 2. Peds & Bikes	2	2	2	2	2	2	2	2	
Perceived Safety 1. Not Safe 2. Moderately Safe 3. Very Safe	2	3	2	3	3	2	3	3	
Community Preference 1. Not Preferred 2. Moderatly Prefered 3. Very Preferred	3	1	3	2	2	3	1	2	
TOTAL SCORE	40	28	39	37	33	39	27	29	

For ease of organization and evaluating the feasibility of this project, the potential trail Study Area was divided into three segments. The segments were determined based on the existing land use patterns, natural features, and potential trail alignment alternatives within each segment. (See Map 9 in Appendix A):

- Segment A – Village of Churchville to Black Creek Park at Stuart Road;
- Segment B – From Black Creek Park at Stuart Road to the Chili-Scottsville Road; and
- Segment C – From Chili-Scottsville Road to the Genesee Valley Greenway Trail.

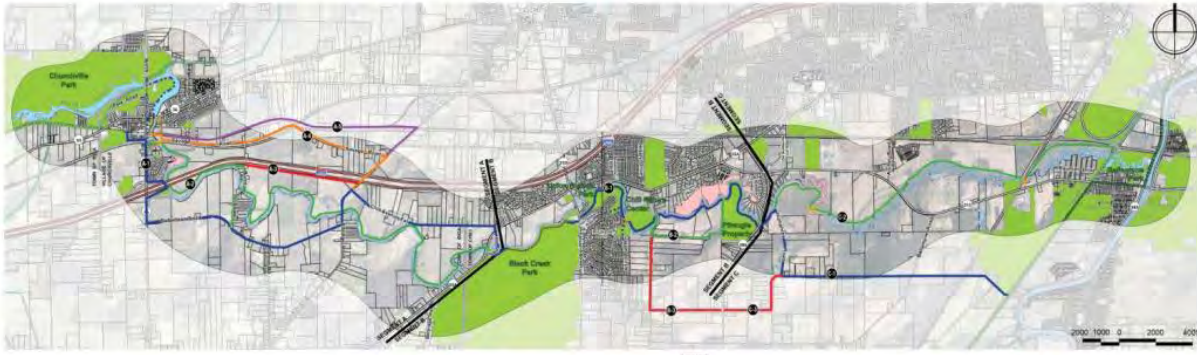


Figure 5 | Trail Alternative Map

Segment A – Churchville Village to Black Creek Park at Stuart Road

Segment A connects Churchville Park in the Village of Churchville to Black Creek Park in the Town of Chili. This segment is located in the Towns of Chili and Riga and the Village of Churchville (Figure 6).

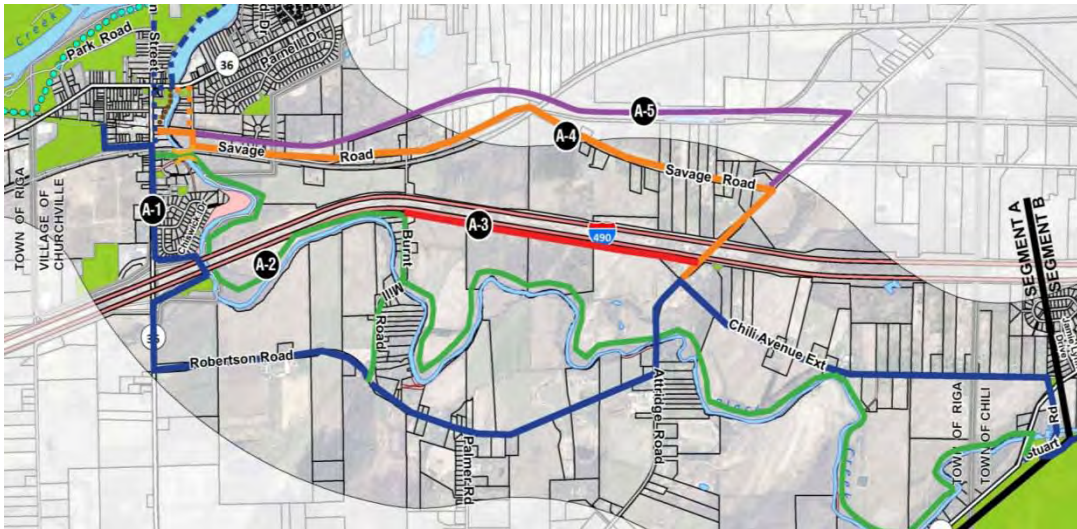


Figure 6 | Segment A, See Map 9 in Appendix A

Alternative A-1

This alternative would begin at the existing West Shore Trail at Howard Avenue and travel along Howard Avenue east off-road and connect to NYS Route 36. At NYS Route 36, the trail would continue south on existing sidewalks for pedestrians and an on road bikeway for bicyclists. The trail would cross the CSX railroad lines south of Howard Avenue at the existing railroad crossing signalized for pedestrians and vehicles, and continue south to Sanford Road North. At Sanford Road North, the trail would cross to the east side of NYS Route 36 and continue south, as an off-road trail to just north of the I-490 westbound exit ramp. At the I-490 westbound exit ramp, the trail would travel east along the I-490 right-of-way (ROW) to the west bank of Black Creek. The trail would follow the creek

under the I-490 bridges to the south side of the I-490 ROW, and continue west on publicly owned land adjacent to the I-490 ROW to NYS Route 36. At NYS Route 36 the off-road trail would travel south on the east side of NYS Route 36 to Robertson Road. The trail would follow Robertson Road as an on road bikeway from NYS Route 36 Attridge Road. The on-road bikeway would travel north on Attridge Road to Chili Avenue Extension, east on Chili Avenue Extension to Stuart Road, then continue south on Stuart Road to Black Creek Park.

A preliminary hydraulic assessment at the I-490 bridges over Black Creek was conducted to study the feasibility of a trail alignment and trail surface elevations that meet or optimize the following requirements:

- Provides the minimum allowable trail width of eight feet plus an additional two foot shoulder on each side;
- locates the trail on the west bank;
- provides the minimum allowable vertical clearance to the low chord of the superstructure of eight feet; and
- provides a top of trail elevation that would only be inundated 5% of the time, based on mean daily discharge records at USGS gage 04231000 in Churchville, NY.

The preliminary hydraulic analysis determined that a trail would be feasible in this location. However, the trail cross sectional area that occupies the floodway constitutes a development that must be evaluated during final trail design to assure that the trail does not violate National Flood Insurance Program (NFIP) the criteria that the Village of Churchville must enforce to remain in compliance with the NFIP is included in the preliminary hydraulic assessment located in Appendix D.

This alternative falls within publicly owned land and existing ROW requiring no easements; however, it could potentially involve the relocation of utility poles, drainage ditches and mailboxes. Portions of this alternative are located in or near floodplains and wetlands, which will require special trail construction.

Alternative A-2

This alternative would follow the same route as A-1 until the intersection of NYS Route 36 and Carroll Street. At Carroll Street, the on-road trail would travel east towards Black Creek. This off road trail would cross Black Creek with a new pedestrian bridge supported by the existing abutment and piers from the former North Shore Branch. After crossing the creek, the trail will follow the north bank of Black Creek until Burnt Mill Road. At Burnt Mill Road, the on-road trail would travel south to Black Creek as an on road trail south along Burnt Mill Road. The trail would then become an off road facility and follow the north bank of Black Creek to NYS Route 33A. At NYS Route 33A, the trail would travel south to Stuart Road as an on road trail to Black Creek Park.

The majority of this alternative is located on private property, impacting approximately eight landowners, requiring easements. This alternative would require the construction of a new pedestrian bridge over Black Creek as well as special construction for portions of the trail located in or in close proximity to floodplains and wetlands. Currently this alternative does not have support from the general public or the affected land owners.

Alternative A-3

This alternative would follow the same route as A-2 until Burnt Mill Road. The off-road trail would cross Burnt Mill Road at an at-grade crossing and continue east along the I-490 corridor until Attridge Road. At Attridge Road, the on-road trail would continue south as an on road trail and follow the same route as either A-1 or A-2 to Black Creek Park.

Much of this alternative is located on private property, impacting approximately three landowners, requiring easements. Currently this alternative does not have support from the general public or the affected landowners.

Alternative A-4

This alternative would follow the same route as A-1 until NYS Route 36. At NYS Route 36, the trail would continue either north or south on existing sidewalks for pedestrians and on road for bicyclists until the trail intersects with the abandoned railroad corridor near the Star of The West Milling facility. The trail would cross NYS Route 36 and travel east as an off-road trail, in the abandoned railroad corridor. The trail would then cross Black Creek with a new pedestrian bridge and continue to Baker Street. At Baker Street, the on-road trail would travel south then east continuing along Savage Road. The trail would cross the active railroad tracks on Savage Road and continue south to Attridge Road. At Attridge Road, the on-road trail would travel south to Chili Avenue Extension then follow Stuart Road to Black Creek Park.

A majority of this alternative falls within existing ROW except for the portion between NYS Route 36 and Baker Street requiring easements. This alternative would involve the construction of a new pedestrian bridge over Black Creek, improvements to the crossing over the active railroad tracks at Savage Road and could potentially involve the relocation of utility poles, drainage ditches and mailboxes.

Alternative A-5

This alternative would follow the same route as A-4 until Baker Street. The trail would cross Baker Street at an at-grade crossing and continue off-road east along the abandoned railroad corridor to Attridge Road. At Attridge Road, the on-road trail would travel southwest and follow the same route as either A-1 or A-2.

A majority of this alternative is located on private property, impacting more than 20 landowners, requiring easements. The abandoned railroad corridor is now owned by the landowners adjacent to it and in some locations, structures exist inside the alignment. This alternative would also involve the construction of a new pedestrian bridge over Black Creek and improvements to the crossing over the active railroad tracks. Portions of this alternative between Savage Road and Attridge Road are located in or near floodplains and wetlands, which would require special trail construction. A majority of A-5 falls outside the project boundary however, community input led to further investigation of this alternative.

Segment B –Black Creek Park at Stuart Road to Chili- Scottsville Road

Segment B connects Black Creek Park in the Town of Chili to Chili Scottsville Road (NYS Route 386). This segment is located in the Town of Chili (Figure 7).

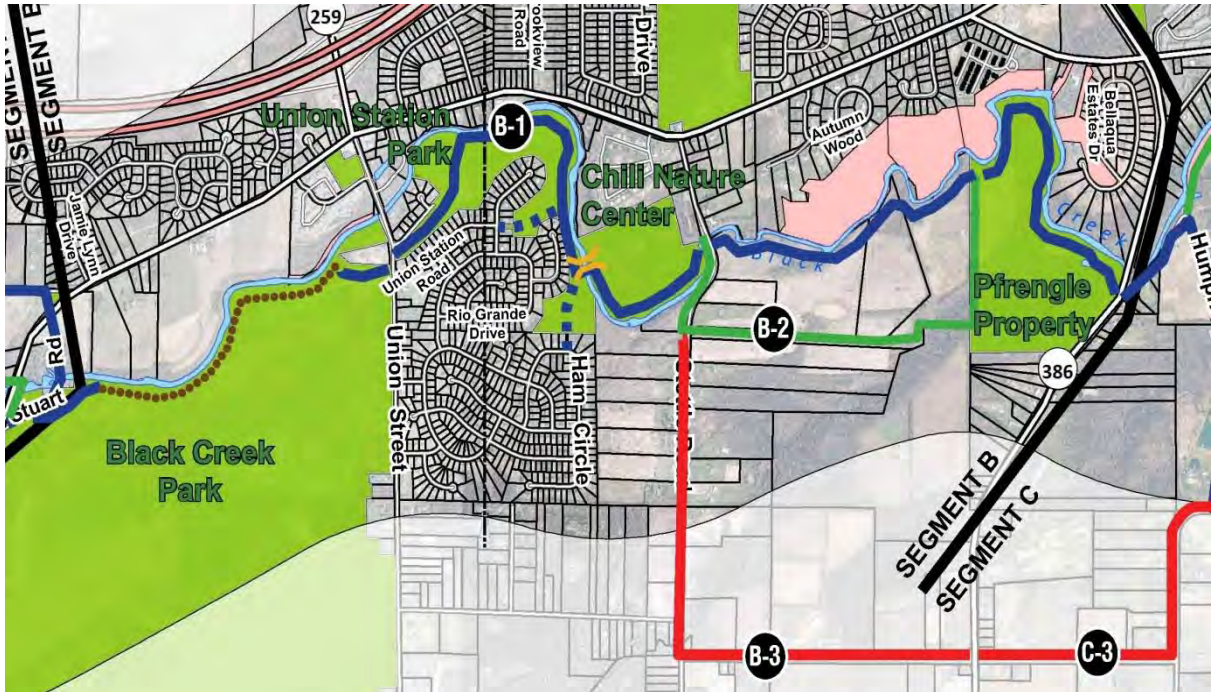
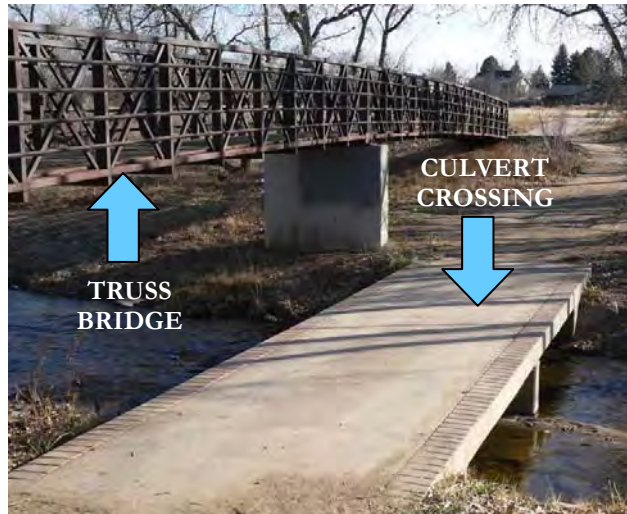


Figure 7 | Segment B, See Map 9 in Appendix A

Alternative B-1

This alternative would begin at the south side of Stuart Road at the entrance to Black Creek Park and connect with an existing trail in the park. The trail would follow the south bank of Black Creek to a point just upstream of Sunnyside Lodge. The trail would travel along the existing paved park path to connect to the park's internal paved vehicular road. The trail would travel south along the park drive just north of the existing stream crossing, at which point the trail would travel off-road and connect to Union Street south of Union Station Road. The trail would cross Union Street at an at-grade crossing and travel north along Union Street and continue east into Union Station Park on an off-road trail. The trail would continue on an existing asphalt trail along the south bank of Black Creek. The trail would continue beyond the existing trail until it reaches the area adjacent to the Chili Nature Center. At this location, the trail would cross Black Creek with a new pedestrian bridge and continue along the existing trail in the Nature Center. A new elevated boardwalk trail would carry the trail to the intersection at Stottle Road. The trail would cross Stottle Road at an at-grade crossing, be carried over the existing Stottle Road bridge, and continue to follow the south bank of Black Creek to NY Route 386.

Two options for the new bridge spanning Black Creek between Union Station Park and the Chili Nature Center were examined. The first of these was a high, 150 ft. single span truss bridge over the creek and the second, a culvert crossing that would overtop during flood events was also evaluated. An example of each crossing type is indicated to the right. The culvert-style crossing is preferred because it will require less earthwork (excavation and filling) in the floodplain excavation to comply with NFIP requirements. A detailed review of both crossing types is included in the preliminary hydraulic assessment in Appendix D.



Precedent of New Pedestrian Bridge

The preliminary hydraulic assessment at the new pedestrian bridge over Black Creek was conducted to study the feasibility of a trail alignment and trail surface elevations that meet or optimize the following requirements:

- Provides the minimum allowable trail width of eight feet plus an additional two foot shoulder on each side;
- locates the trail near the south bank upstream of the bridge and near the north bank downstream of the bridge; and
- provides a top of trail elevation that would only be inundated 5% of the time.

The trail cross sectional area that occupies the floodway and floodplain constitutes a development that must be evaluated during final trail design to assure that the trail does not violate NFIP criteria that the Town of Chili must enforce to remain in compliance with the NFIP. That evaluation is included in Appendix D.

Portions of this alternative are located on private property impacting approximately four landowners, requiring easements. This alternative would require the construction of a new pedestrian bridge over Black Creek as well as special construction for the portions of the trail located in or in close proximity to floodplains and wetlands. Currently this alternative does not have support from the affected landowners.

Alternative B-2

This alternative would follow the same route as B-1, with the exception of the segment along the creek between Stottle Road and the Pfrengle Property. At Stottle Road, the trail would travel south on-road approximately ¼ mile to a privately owned parcel. The off-road trail would travel east along the south edge of the parcel to connect to the Pfrengle property. The trail would continue north on the western boundary of the Pfrengle Property to the south bank of Black Creek follow the creek. The trail would

utilize the existing cut-stone bridge over Mill Creek to connect to NYS Route 386. The off-road trail would continue off road south on the Pfrengle property adjacent to NYS Route 386.

Portions of this alternative are located on private property, impacting approximately two landowners, requiring easements. This alternative would require special construction for the portions of the trail located in or in close proximity to floodplains and wetlands. Currently this alternative does not have support from the affected landowners.

Alternative B-3

This alternative would follow the same route as B-1 until Stottle Road. At Stottle Road, the on-road trail would continue south to Stryker Road and travel east on Stryker Road to NYS Route 386.

This alternative would fall within publicly owned land and existing ROW. The eastern segment of this alternative is located outside the project boundary; however, steering committee input led to further investigation of this alternative.

Segment C – Chili-Scottsville Road to the Genesee Valley Greenway Trail

Segment C connects Chili Scottsville Road (NYS Route 386) to the existing trailhead at the Genesee Valley Greenway Trail. This segment is located in the Town of Chili (Figure 8).

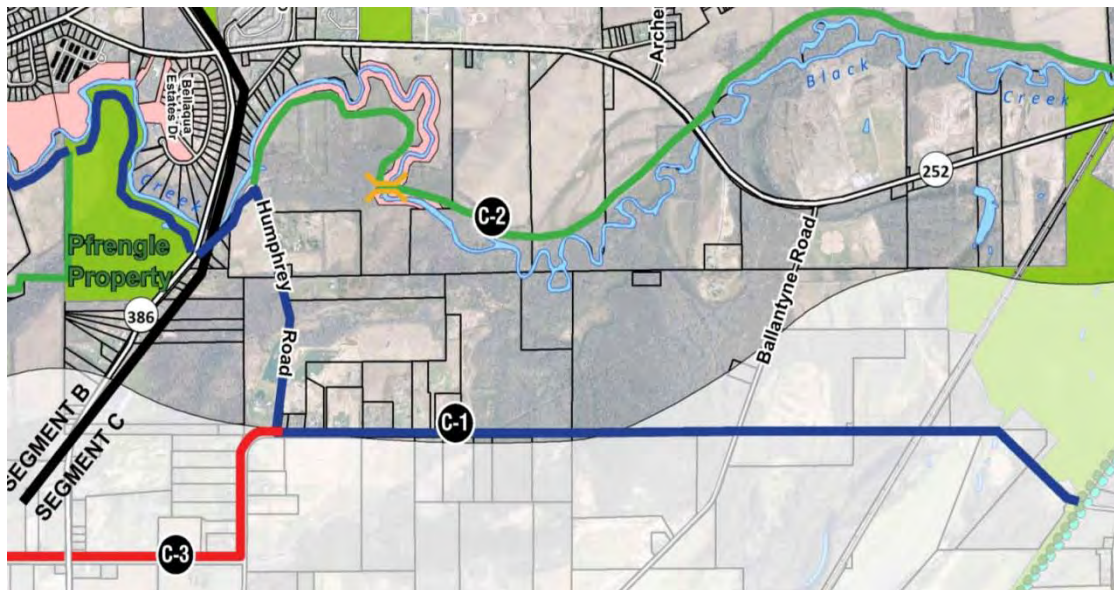


Figure 8 | Segment C, See Map 9 in Appendix A

Alternative C-1

This alternative would begin at NYS Route 386 and travel on-road along Humphrey Road to Brook Road. The trail would continue east on-road along Brook Road to the existing Genesee Valley Greenway Trail trailhead west of NYS Route 383. The trail would cross an active rail line located between Ballantyne Road and the existing Genesee Valley Greenway trailhead.

This alternative would fall within existing ROW requiring no easements; however, it could potentially involve the relocation of utility poles, drainage ditches and mailboxes. This alternative would also involve improvements for pedestrians to the active railroad crossing on Brook Road between Ballantyne Road and NYS Route 383. The eastern segment of this alternative is located outside of the project boundary; however, community input led to further investigation of this alternative.

Alternative C-2

This alternative would begin at NYS Route 386 and travel on-road along Humphrey Road. At the bend in Humphrey Road, the trail would continue off-road and follow the south bank of Black Creek for approximately ½ mile. The trail would then cross Black Creek with a new pedestrian bridge and follow the north bank of the creek to NYS Route 252. The trail would cross NYS Route 252 at an at-grade crossing and continue along the north bank of the creek to the active Genesee and Wyoming railroad tracks that fall between Ballantyne Road and NYS Route 383. The trail would cross the railroad tracks under the existing bridge and continue north adjacent to the active railroad tracks to NYS Route 383. The trail would connect to the existing Genesee Valley Greenway Trail where it intersects with the CSX railroad tracks, approximately one quarter mile west of NYS Route 383.

Portions of this alternative are located on private property, impacting approximately five landowners, requiring easements. This alternative would require special construction for the portions of the trail located in or in close proximity to floodplains and wetlands. Currently this alternative does not have support from the general public or the affected landowners.

Alternative C-3

This alternative would begin at NYS Route 386 and travel east, as an on-road trail on Stryker Road to Humphrey Road. At Humphrey Road, the on-road trail follows the remainder of Alternative C-1 to the intersection with the existing Genesee Valley Greenway Trail trailhead west of NYS Route 383.

This alternative would fall within existing ROW requiring no easements; however, it could potentially involve the relocation of utility poles, drainage ditches and mailboxes. This alternative would also involve improvements for pedestrians to the active railroad crossing on Brook Road between Ballantyne Road and NYS Route 383. A majority of this alternative is located outside of the project boundary, however, community input led to further investigation of this alternative.

General Design Considerations

Although the purpose of this study is to determine the feasibility of locating a trail within the Black Creek corridor, general design considerations were developed. For cost estimating purposes, the design considerations identified in this section apply to all segments of the trail. When funding becomes available to implement the trail segments, the design should be evaluated to confirm compliance with any required standards associated with the funding source.

Trail Dimensions and Surface

It is anticipated that some segments of the trail alignment will be utilized by both pedestrians and cyclists, while other segments of the trail will be utilized solely by cyclists. Because of this, the trail

design includes both on-road and off-road trail design recommendations. The trail dimensions and surfacing recommendations vary over the length of the corridor according to the existing roadway design and volume and anticipated user.

For shared-use trails, the American Association of State Highway and Transportation Officials (AASHTO) *Guide for Development of Bicycle Facilities* (2012) recommends 10 feet plus 2 foot clear buffers on each side (14 feet total) as the minimum desired width for a two-directional shared-use trail accommodating both bicyclists and pedestrians. The vertical clearance from overhanging trees or objects should be a minimum of 8 feet, although 10 feet is preferred. In constrained areas, a narrower trail (8 feet minimum plus 2 foot clear buffers on each side or 12 feet total) would be acceptable but these sections should be minimized. If additional users are allowed and/or higher usage is expected, a wider trail (12 feet minimum plus 2 foot clear buffers on each side 16 feet total) should be considered as well as the appropriate trail surface for the intended user.

According to the AASHTO *Guide for Development of Bicycle Facilities* (2012), there are no bicycle specific designs or dimensions for roadways and legally, cyclists can operate on all roadways unless prohibited by statute or regulation. Recommended improvements to safely accommodate cyclists along roadways are based on several factors, including:

- Road function,
- Traffic volume,
- Speed,
- Traffic Mix,
- Expected Users,
- Road condition and design,
- Topography,
- Driveways or access points,
- Adjacent land use, and
- Cost.

There are several bikeway types to be considered, each segment of the trail should be improved appropriately according to the above listed factors in addition to local standards of practice and

Asphalt vs. Stone Dust Surface for Off-Road Trail Segments

Choosing a surface type is an important step in the planning and design of a trail. The surface material used should be determined by considering the desired users of the facility, the context of the trail, and the municipality's available resources (budget, maintenance staff). Most multi-use trails use either an asphalt surface or an improved natural surface such as stone dust.

Below is an overview of using one material versus another. This Feasibility Study recommends the use of stone dust for the off-road trail segments, given the primarily natural setting. During the more detailed design phase of the project, the Towns of Chili, Riga and Village of Churchville should examine these factors carefully and determine which surface is appropriate for the off-road segments of the Black Creek Trail.

	Asphalt	Stone Dust
Installation Cost	\$5.20 - \$5.50 / SF	\$1.80 - \$2.00 / SF
Users	wide range of users, best for long-range biking (commuters), strollers, in-line skaters, wheelchairs	limited range of users, would exclude in-line skaters
Permeability	impermeable*	allows some infiltration
Durability	may require minimal maintenance every 7-10 or more years	may require resurfacing, edge cleanup every 2-5 years, susceptible to erosion from regular use, runoff from adjacent development
Other	designed for higher speeds, better for urban/suburban areas	easier on joints, better for rural/undeveloped areas

porous asphalt materials are now available, although for a higher cost

community preference. According to the AASHTO guidelines, the bikeway types most appropriate for utilization along the Study Area corridor are identified in the Table 9.

Table 9 – Bikeway Design Guidelines

Bikeway Type	Best Use	Design Speed	Design and Dimensional Considerations
Shared Lanes (no special provisions)	Minor roads with low traffic volumes, where bicyclists can share the road with no special provisions.	Vary based on location (urban or rural)	Min14', Max 15' lane width in each direction. Include signage as recommended by MUTCD.
Marked Shared Lanes	Space-constrained roads with narrow travel lanes, or road segments upon which bike lanes are not selected due to space constraints or other limitations.	Variable. Use where the speed limit is 35 mph or less.	Maintain existing roadway design and add pavement markings to indicate shared-lane use. Include signage as recommended by MUTCD.
Paved Shoulders	Rural highways that connect town centers and other major attractors.	Variable, generally 40-55 mph.	Min 4' (with no curb) or min 5' (with curb, rail, or barrier) shoulder in each direction. Increase width if speeds are over 50 mph or expected high bicycle volume or truck usage on roadway. On uphill sections, increase shoulder on uphill direction. On horizontal and vertical curves, increase shoulder at crest of vertical or inside of horizontal curve.
Shared Use Path	Linear corridors in greenways, along waterways, freeways, rail lines, and utility rights-of-way. May be short or long connections.	N/A	10-14' (with 2' shoulder), 8' width may be used on short segments, physical constraints exist, expected low bicycle utilization.

Source: AASHTO Guide for Development of Bicycle Facilities (2012)

An improved natural surface such as stone dust is recommended for off-road segments of the trail, as they will largely be in a natural setting. Stone dust is permeable and is less expensive to install than asphalt, although it can require more frequent maintenance over time, which may offset any initial cost savings. For areas of off-road trail over a 3% slope, adjustments to the alignment of the trail to lessen the slope or an alternative surface treatment may need to be investigated. Stone dust on a slope greater than 3% may be susceptible to erosion. Likewise, for off-road segments of the trail located in floodplains, an alternative surface treatment may need to be investigated.

If federal and/or state funding is used to construct on-road improvements, the design dimensions used must comply with standards set by the New York State Department of Transportation Highway Design Manual (NYSDOT HDM) and/or the Federal Highway Administration (FHWA). The required shoulder width is determined based on average motor vehicle operating speed, annual average daily traffic (AADT), and functional classification for each roadway.

Policing and Enforcement

Bollards or other physical barriers can be installed to deter or discourage unauthorized motorized vehicle access to off-road trail segments, as can regulatory signs. It is critical to maintain sufficient clearance for emergency or service vehicles and to prevent unauthorized motorized access.

Although the trail will provide easier access to semi-secluded areas, the presence of an official and highly-visible community facility can actually deter people from inappropriate or illegal activities. An improved trail as part of a larger system solidifies the perception that a hiker or biker could pass by at any given time, which can deter these unwanted activities. Generally, perpetrators seek out secluded areas. As the trail grows in popularity, it can in effect become self-

policing. Other communities locally, regionally, as well as nationally, have reported this phenomenon, citing that people who typically choose to use the trail are the ones that care most about its preservation. In addition, most trail users are local neighbors of the trail and not “outsiders” as is the common perception. While they may have the occasional problem, the most common response to trail construction from communities nationwide has been positive.



Fence barrier along trail

Accessibility

Accessibility for people with disabilities, including wheelchair users, should be provided whenever possible throughout the length of the proposed trail. It is recommended that accessible parking be provided where possible at each trailhead parking lot along with a trail connection that meets the standards of the Americans with Disabilities Act (ADA). Such standards also 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.

Trail Ownership and Maintenance

The utilization of some public funding sources for trail development, including most state and federal sources, typically anticipates public ownership of proposed trail corridors. Alternatively, a corridor easement or lease agreement may be acceptable but would need to be



Example of trail rules sign

established in a manner that would limit any agreement conditions that could negatively impact the investment of public dollars in the trail. The former is most desirable because the landowner holds all rights to the property.

One of the most common methods of acquiring full rights and title to a parcel of land is *fee simple acquisition*, where the landowner holds all rights to the property without restriction or reservation. Another potential option is a *bargain sale*, in which the current landowner agrees to sell the property below the market value with the difference being treated as a charitable tax deduction. Similarly, a *full donation of all or part of the property* could be considered, which may make the donor eligible for some property tax relief and/or charitable donation tax deductions.

In lieu of full acquisition of the corridor, each municipality could consider establishing a long-term easement or lease with the property owners. Property easements or leases are acceptable when using public funding for trail development but generally should meet the following terms to protect the public's investment:

- An easement or license should be irrevocable;
- Facilities, installations, and improvements should not be required to be automatically removed at the end of the easement or lease agreement;
- Use or conveyance of the space above or below ground could be a term for negotiation. The intent here is not to restrict the corridor owner's rights to allow other parallel uses but to ensure these uses do not negatively impact the trail facility installed, including the use of the trail and the aesthetics of the trail corridor;
- The corridor owner should not expect the trail operator to remove or relocate all or part of the trail facility, installation, or improvement at the operator's expense within either a short time frame and/or with no joint determination of the need to do so; and
- An easement or lease agreement should be granted for a minimum of 20 years, which is considered by state and federal funding sources to be a minimum duration of intended use and access for a trail project funded with public dollars.

The premature removal of a publicly-funded trail, or portion thereof, may result in a local community having to remove or relocate the trail at its own expense and/or pay back state/federal funding used for trail improvements. Both the NYSDOT and the Federal Highway Administration find this situation unacceptable. Therefore the public agency that will own and maintain the trail should consider acquiring portions of privately-owned properties or agree to long-term easements in order to protect and prevent negative impacts to the public's investment.

In general, it is important that private landowners are committed to the trail project, regardless of how future development plans evolve. If such plans do not materialize, or change substantially, they should not jeopardize the development of the trail. The Towns of Chili, Riga and the Village of Churchville should be proactive with the landowners and developers to achieve this objective. Additionally, in order to move forward with the future design and construction of the trail, the municipalities should ideally have assembled willing landowners wherever private land is necessary for the preferred trail alignment.

Bicycle Use of the Trail

Where the trail occurs on-road, bicyclists are encouraged to ride in the same direction as vehicular traffic and are obligated to obey the same laws that apply to motorists, while taking extra safety precautions. These include hand signals, the use of highly visible clothing and/or lights, and allowing

vehicles to pass when adequate space is available. Bicyclists riding off-road should dismount when crossing the street at a designated crosswalk. These standards for bicycle use are consistent with New York State Vehicle and Traffic Law as well as the recommended policy of numerous bicycle advocacy groups.

Signage

It is recommended that a uniform standard (or logo) be developed and utilized for the identification of the Black Creek Trail graphic wayfinding throughout its length. Informational signage or wayfinding signage that orients users to their position within the trail corridor and that provides an overview of the system should be included at all trailheads/parking areas, and at crossroads with other trail systems. Signage indicating accessible routes should also be included. Regulatory signs describe the general rules and regulations that apply to the trail system, such as permitted uses or hours of operation. Area-specific signage should also be included, such as 'STAY ON TRAIL' or 'RESPECT

NATURE' signage for portions that pass through or adjacent to ecologically sensitive areas. 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, areas prone to flooding, roadway crossings, merges, 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 most recent edition of the National Manual of Uniform Traffic Control Devices (MUTCD).

Local Bicycle Route Designation

A bicycle route is a system of bikeways designated by the jurisdiction having authority with appropriate directional and informational route signs, this can include or not include a route number. According to MUTCD standards, bike route signs should be used to identify route, indicate direction changes, inform cyclists of distances and destinations. Additionally, bike route signs should be installed at regular interval and pavement markings should be used where appropriate.

The AASHTO Task Force on US bicycle routes developed guidelines to assist in bicycle route selection. The guidelines encourage routes to meet as many of the following criteria as practicable:



Example of wayfinding or interpretive signage

- Meet the planning, design, and operational criteria in the AASHTO Guide for Development of Bicycle Facilities.
- Offer services and amenities such as restaurants, accommodations, camping, bicycle shops, and convenience/grocery stores at appropriate intervals.
- Go into the centers of metropolitan areas, using low-traffic and/or off-road bikeways when possible. Bypass routes could be considered to accommodate users who do not wish to enter the city or who are seeking a less urban experience.
- Include spurs to target destinations (universities or other educational institutions, recreational areas, or other attractions) and to multimodal nodes such as airports and rail, bus, and transit stations.
- Follow natural corridors and provide terrain suitable for cycling, avoiding extremely hilly and limited visibility winding roads when feasible.
- Consider appropriate combinations of low daily traffic, low truck traffic, wide paved shoulders, lane striping, adequate sight distance, and traffic speed in order to be bicycle friendly.
- In urban areas, be suitable for utility cycling (commuting, access to shopping, schools and universities, recreation centers, etc.). Consideration should be given to bicycle routes that can be used as evacuation routes for emergency situations.
- Include major existing and planned bike routes, including both on-road facilities and off-road shared use paths and trails that are suitable for road bikes.

The local municipalities are responsible for local and regional route designation and incorporation. The process for designating the Black Creek Trail as a local bicycle route will require each municipality to pass a resolution of support to adopt the trail as a local bicycle route.

Steering Committee & Public Input

The following list is based on comments from the Steering Committee and the public at-large, and represents the common concerns, questions and suggestions that were raised regarding the alignment, design and construction of the proposed trail. Notes from the public meetings and Steering Committee meetings are included in Appendix B.

- All committee members understand there is general concern with any trail alignment on private property.
- The Town of Chili, Town of Riga and Village of Churchville agreed they do not intend to acquire private property from any resident along the creek.
- The Town of Chili is open to discussion opportunities with willing property owners regarding potential trail alignments on their property.
- The Town of Riga residents have voiced concerns with the potential trail location on private property along the creek, however residents with property on the adjacent streets have also voiced concern regarding the potential impacts of the trail being located off the creek and on the street.
- There is concern regarding trail user safety associated with flooding and hunting, which is common in segments along the corridor.
- Safe accommodation should be provided on any on-road trail alignments.
- The preferred alignment must balance needs of property owners and recreational needs.
- There is great concern regarding a potential trail being located on property that was purchased with no plans for future trail designation.

Preferred Trail Alignment and Implementation

After careful review of the various alternatives for locating the Black Creek Trail, a preferred alternative was selected. This process involved presenting the alternatives and preferred alternative to residents, as well as numerous discussions with the Steering Committee weighing the pros and cons of each alternative. An evaluation matrix (Table 8) was also used to help determine which trail alternatives are the most preferred. The matrix contains a series of categories such as economic benefit, cost of improvements, timeframe for implementation, perceived safety and community preference, which were ranked on a scale from 1 to 3. The alternative with the highest score was determined to be the most preferred.

The preferred trail alignment for the Black Creek Trail is shown in Figure 10 consists of Alternatives A-1, B-1 from Black Creek Park to Stottle Road, B-2 and C-1 as described in the *Trail Alignment Alternatives* section. The preferred alternative achieves the overall goal of providing a non-motorized transportation facility connecting the Village of Churchville, through the Towns of Chili and Riga, to the Genesee Valley Greenway within the Black Creek Trail Study Area. The preferred alternative also agrees with the results of the evaluation matrix (Table 8). The alternatives listed above received the highest scores.

As of the writing of this study, Alternative B-2 does not have full support from the major landowners affected, and therefore is not feasible at this time. Although Alternative B-2 is not feasible, conversations with the Steering Committee resulted in naming B-2 as the preferred alternative for meeting the objectives of this study. Alternatives B-3 and C-3, not preferred by the Steering Committee, are feasible at this time. Both the preferred B-2 Alternative and the feasible B-3 and C-3 Alternatives are described in this study.

An opinion of probable cost for the preferred alternative can be found in the *Opinion of Probable Cost* section. It should be noted that the Towns of Chili and Riga and the Village of Churchville desire to work with willing landowners wherever the preferred alternative is on private property.

The specific steps necessary to create a trail along the preferred alternative are described in this section and outlined in the following table. An analysis of the Study Area and discussions with the Steering Committee and public will determine the recommendation of phases of construction. Additional links and potential complementary connections, found at the end of this section, can be considered follow-on phases or separate projects.



Figure 9 | Preferred Trail Alignment Map, See Map 10 in Appendix A

Black Creek Trail Feasibility Study
Towns of Chili, Riga and Village of Churchville, New York

Table 10 – On-Road Facility Design Recommendations Matrix

Segment	Road Name / Location	ROW Width	AADT	Posted Speed Limit (MPH)	Road Width, Condition	Proposed Improvements	Trail Section
A-1							
	West Shore Trail	--		--	--	None	Off-road trail section
	Howard Ave	50'	Unlisted (400-1500 Assumed)	25	22' (two 11' lanes)	12' lane widths, 5' tree lawn, 5' sidewalks	Pedestrians in sidewalk, cyclists in shared lane with pavement markings
	NYS RT 36 South Main Street (north of rr tracks)	66'	4955	35	36.5' (two 12' lanes)	12" lane widths with 6' paved shoulder	Pedestrians in Sidwalk and Bikes in the paved shoulder bikeway
	NYS RT 36 South Main Street (south of rr tracks)	66'	4955	35	31'	12" lane widths with 6' paved shoulder	Paved Shoulder Bikeway
	Adjacent to 490 ROW	--	--	--	--	10' stone dust trail	Off-road trail section
	NYS RT 36 Churchville Riga Road (south of I-490)	66'	2059	45 Assumed	31'	10' stone dust trail	Off-road trail section
	Roberston Rd (Rt 36 - Burnt Hill Road)	100'	Unlisted (1500-2000 Assumed)	45 Assumed	21'	11' lane widths with 4' shoulders	Off-road trail section
	Roberston Road (Burnt Hill Rd - Palmer Rd)	50'	Unlisted (1500-2000 Assumed)	45 Assumed	21'	11' lane widths with 4' shoulders	Paved Shoulder Bikeway
	Roberston Road (Palmer Rd - Attridge Rd)	66'	Unlisted (1500-2000 Assumed)	45 Assumed	21'	11' lane widths with 4' shoulders	Off-road trail section
	Attridge Road	66'	2042	40	25'	12' lane widths with 4' shoulders	Paved Shoulder Bikeway
	Chili Avenue Extension (Riga)	49.5'	Unlisted (1500-2000 Assumed)	45	21.5'	11' lane widths with 4' shoulders	Paved Shoulder Bikeway
	Chili Avenue Extension (Chili)	49.5'	Unlisted (1500-2000 Assumed)	45	21'	11' lane widths with 4' shoulders	Paved Shoulder Bikeway
	Stuart Road between Chili Ave Ext and NYS Route 33A	49.5'	Unlisted (1500-2000 Assumed)	45	21'	11' lane widths with 4' shoulders	Paved Shoulder Bikeway
	33A - Chili Riga Avenue	66'	2623	45 Assumed	--	12' lane widths with 8' shoulders	Paved Shoulder
	Stuart Road	49.5'	Unlisted (1500-2000 Assumed)	30	Approx 20'	maintain existing lanes and add shared lane pavement markings	Cyclists in shared lane with pavement markings
B-3							
	Stottle Road (north of bridge)	66'	Unlisted (Over 2000 Assumed)	40	25' 11' lanes	11' lane widths with 5' shoulders	Paved Shoulder
	Stryker Road		Unlisted (Over 2000 Assumed)	40 Assumed	24'	12' lane widths with 4' shoulders	Paved Shoulder
C-3							
	Stryker Road		Unlisted (Over 2000 Assumed)	40 Assumed	24'	12' lane widths with 4' shoulders	Paved Shoulder
	Brook road		Unlisted (Over 2000 Assumed)	30	24' 11.5' lanes	12' lane widths with 4' shoulders	Paved Shoulder

* Proposed improvement comply with AASHTO Guide for Development of Bicycle Facilities (2012)

Implementation Plan for Alternative A-1 (Preferred Alternative)

Alternative A-1 as outlined in the Trail Alignment Alternatives section was selected as the preferred alternative for connecting the Churchville Park via the West Shore Trail at Howard Avenue in the Village of Churchville to Black Creek Park in the Town of Chili. This option would utilize road right-of-way for on-road sections of the trail, and publicly owned land and easements on private property for off-road segments.

The preferred Alternative segment A-1 requires the following improvements:
Install a trail crossing and warning signage where the West Shore Trail connects to Howard Avenue. The design should make the crossing highly-visible to motorists, with consideration given to roadside signage, colored pavement, or other eye-catching treatments. Traffic volumes, speed and sight distance will need to be investigated further during the design stage of the project in order to design an adequate safe pedestrian crossing.



Shared lane markings at Howard Avenue

Reconstruct Howard Avenue to include two 12' travel lanes and new 5' wide sidewalks on both sides of the street to accommodate pedestrians. The sidewalk would be separated from the road with a 5' tree lawn and more defined entrances and exits to the Eco Heating and Cooling and Inland Vacuum Industries properties would be constructed to improve circulation and safety. Utility poles on the south side of Howard Avenue may need to be relocated to accommodate the new sidewalk.



5' Paved shoulder at NYS Route 36

Install shared travel lane markings on

Howard Avenue in each direction to accommodate bicycles and install signs to designate the local bicycle route.

Install a trail crossing and warning signage at the intersection of Howard Avenue and NYS Route 36. The design should make the crossing highly-visible to motorists, with consideration given to roadside signage, colored pavement, or other eye-catching treatments. Traffic volumes, speed and sight distance will need to be investigated further during the design stage of the project in order to design an adequate safe pedestrian crossing.

Extend paved shoulder on NYS Route 36 to accommodate a 6' wide paved shoulder in each direction from where the existing curb ends, just south of the railroad tracks, approximately 2,000' south to the Sanford Road North. Mailboxes and a few utility poles may need to be relocated to accommodate the new shoulders.

Install a trail crossing and warning signage at the intersection of NYS Route 36 and Sanford Road North. The design should make the crossing highly-visible to motorists, with consideration given to roadside signage, colored pavement, or other eye-catching treatments. Traffic volumes, speed and sight distance will need to be investigated further during the design stage of the project in order to design an adequate safe pedestrian crossing.

Install a 10' wide stone dust trail on the east side of NYS Route 36 from Sanford Road North to the north side of the I-490 westbound exit ramp. At the I-490 westbound exit ramp, the stone dust trail would continue east along the I-490 right-of-way to the west bank of Black Creek.

Because this section of the trail is located within existing New York State Department of Transportation Right-of-Way and considered a 'break in access', coordination and approval from NYSDOT, FHWA, as well as NEPA compliance is required. The approval process is outlined in Appendix 8 of the NYS DOT Project Development Manual, *Interstate & Other Freeway Access Control & Modifications*. The approval process requires coordination with the NYS DOT Regional Office and completion of an Access Modification Report. This is typically a lengthy process and should be considered during the implementation phase.



Typical 10' wide shared-use trail section

In this segment of the trail fencing is required along the expressway side of the trail. Additionally, the Town will be required to establish official access and use policies and perform regular outreach to trail users and adjacent property owners regarding access and use.

Install an 8' wide trail adjacent to Black Creek under the I-490 bridges. The vertical clearance to the low chord of the superstructure should be a minimum of eight feet. Additionally, the NYS DOT may require overhead protection beneath the bridge. Based on the preliminary hydraulic assessment

(detailed in Appendix D) the top of trail elevation would only be inundated 5% of the year, and will self drain. Further analysis of the trail location in proximity to Black Creek, existing floodplains and wetlands as well as materials used for construction should be performed during the design stage of the project. This trail section will require a barrier along the bank of the Black Creek as well as flood warning signage in advance of this segment of the trail.

Install a 10' wide stone dust trail from the west bank of Black Creek west towards NYS Route 36. This section of trail is located on publicly owned lands requiring no easements.

Install trailhead on NYS Route 36 at the former sewage treatment plant. The trailhead would consist of an interpretive/wayfinding kiosk, directional signage, a bike rack, benches and approximately five designated trail parking spaces including handicapped parking.



Trailhead at Former Sewage Treatment Plant

Install a 10' wide stone dust trail along the east side of NYS Route 36 from the entrance of the former sewage treatment plant south to Robertson Road. This section of the trail is located within existing ROW. Detailed study is required to confirm the 10' planted median and 10' wide trail can be located within ROW. If a reduced planted median is required, an approved barrier (box beam guard rail, concrete wall, etc) may be installed with the narrower median. A few utility poles may need to be relocated to accommodate the new stone dust trail.



10' wide trail along east side of NYS Route 36

Install a trail crossing and warning signage at the intersection of Robertson Road and NYS Route 36. The design should make the crossing highly-visible to motorists, with consideration given to roadside signage, colored pavement, or other eye-catching treatments. Traffic volumes, speed and sight distance will need to be investigated further during the design stage of the project in order to design an adequate safe pedestrian crossing.



Paved shoulder at Robertson Road

Extend paved shoulder on Robertson Road to accommodate a 4' wide bikeway in each direction from the intersection at NYS Route 36 to Attridge Road.

Extend paved shoulder on Attridge Road to accommodate a 4' wide bikeway in each direction from the intersection at Robertson Road to Chili Avenue Extension.

Extend paved shoulder on Chili Avenue Extension to accommodate a 4' wide bikeway in each direction from the intersection at Attridge Road to Stuart Road.

Maintain existing lanes and add shared lane markings to accommodate a bikeway in each direction from the intersection at Chili Avenue Extension to NYS Route 33A.

Install a trail crossing and warning signage at the intersection of Stuart Road and NYS Route 33A. The design should make the crossing highly-visible to motorists, with consideration given to roadside signage, colored pavement, or other eye-catching treatments. Traffic volumes, speed and sight distance will need to be investigated further during the design stage of the project in order to design an adequate safe pedestrian crossing.

Install shared travel lane markings on Stuart Road in each direction to accommodate bicycles and install signs to designate the local bicycle route.

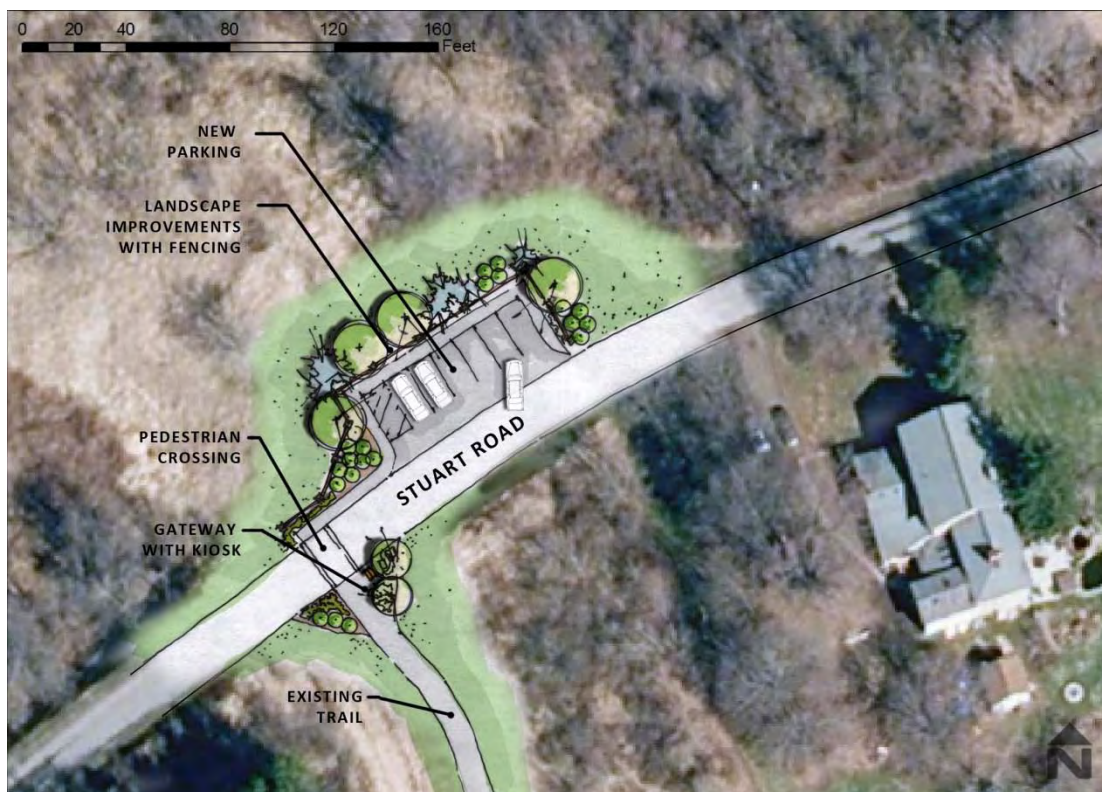
Install bike routes signs at regular intervals per the national Manual of Traffic Control Devices and NYS Supplement.

Implementation Plan for Alternative B-1 From Black Creek Park to Stottle Road and Alternative B-2 (Preferred Alternative)

Alternative B-1 from Black Creek Park to Stottle Road and Alternative B-2 as outlined in the Trail Alignment Alternatives section were selected as the preferred alternative for connecting Black Creek Park to NYS Route 386 at the Pfrengle property in the Town of Chili. This option would utilize road right-of-way for on-road sections of the trail, and publicly owned land and easements on private property for off-road segments.

The preferred Alternative segment B-1 from Black Creek Park to Stottle Road and Alternative segment B-2 require the following improvements:

Install trailhead on the north side of Stuart Road at the entrance to Black Creek Park (entrance located on south side of Stuart Road). The trailhead would consist of an interpretive/wayfinding kiosk, directional signage, a bike rack, informal seating opportunities and approximately five designated trail parking spaces including handicapped parking.



Trailhead at Stuart Road

Install a trail crossing and warning signage at Start Road at the new trailhead at Black Creek Park. The design should make the crossing highly-visible to motorists through the utilization of colored pavement or other eye-catching treatments.

Improve existing trail in Black Creek Park connecting Stuart Road to the boat launch in Black Creek Park. Improvements include installing a 10' trail with stone dust surfacing.

Install new 10' stone dust trail in Black Creek Park to connect the trail between the Sunnyside Lodge and Union Street. Analysis of the trail location in proximity to Black Creek, existing floodplains and wetlands, as well as materials used for construction should be performed during the design stage of the project.



Example of shared-use trail along Black Creek in Union Station Park

Install a trail crossing and warning signage at Union Street connecting the new trail in Black Creek Park to Union Station Park. The design should make the crossing highly-visible to motorists, with consideration given to roadside signage, colored pavement, or other eye-catching treatments. Traffic volumes, speed and sight distance will need to be investigated further during the design stage of the project in order to design an adequate safe pedestrian crossing.

Install a 10' wide trail through Union Station Park along Black Creek. Analysis of the trail location in proximity to Black Creek, existing floodplains and wetlands, as well as materials used for construction should be performed during the design stage of the project.

Install a 10' wide clear-width pedestrian crossing of Black Creek from Union Station Park to Chili Nature Center. Analysis of the crossing and the materials used for construction should be performed during the design stage of the project.

Improve existing trail in the Chili Nature Center connecting the new pedestrian bridge to a new elevated boardwalk. Improvements include installing a 10' wide trail with stone dust surfacing.

Install 10' wide trail and elevated boardwalk to connect the Chili Nature Center to Stottle Road. Analysis of the trail location in proximity to Black Creek, existing floodplains and wetlands, as well as materials used for construction should be performed during the design stage of the project.

Install a trail crossing and warning signage at Stottle Road. The design should make the crossing highly-visible to motorists, with consideration given to roadside signage, colored pavement, or other eye-catching treatments. Traffic volumes, speed and sight distance will need to be investigated further during the design stage of the project in order to design an adequate safe pedestrian crossing.



Example of elevated boardwalk trail

Install 5' wide paved shoulder on Stottle Road south approximately 1400'. An additional 4' of pavement will be added to the existing road width in order to accommodate the two travel lanes and two shoulders. Some utility poles, mailboxes and roadside ditches may need to be relocated to accommodate the new shoulders.

Install a 10' wide stone dust trail east through the flag lots to the Pfrengle Property. This section of the trail is located on private property and would require a permanent easement.

Install a 10' wide stone dust trail on the western boundary of the Pfrengle Property to Black Creek. This section of trail is located on publicly owned lands.

Install a 10' wide trail along Black Creek on the Pfrengle Property to NYS Route 386. Analysis of the trail location in proximity to Black Creek, existing floodplains and wetlands, as well as materials used for construction should be performed during the design stage of the project.

Install trailhead on NYS Route 386 at the Pfrengle Property. The trailhead would consist of an interpretive/wayfinding kiosk, directional signage, a bike rack, benches and approximately five designated trail parking spaces including handicapped parking.

Install a trail crossing and warning signage at NYS Route 386, Old Scottsville Chili Road. The design should make the crossing highly-visible to motorists, with consideration given to roadside signage, colored pavement, or other eye-catching treatments. Traffic volumes, speed and sight distance will need to be investigated further during the design stage of the project in order to design an adequate safe pedestrian crossing.

Install directional signage along the trail and at all decision points.

Implementation Plan for Alternative B-1 From Black Creek Park to Stottle Road and Alternative B-3 (Feasible Alternative)

Alternative B-3 as outlined in the Trail Alignment Alternatives section was NOT selected as the preferred alternative. However, it is currently the most feasible option. Alternative B-3 would utilize road right-of-way for on-road sections of the trail for its entire length.

The feasible Alternative segment B-3 requires the following improvements and the improvements for Alternative B-1 from Black Creek Park to Stottle Road as described in the Implementation Plan for Alternative B-1 From Black Creek Park to Stottle Road and Alternative B-2 (Preferred Alternative) section:

Install 5' wide paved shoulder on Stottle Road south approximately 1400'. An additional 4' of pavement will be added to the existing road width in order to accommodate the two travel lanes and two shoulders. Some utility poles, mailboxes and roadside ditches may need to be relocated to accommodate the new shoulders.



Paved Shoulder Bikeway

Install 4' wide paved shoulder on Stryker Road from Stottle Road to NYS Route 386.

An additional 8' of pavement will be added to the existing road width in order to accommodate the two travel lanes and two shoulders. Some utility poles, mailboxes and roadside ditches may need to be relocated to accommodate the new shoulders.

Install directional signage along the trail and at all decision points.

Implementation Plan for Alternative C-1 (Preferred Alternative)

Alternative C-1 as outlined in the Trail Alignment Alternatives section was selected as the preferred alternative for connecting NYS Route 386 at the Pfrengle property to the Genesee Valley Greenway Trail in the Town of Chili. This option would utilize road right-of-way for on-road sections of the trail, and publicly owned land and permanent easements on private property for off-road segments.

The preferred Alternative segment C-1 requires the following improvements:

Install 4' wide paved shoulder on Old Scottsville Chili Road. An additional 8' of pavement will be added to the existing road width in order to accommodate the two travel lanes and two 4' wide shoulders. Some utility poles, mailboxes and roadside ditches may need to be relocated to accommodate the new shoulders.

Install 4' wide paved shoulder on Humphrey Road. An additional 4' of pavement will be added to the existing road width in order to accommodate the two travel lanes and two shoulders. Some utility poles, mailboxes and roadside ditches may need to be relocated to accommodate the new shoulders.

Install 4' wide paved shoulder on Brook Road. An additional 8' of pavement will be added to the existing road width and lane widths restriped in order to accommodate the two travel lanes and two shoulders. Some utility poles, mailboxes and roadside ditches may need to be relocated to accommodate the new shoulders.

Install directional signage along the trail and at all decision points.

Implementation Plan for Alternative C-1 and Alternative C-3 (Feasible Alternative)

Alternative C-3 as outlined in the Trail Alignment Alternatives section was NOT selected as the preferred alternative. However, it is currently the most feasible option. Alternative C-3 would utilize road right-of-way for on-road sections of the trail for its entire length.

The feasible Alternative segment C-3 requires the following improvements and the improvements for Alternative C-1 from Humphrey Road to the Genesee Valley Greenway as described in the Implementation Plan for Alternative C-1 (Preferred Alternative) section:

Install 4' wide paved shoulder on Stryker Road. An additional 8' of pavement will be added to the existing road width in order to accommodate the two travel lanes and two shoulders. Some utility poles, mailboxes and roadside ditches may need to be relocated to accommodate the new shoulders.

Install 4' wide paved shoulder on Brook Road. An additional 4' of pavement will be added to the existing road width in order to accommodate the two travel lanes and two shoulders. Some utility poles, mailboxes and roadside ditches may need to be relocated to accommodate the new shoulders.

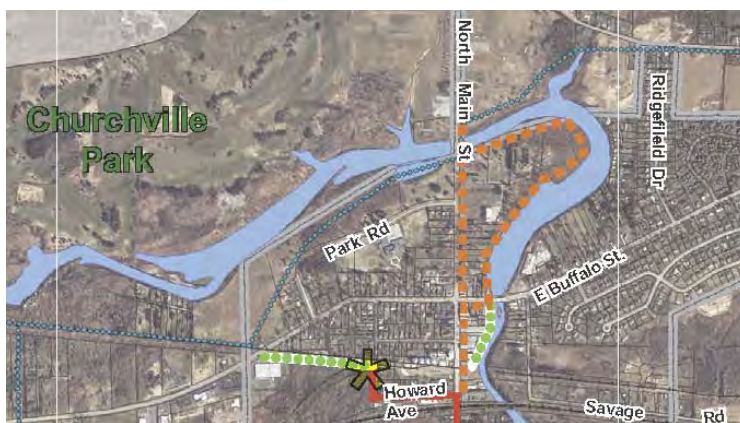
Install directional signage along the trail and at all decision points.

Complementary Connections

Churchville Park / Main Street / Black Creek Loop Trail

The Black Creek Trail has the potential to connect to a loop trail connecting Churchville Park, Main Street and Black Creek. The connection would link to the trail to major recreational and commercial resources as well as generate trail users.

The Churchville Park / Main Street / Black Creek Loop Trail would require the following improvements.



Install trailhead at Churchville Park.

Churchville Park/Main Street / Black Creek Loop Trail

The trailhead would consist of an interpretive/wayfinding kiosk, directional signage, a bike rack, benches and approximately five designated trail parking spaces including handicapped parking.

Install a 10' wide trail adjacent to Black Creek from just south of the Main Street Bridge at Black Creek to connect to the existing trail south of the dam at East Buffalo Street. Analysis of the trail location in proximity to Black Creek, existing floodplains and wetlands, as well as materials used for construction should be performed during the design stage of the project.

Install trailhead on the NYS Route 36. The trailhead would consist of an interpretive/wayfinding kiosk, directional signage, a bike rack, benches and approximately five designated trail parking spaces including handicapped parking.

Install directional signage along the trail and at all decision points.

Connection to residential development south of Union Station Park

The housing development south of Union Station Park has the potential to be linked to the Black Creek Trail at the intersection of Union Station Road and Trestle Trail and from West Ham Circle. This connection would potentially generate additional trail users.

The connection to the housing development south of Union Station Park would require the following improvements.



Connections to residential developments at Union Station Park

Install a 10' wide stone dust trail

from the intersection of Union Station Road and Trestle Trail east to the Black Creek Trail. This section of trail is located on privately owned land and would require easements.

Install a 10' wide stone dust trail to connect the existing paved trail accessing West Ham Circle north to the Black Creek Trail. This section of trail is located on privately owned land and would require easements.

Install directional signage along the trail and at all decision points.

Connection to Chestnut Ridge Elementary School from Stottle Road

The residential neighborhoods along the trail have the potential to be connected to the Chestnut Ridge Elementary School along Stottle Road and Chili Avenue. This is a connection that would be a candidate for funding through the Safe Routes to Schools program, as identified in the funding section of this study.

The connection to the Elementary School would require the following improvements:

Install a separated and paved shoulder on Stottle Road north to Chili Avenue. The trail should be a minimum of 8' wide with a guiderail separation from the vehicular travel lane. Some utility poles, mailboxes and roadside ditches may need to be relocated to accommodate the new shoulders.

Install a trail crossing and warning signage at Chili Avenue and Stottle Road. The design should make the crossing highly-visible to motorists, with consideration given to roadside signage, colored pavement, or other eye-catching treatments. Traffic volumes, speed and sight distance will need to be investigated further during the design stage of the project in order to design an adequate safe pedestrian crossing.

Install a 10' wide stone dust trail from the intersection of Stottle Road and Chili Avenue across the school campus to connect to the school entrance.

Phasing Plan

The phasing plan was developed with the advisement of the Steering Committee and accepted by each municipality. Any roadway improvement projects planned for the roadways associated with the preferred trail route should include funding to accommodate the proposed trail improvements.

PHASE 1: Five Year Plan (by municipality)

The improvements included in this phase are feasible to complete within a 5 year timeframe.

Village of Churchville

- Designate local bicycle route on Howard Avenue and NYS Rt. 36 to north of I-490.
- Improve Howard Avenue from existing West Shore Trail to South Main Street to include shared travel lanes with pavements markings and five foot wide tree lawn and sidewalks in both directions.
- Install shared-use trail east along I-490 to Black Creek, south under I-490 bridge, and west along I-490 to connect to NYS Route 36.
- Install trailhead location at NYS Route 36 at the former sewer plant.

Town of Riga

- Designate local bicycle route east on Robertson Road to Attridge Road, north on Attridge Road to Chili Avenue Extension, east on Chili Avenue Extension to the Town line.
- Install shared-use trail south on NYS Route 36 to Robertson Road.

Town of Chili

- Designate local bicycle route east on Chili Avenue Extension to Stuart Road, south on Stuart Road to Black Creek Park.
- Install trailhead location on North Side of Stuart Road at Black Creek Park.
- Improve existing shared-use trail in Black Creek Park to connect to Sunnyside Lodge
- Install a new shared-use trail to connect Sunnyside Lodge to Union Street just north of stream culvert at Union Station Park.
- Install a high visibility crossing at Union Street.
- Install shared-use trail to connect to the existing asphalt trail in Union Station Park and continue improvements with a new shared-use trail south of existing asphalt trail along Black Creek to a location adjacent to Chili Heights Nature Trail.
- Install new pedestrian bridge crossing to Chili Heights Nature Trail.
- Improve existing trail in Chili Heights Nature Trail.
- Install new shared-use elevated boardwalk east of existing Chili Heights Nature Trail to connect to Stottle Road.

- Designate local bicycle route on Stottle Road south to Stryker Road, east on Stryker Road to Humphrey Road, north on Humphrey Road, then east on Brook Road to existing trail head at Genesee Valley Greenway Trail.

PHASE 2: Ten Year Plan (by municipality)

The Phase 2 improvements should be feasible within ten years. The on-road trail improvement locations should be reviewed for additional investment as each municipality develops their capital improvement plans.

Village of Churchville

- Install on-road trail improvements south on NYS Route 36 from Howard Avenue to north of I-490 at North Sanford Road, includes widened shoulder in each direction.
- Install high visibility east-west crossing improvements at NYS Route 36 north of I-490.

Town of Riga

- Install high visibility north-south crossing at Robertson Road – NYS Route 36 intersection.
- Install on-road trail improvements east on Robertson Road to Attridge Road, north on Attridge Road to Chili Avenue Extension, east on Chili Avenue Extension to the Town line, includes widened shoulder in each direction at all segments.

Town of Chili

- Install on-road trail improvements east on Chili Avenue Extension to Stuart Road (north of Chili Riga Center Road), includes widened shoulder in each direction.
- Install high visibility north-south crossing at Stuart Road – Chili Riga Center Road.
- The preferred trail alignment between Stottle Road and Chili Scottsville Road includes the development of a shared-use trail along the right side of Black Creek (on private property), connecting to the Pfrengle property. This is the preferred alignment and should be pursued if the affected landowners are agreeable in the future.
- If the preferred trail alignment is not implementable, the on-road trail improvements should continue south on Stottle Road to Stryker Road, east on Stryker Road to Humphrey Road, north on Humphrey Road, then east on Brook Road to existing trail head at Genesee Valley Greenway Trail, with includes widened shoulder in each direction.

Opinion of Probable Cost

The following opinion of probable cost is presented for planning purposes, to allow the Towns of Chili and Riga and the Village of Churchville to gauge the approximate cost for developing a trail connecting the Village of Churchville to the Genesee Valley Greenway with new off-road shared use paths and on-road signed shared roadway facilities as presented in this study. The actual location and design of the trail may change once the project reaches the design stage and construction costs are subject to change over time. Dollar figures included are from 2013; escalation due to inflation or other factors is not included.

***SEGMENT A: Village of Churchville
West Shore Trail at Howard Avenue to I-490***

DESCRIPTION OF WORK	TOTAL	PHASE 1	PHASE 2
Trail Construction	\$690,335	\$649,552	\$179,190
Trail Amenities (e.g. Benches, Kiosks, Bollards, Landscaping, etc)	\$70,300	\$25,950	\$7,150
Signage and Road Crossings	\$68,107	\$32,450	\$8,950
SUBTOTAL	\$828,742	\$707,952	\$195,290
Work Zone Traffic Control	\$41,400	\$68,107	\$32,450
Incidentals (Survey, Mobilization)	\$49,700	\$38,950	\$10,750

SEGMENT A SUBTOTAL:

20% CONTINGENCY:

15% ENGINEERING:

15% CONSTRUCTION MANAGEMENT:

\$919,842	\$815,008	\$238,490
\$184,000	\$163,002	\$47,698
\$138,000	\$122,251	\$35,774
\$138,000	\$122,251	\$35,774

SEGMENT A TOTAL	\$1,379,842	\$1,222,512	\$357,736
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SEGMENT A TOTAL DISTANCE (Miles)	1.2	
SEGMENT A COST PER MILE*	\$1,131,300	

* rounded to nearest hundred

**SEGMENT B: Town of Riga
I-490 to Stuart Road**

DESCRIPTION OF WORK	TOTAL COST	PHASE 1	PHASE 2
Trail Construction	\$1,933,645	\$173,861	\$2,009,475
Trail Amenities (e.g. Benches, Kiosks, Bollards, Landscaping, etc)	\$134,600	\$6,950	\$80,350
Signage and Road Crossings	\$115,091	\$8,700	\$100,500
SUBTOTAL	\$2,183,336	\$189,511	\$2,190,325
Work Zone Traffic Control	\$109,200	\$8,700	\$100,500
Incidentals (Survey, Mobilization)	\$131,000	\$10,450	\$120,550

SEGMENT B SUBTOTAL:	\$2,423,536	\$208,661	\$2,411,375
20% CONTINGENCY:	\$484,700	\$41,732	\$482,275
15% ENGINEERING:	\$363,500	\$31,299	\$361,706
15% CONSTRUCTION MANAGEMENT:	\$363,500	\$31,299	\$361,706

SEGMENT B TOTAL	\$3,635,236	\$312,991	\$3,617,062
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SEGMENT B TOTAL DISTANCE (Miles)	4.3	
SEGMENT B COST PER MILE*	\$837,400	

* rounded to nearest hundred

SEGMENT C: Town of Chili
Stuart Road to Genesee Valley Greenway Trail

DESCRIPTION OF WORK	TOTAL COST	PHASE 1	PHASE 2
Trail Construction	\$4,511,995	\$1,690,464	\$3,323,090
Trail Amenities (e.g. Benches, Kiosks, Bollards, Landscaping, etc)	\$322,600	\$67,600	\$132,900
Signage and Road Crossings	\$178,959	\$84,500	\$166,100
SUBTOTAL	\$5,013,554	\$1,842,564	\$3,622,090
Work Zone Traffic Control	\$250,600	\$84,500	\$166,100
Incidentals (Survey, Mobilization)	\$300,800	\$101,400	\$199,400

SEGMENT C SUBTOTAL:

20% CONTINGENCY:

15% ENGINEERING:

15% CONSTRUCTION MANAGEMENT:

\$5,564,954	\$2,028,464	\$3,987,590
\$1,113,000	\$405,693	\$797,518
\$834,700	\$304,270	\$598,139
\$834,700	\$304,270	\$598,139

SEGMENT C TOTAL	\$8,347,354	\$3,042,697	\$5,981,386
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SEGMENT C TOTAL DISTANCE (Miles)	8.3	
SEGMENT C COST PER MILE <input type="checkbox"/>	\$1,003,700	

GRAND TOTAL - ALL SEGMENTS	\$13,362,432	\$4,578,200	\$9,956,184
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TOTAL DISTANCE (Miles) - ALL SEGMENTS	13.9	
COST PER MILE - ALL SEGMENTS*	\$962,900	

☐ rounded to nearest hundred

Funding Sources

The most likely means of implementing some of the trail improvement recommendations identified in this feasibility study is through application to multiple funding sources. Most trails are developed using a combination of public funding from various governmental levels, private funding, local public forces and volunteer assistance. This section provides an overview of the potential funding sources for development of the Black Creek Trail.

Federal Sources

The Federal Government provides funding for transportation projects through various funding programs contained within multi-year federal transportation legislation, with the current appropriations bill referred to as MAP-21, or Moving Ahead for Progress in the 21st Century. MAP-21 is a new two-year federal transportation act that was signed in July 2012 after the expiration of SAFETEA-LU in March 2012. The new act created the Transportation Alternatives Program (TAP) which combines several SAFETEA-LU programs under a single heading, continuing funding support for programs and projects defined as transportation alternatives, including:

- on- and off-road pedestrian and bicycle facilities;
- community improvement projects;
- recreational trail program projects; and
- safe routes to school projects.

MAP-21 also continues the Surface Transportation Program (STP) and the Congestion Mitigation and Air Quality Program (CMAQ) which also supply potential federal funding sources for trail improvements.

All federal funds for transportation projects in Rochester's seven-county region are allocated through the Genesee Transportation Council (GTC), the area's Metropolitan Planning Organization (MPO). By law, funded projects must be selected for inclusion through the Transportation Improvement Program (TIP) process and must conform to the MPO's Long Range Transportation Plan (LRTP). In general, regular amendments are made to the TIP to include projects of significant community need and to adjust for any changes in anticipated federal funding availability. The GTC TIP was last updated for FFY 2011-2014 in December 2011, which required the removal of approximately \$130 million in projects resulting from a decrease of anticipated federal revenue. The GTC recently announced applications for FFY 2014-2017 in December 2012.

In the long term, it is expected that funding for multi-use trails will continue to be provided from the federal government, with the greatest emphasis on trails that provide a transportation purpose by connecting users with destinations and services. A greater use of alternative forms of transportation will lessen the demand on the existing transportation system, reduce expensive infrastructure investments, and promote more healthy living.

Municipal officials and trail organizations should stay abreast of funding notifications and calls for projects from the GTC to ensure inclusion in future funding programs. Federal funding sources provide up to 80 percent of project costs and require a 20 percent local match. 'Soft' match provisions (e.g., force account labor) are allowed, including soft matches from public agencies.

Federal surface transportation law provides tremendous flexibility for the funding of bicycle and pedestrian improvements from a wide variety of programs. Virtually all the major transportation funding programs can be used for bicycle and pedestrian-related projects. Local officials may also be able to acquire some trail project funding assistance by working with their federal representatives to acquire special funding appropriations through appropriations bills, transportation and other related legislative actions, and other special appropriations.

Congestion Mitigation and Air Quality Program (CMAQ)

The CMAQ program provides funding for surface transportation and other related projects that contribute to air quality improvements and reduce congestion in areas that are designated as non-attainment or in maintenance per the National Ambient Air Quality Standards. Selection of CMAQ projects is made at the State and local level but is subject to broad Federal project eligibility guidelines. Eligible project categories include bicycle and pedestrian projects, yet these projects must have a strong focus on the reduction of single-occupancy vehicle travel. The connection of the Black Creek Trail between local employment/services centers and residential neighborhoods will make a compelling case for the utilization of this trail as a transportation alternative. In addition, future connections between the trail and NYS Bike Route 19 to the west and Route 5 to the northeast would also lay the groundwork for greater success in accessing this funding source.

Surface Transportation Program (STP)

The Surface Transportation Program is a primary core Federal-aid program within MAP-21 utilized for local highway and trail improvement projects. The STP provides flexible funding that may be used for a variety of projects through numerous sub-programs, including all project types eligible for funding under the Transportation Alternatives Program. STP funds would support the following activities associated with the Black Creek Trail Project:

- Installation of bicycle lanes on roadways
- Paving of roadway shoulders
- Installation of bicycle route signage
- Spot improvements along the trail
- Trail/highway intersection improvements
- New or retrofitted sidewalks
- Installation of new crosswalks and curb cuts
- Traffic signal improvements
- Traffic calming techniques

STP funding is commonly utilized for trail projects and should be investigated as a primary source of funding for the Black Creek Trail for on-road sections of the trail.

Highway Safety Improvement Program (HSIP)

The Highway Safety Improvement Program (HSIP) is a core Federal-aid program with an overall purpose to achieve a significant reduction in traffic fatalities and serious injuries on all public roads through the implementation of infrastructure-related highway safety improvements. As part of the HSIP, a new High Risk Rural Roads Program was established that provides funding for construction and operational improvements on rural major or minor collectors or rural local roads. Classification as a High Risk Rural Road requires that the accident rate for fatalities and incapacitating injuries for the

highway in question exceeds the statewide average. HSIP funds would support the following activities associated with the Black Creek Trail:

- Installation of bicycle lanes on roadways
- Paving of roadway shoulders
- Spot improvements along the trail
- Trail/highway intersection improvements
- New or retrofitted sidewalks
- Installation of new crosswalks and curb cuts
- Traffic signal improvements
- Traffic calming techniques

HSIP funding is commonly utilized for trail projects and should be investigated as a secondary source of funding for the Black Creek Trail for on-road sections of the trail.

Transportation Alternatives Program (TAP)

The Transportation Alternatives Program functions as an umbrella for three separate programs formerly functioning separately under SAFETEA-LU. With some minor exceptions within the Recreational Trails program, all TAP funding requires a 20 percent local match that may be cash or in-kind services. The following is a brief overview of these funding streams and any significant regulatory changes regarding their application to the Black Creek Trail.

Recreational Trails (RT)

The Recreational Trails Program provides funding to construct and maintain recreational trails. Each state must establish a State Recreational Trails Advisory Committee that represents both motorized and non-motorized recreational trail users to distribute funds. Of funds distributed to a state, 30 percent must be used for motorized trails, 30 percent must be used for non-motorized trails, and the remaining 40 percent can be used for either type of trail. A typical RT award is \$50,000 to \$100,000. RT funds would support the following activities associated with the Black Creek Trail:

- Construction of a shared use path (off-road)
- Construction of a single lane hike/bike trail (off-road)
- Trail/highway intersection improvements

RT funding is commonly utilized for trail projects and should be investigated as a primary source of funding for the Black Creek Trail for off-road sections of the trail.

Transportation Enhancements (TE)

Transportation Enhancements (TE) funds are now included under the Transportation Alternatives Program, and administered by the New York State Department of Transportation (NYSDOT) with assistance in project solicitation and selection being provided by the Genesee Transportation Council (GTC). In order to maximize the use of the available TE funding, this program provides innovative financing alternatives for local matching requirements of 20 percent. There are 8 categories for eligible enhancement activities that can be funded under TE. The proposed trail is potentially eligible for TE funding under one category: provision of facilities for bicyclists and pedestrians. TE funds would support the following activities associated with the Black Creek Trail:

- Installation of bicycle lanes on roadways

- Paving of roadway shoulders
- Spot improvements along the trail
- Trail/highway intersection improvements
- New or retrofitted sidewalks
- Installation of new crosswalks and curb cuts
- Traffic signal improvements

TE funding is commonly utilized for trail projects and should be investigated as a primary source of funding for the Black Creek Trail.

Safe Routes to School (SRTS)

Similar to TE funds, SRTS funds are now included under the TAP umbrella. The SRTS Program provides funding to enable and encourage children, including those with disabilities, to walk and bicycle to school; to make walking and bicycling to school safe and more appealing; and to facilitate the planning, development and implementation of projects that will improve safety, and reduce traffic, fuel consumption, and air pollution in the vicinity of schools. Portions of the Black Creek trail projects that connect neighborhoods along Union Street through the Chili Nature Center to the Chestnut Ridge Elementary School may be eligible for funding. Similar to the Transportation Enhancements funding, SRTS funding is administered by the State; municipal officials and interested parties should remain in touch with GTC and their regional NYSDOT office for further funding opportunities. SRTS funding is sometimes utilized for trail projects and should be investigated as a secondary source of funding for the Black Creek Trail for those areas within the two mile radius of schools.

State Sources

Clean Air / Clean Water Bond Act and the Environmental Protection Fund

The 1996 Clean Air / Clean Water Bond Act approved \$1.75 billion in bond funding for environmental protection and enhancement projects, including projects that protect and enhance air quality, such as multi-use trails. The 1993 Environmental Protection Act approved the creation of the Environmental Protection Fund (EPF), which established a dedicated funding mechanism to provide critical funding for the Department of Environmental Conservation, the Office of Parks, Recreation and Historic Preservation, and grants to local governments and non -profit organizations. Since 2011, EPF funding has been made available through the NYS Consolidated Funding Application Process (<https://apps.cio.ny.gov/apps/cfa/>), which consolidates funding applications for numerous state programs through a single, on-line system. Funding through the EPF for most communities requires a 50 percent local match and the project must be completed on publicly-controlled land. Funding from the EPF would be most competitive for portions of the Black Creek Trail in designated County and local parks. In 2012, EPF funding for projects was capped at \$500,000.

State Multi-Modal Program

The State Multi-Modal Program provides funding for authorized port, airport and local highway and bridge projects. State Multi-Modal funds can be used to finance project costs for the construction, reconstruction, improvement, reconditioning and preservation of county, town, city and village roads, highways, parkways and bridges. All Multi-Modal projects must have a ten year "bondable" service life

and must be for public transportation or freight transportation purposes. Multi-Modal funding cannot be used for the mandated share of a federally funded project, and funding is reimbursed after project completion. While trails are not an eligible project type, related improvements in a highway right-of-way, such as new sidewalks, paved shoulders, bicycle lanes, and traffic control/safety devices may be eligible for State Multi-Modal Program funding. These projects must have a primary public transportation objective and demonstrate a direct benefit to a local highway or street, and therefore would be limited to on-road components of the Black Creek Trail.

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) or a line item in a community's annual budget and /or Capital Improvement Program (CIP). Local revenues for trail development have also been raised in some communities through property tax, sales tax, or bond measures. Additionally, development impact fees levied by a municipality may also be allocated to capital trail improvements per local body. Local communities have also developed trails through the allocation of staff time, also known as force account work, to build trails or provide certain trail building or maintenance activities that are then augmented by paid services from private contractors and/or unpaid volunteers.

Private and Community 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. Furthermore, 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 Active Living Program). 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 Black Creek 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.

Bikes Belong Coalition

This is a membership organization founded by bicycle industry leaders with the mission of "putting more people on bikes more often." Bikes Belong Coalition pursues this goal by distributing grants for bicycle facility, education, and capacity projects. Bikes Belong Coalition Grants are small funding sources that assist communities and agencies in the organization and development of bicycle trails and pathways. This grant source is often used to help fund a portion of the required match to access federal transportation funds. More information on this organization can be found at their website at www.bikebelong.org.

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 like benches, information kiosks, etc. An excellent New York State example of local private fundraising efforts is the Cayuga Waterfront Trail in Ithaca. For more information about the trail, please visit <http://cayugawaterfronttrail.com>.

Finally, a significant number of trails have been developed and maintained, particularly in the Rochester-Genesee-Finger Lakes Region, 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 generous businesses and professionals.

Funding Conclusions

There are numerous opportunities for implementation funding for trail initiatives. It is likely that the Black Creek Trail will need funding from multiple sources at the federal, state, local, and private levels. The implementation of the trail on a segment specific basis, with the design of the segment tied directly to the funding source for construction, will be required to complete the schedule of improvements to link these three communities. A small amount of local or private funding, in conjunction with volunteerism and donated time and materials, can leverage state and federal funding to make the Black Creek Trail a reality.

Appendix A: Report Maps

- Existing Trail
- Snowmobile Trail
- BlackCreek
- Municipal Boundaries
- Black Creek Trail Corridor
- MatchLine

- Existing Land Use (2010)
- Agriculture
 - Residential
 - Vacant
 - Commercial
 - Recreation & Entertainment

- Public Services
- Industrial
- Community Services
- Parks & Conservation
- No Data

BLACK CREEK TRAIL

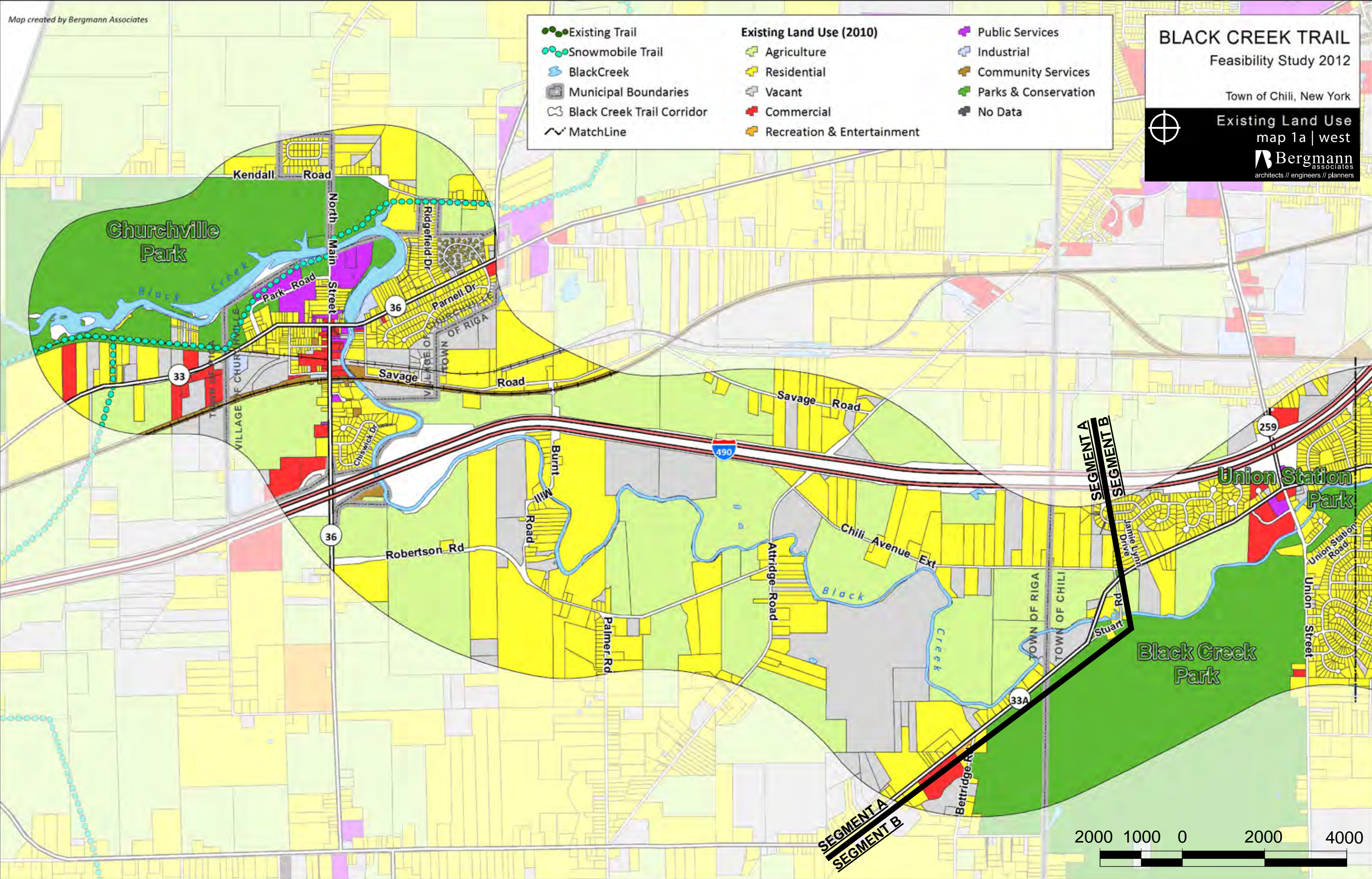
Feasibility Study 2012

Town of Chili, New York



Existing Land Use
map 1a | west

Bergmann
associates
architects // engineers // planners



BLACK CREEK TRAIL

Feasibility Study 2012

Town of Chili, New York

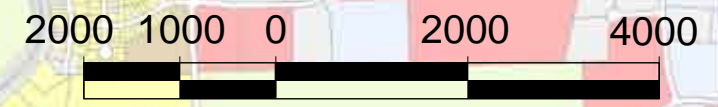
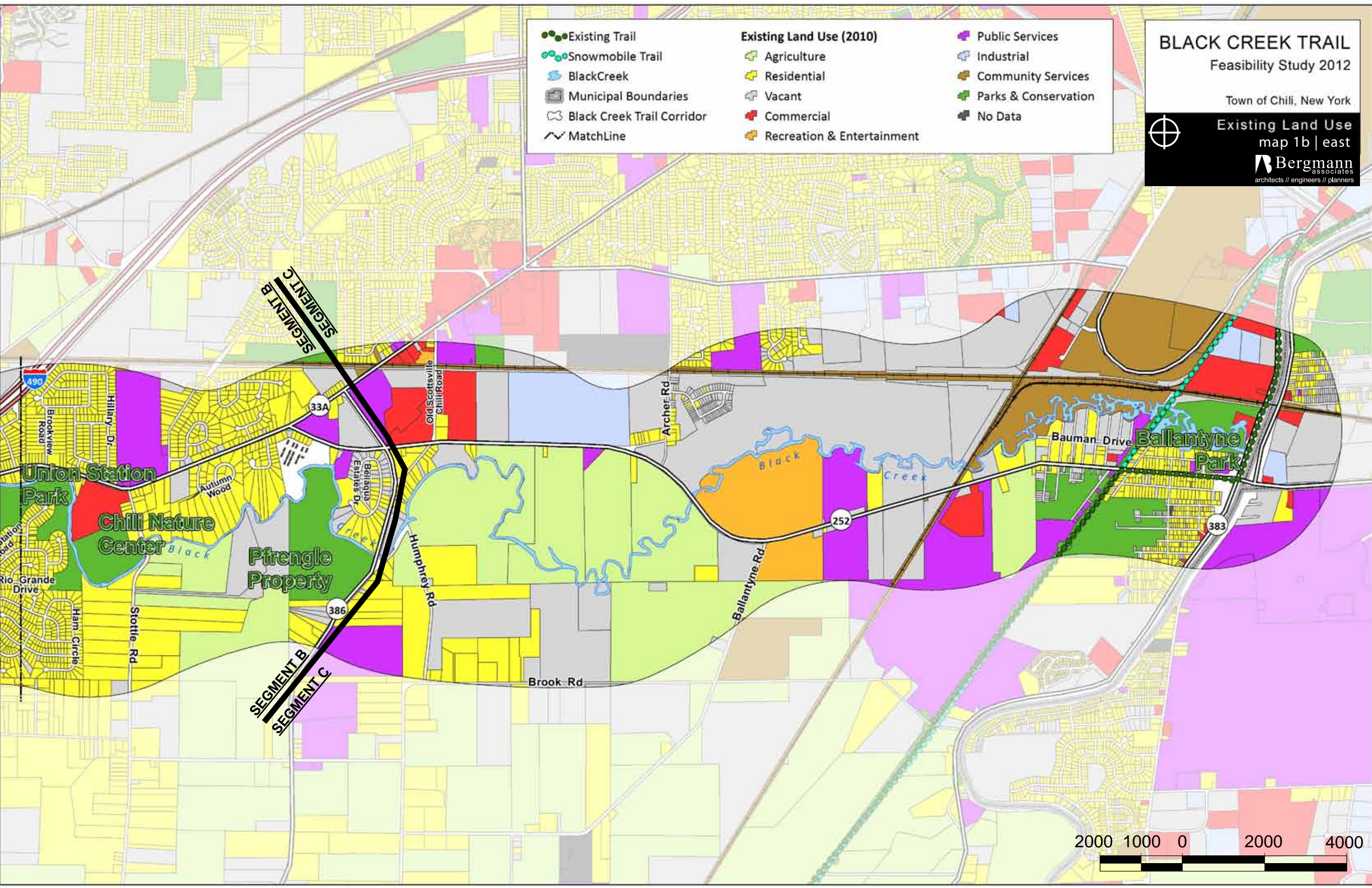
Existing Land Use
map 1b | east

Bergmann
associates
architects // engineers // planners

- Existing Trail
- Snowmobile Trail
- BlackCreek
- Municipal Boundaries
- Black Creek Trail Corridor
- MatchLine

- ### Existing Land Use (2010)
- Agriculture
 - Residential
 - Vacant
 - Commercial
 - Recreation & Entertainment

- Public Services
- Industrial
- Community Services
- Parks & Conservation
- No Data



Existing Trail

Snowmobile Trail

BlackCreek

Municipal Boundaries

Black Creek Trail Corridor

MatchLine

Land Cover (2006)

Low Intensity Development

Agriculture

Forest

High Intensity Development

Grassland/Herbaceous

Open Water

Wetland

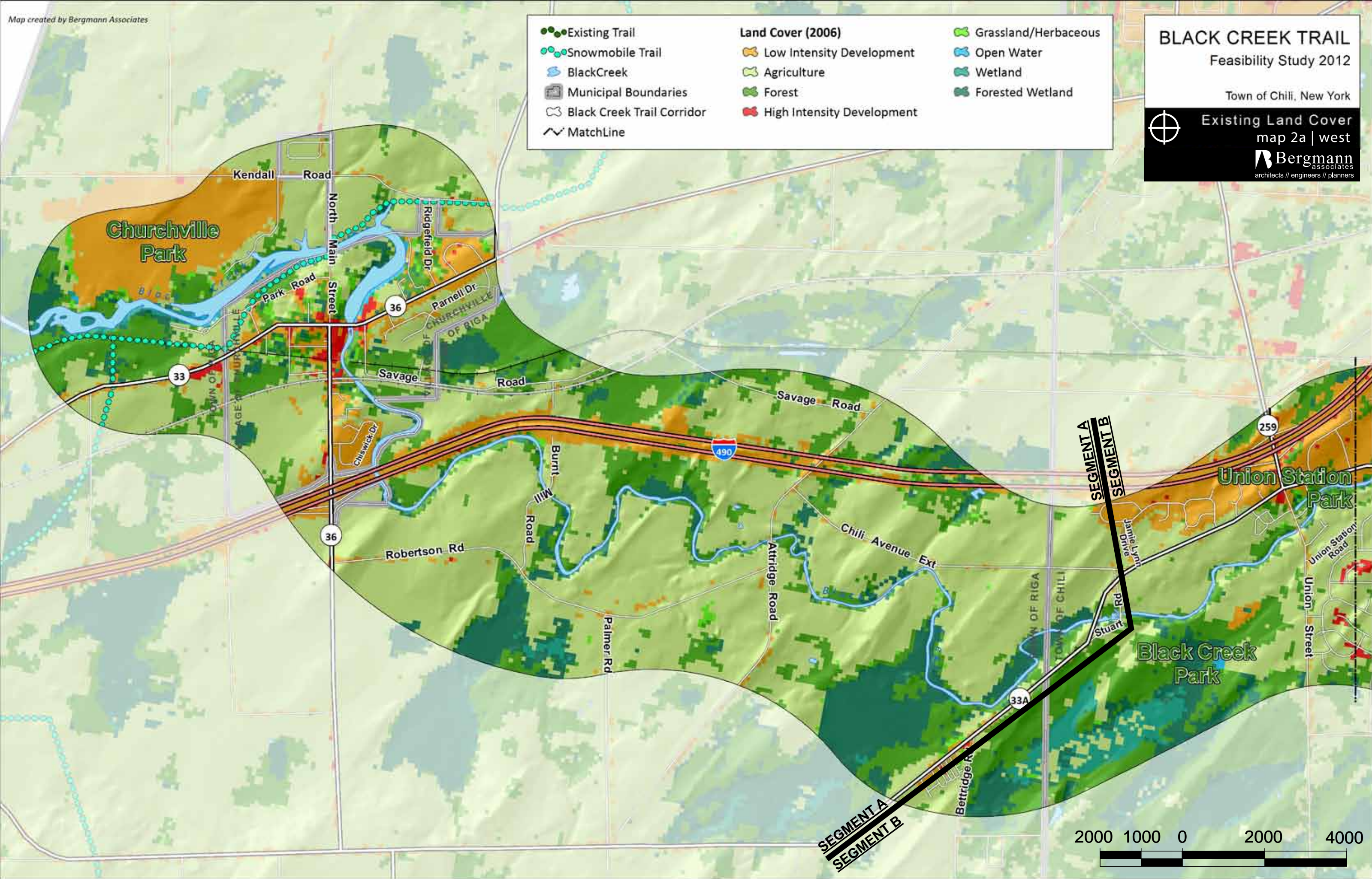
Forested Wetland

BLACK CREEK TRAIL
Feasibility Study 2012

Town of Chili, New York

Existing Land Cover
map 2a | west

Bergmann
associates
architects // engineers // planners



BLACK CREEK TRAIL

Feasibility Study 2012

Town of Chili, New York



Existing Land Cover
map 2b | east

Bergmann
associates
architects // engineers // planners

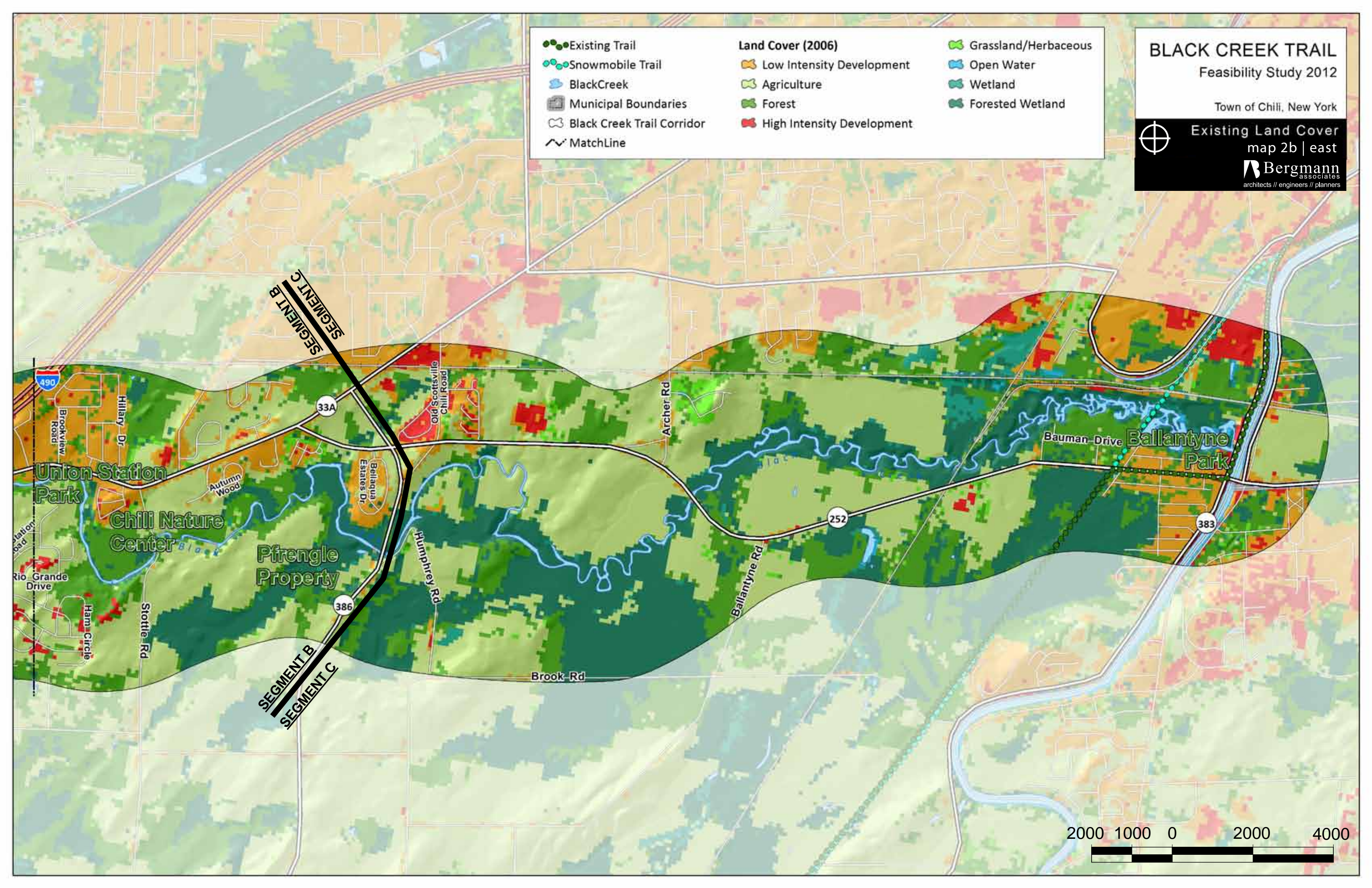
- Existing Trail
- Snowmobile Trail
- BlackCreek
- Municipal Boundaries
- Black Creek Trail Corridor
- MatchLine

Land Cover (2006)

- Low Intensity Development
- Agriculture
- Forest
- High Intensity Development

Grassland/Herbaceous

- Open Water
- Wetland
- Forested Wetland



Existing Trail

Snowmobile Trail

BlackCreek

Municipal Boundaries

MatchLine

Black Creek Trail Corridor

Public-Owned Parcels*

Privately Owned Parcels

*Includes lands owned by the Genesee Land Trust

BLACK CREEK TRAIL

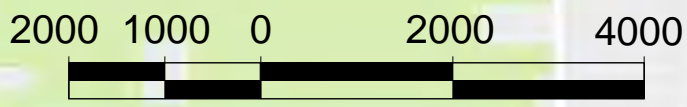
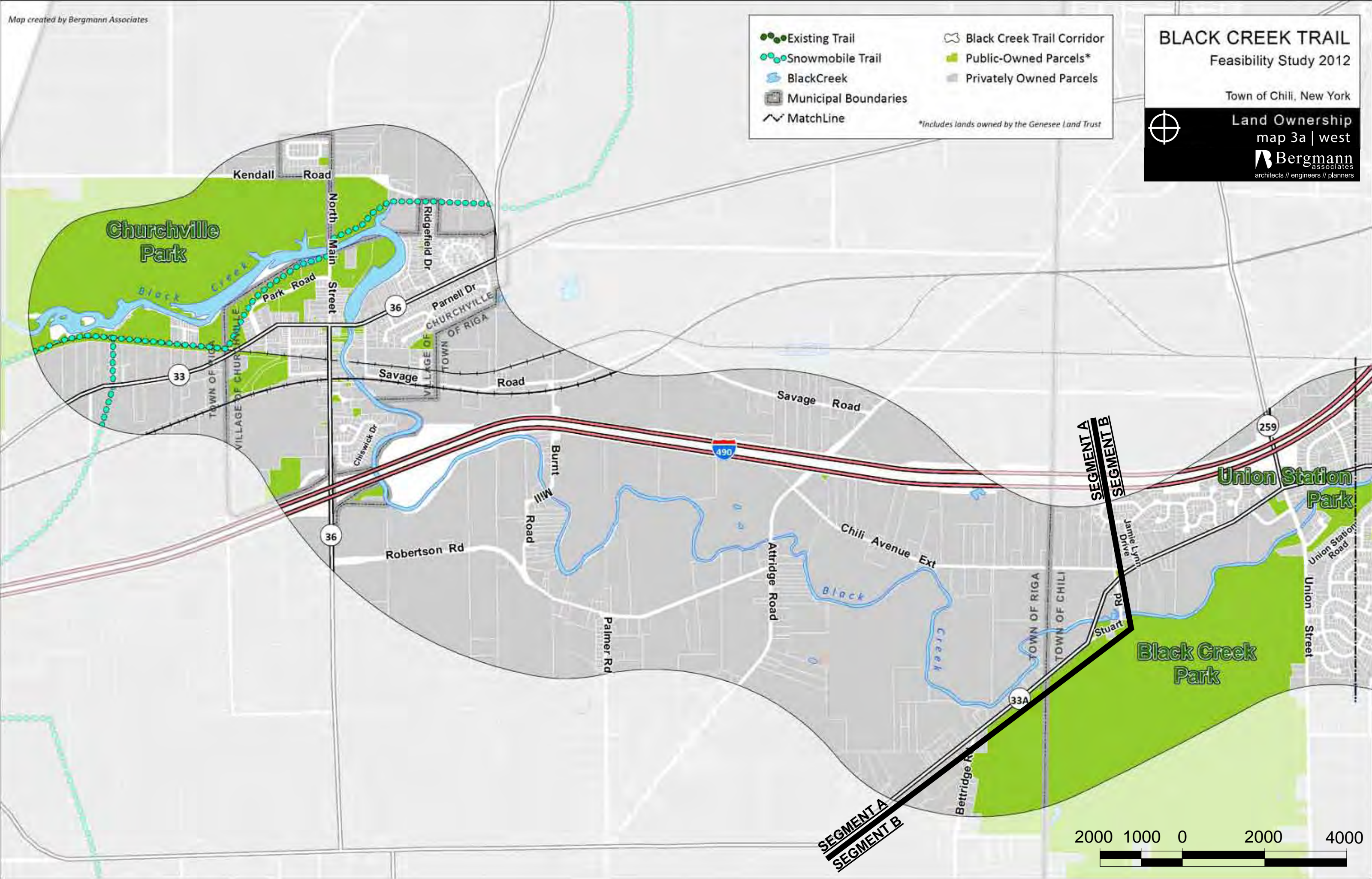
Feasibility Study 2012

Town of Chili, New York

Land Ownership

map 3a | west

Bergmann
associates
architects // engineers // planners



BLACK CREEK TRAIL

Feasibility Study 2012

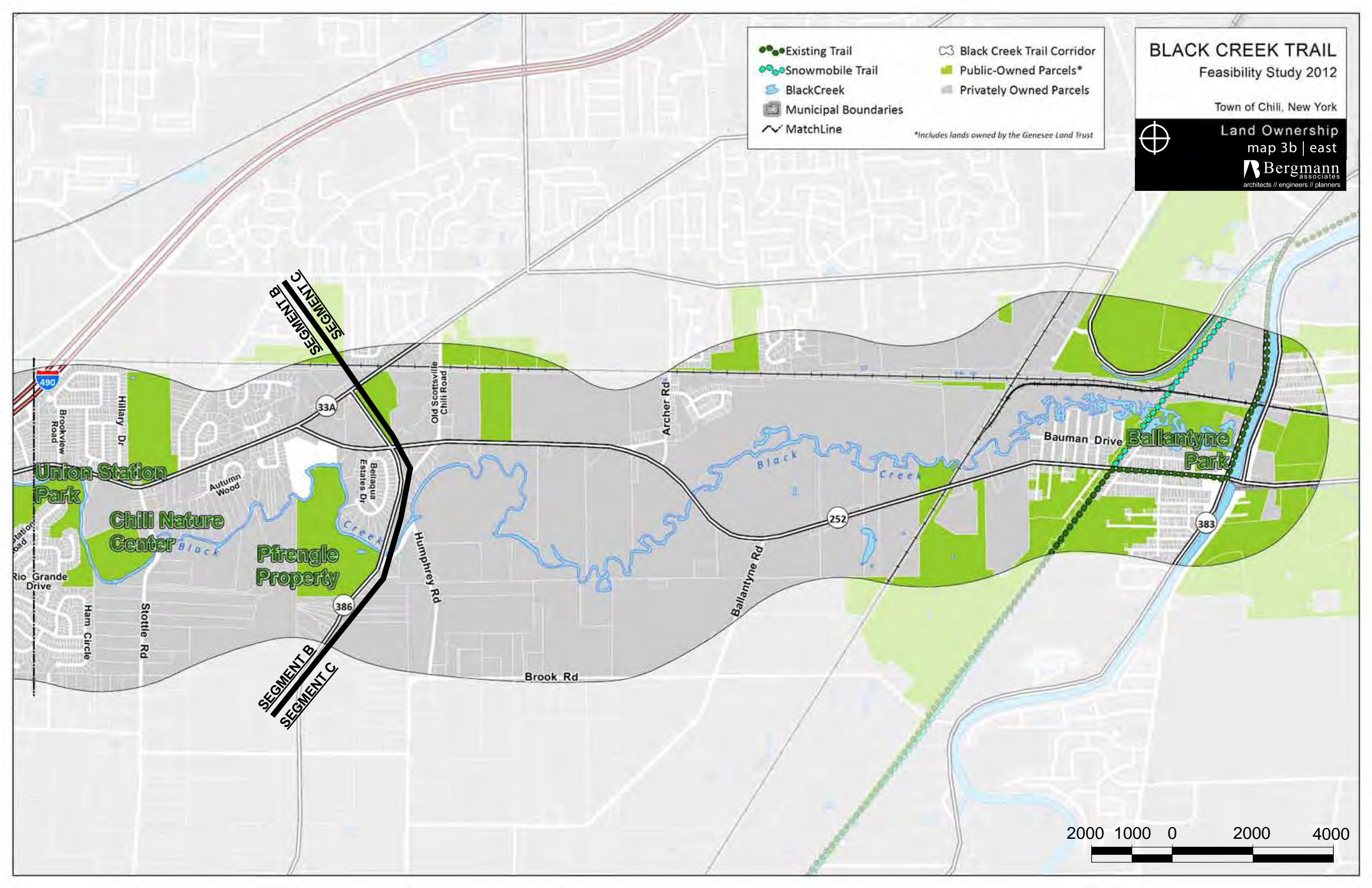
Town of Chili, New York



Land Ownership
map 3b | east

Bergmann
associates
architects // engineers // planners

- Existing Trail
 - Snowmobile Trail
 - BlackCreek
 - Municipal Boundaries
 - MatchLine
 - Black Creek Trail Corridor
 - Public-Owned Parcels*
 - Privately Owned Parcels
- *Includes lands owned by the Genesee Land Trust



Black Creek Trail Corridor

Existing Trail

Snowmobile Trail

BlackCreek

Municipal Boundaries

MatchLine

NYSDEC Wetlands

NWI Wetlands

1-Percent Floodzone

0.5 Percent Floodzone

Elevation

High : 202.2

Low : 161.1

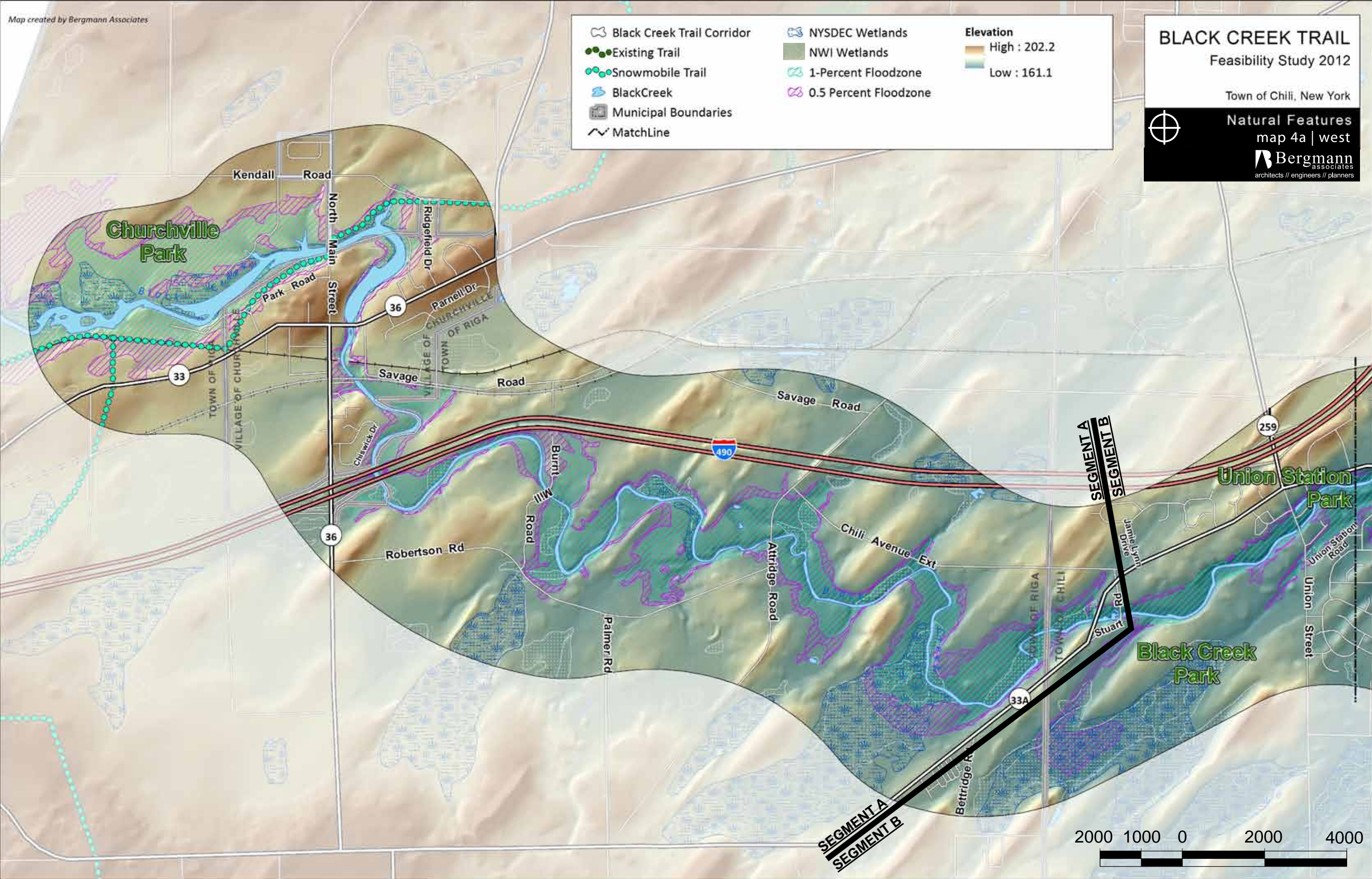
BLACK CREEK TRAIL

Feasibility Study 2012

Town of Chili, New York

Natural Features
map 4a | west

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BLACK CREEK TRAIL

Feasibility Study 2012

Town of Chili, New York



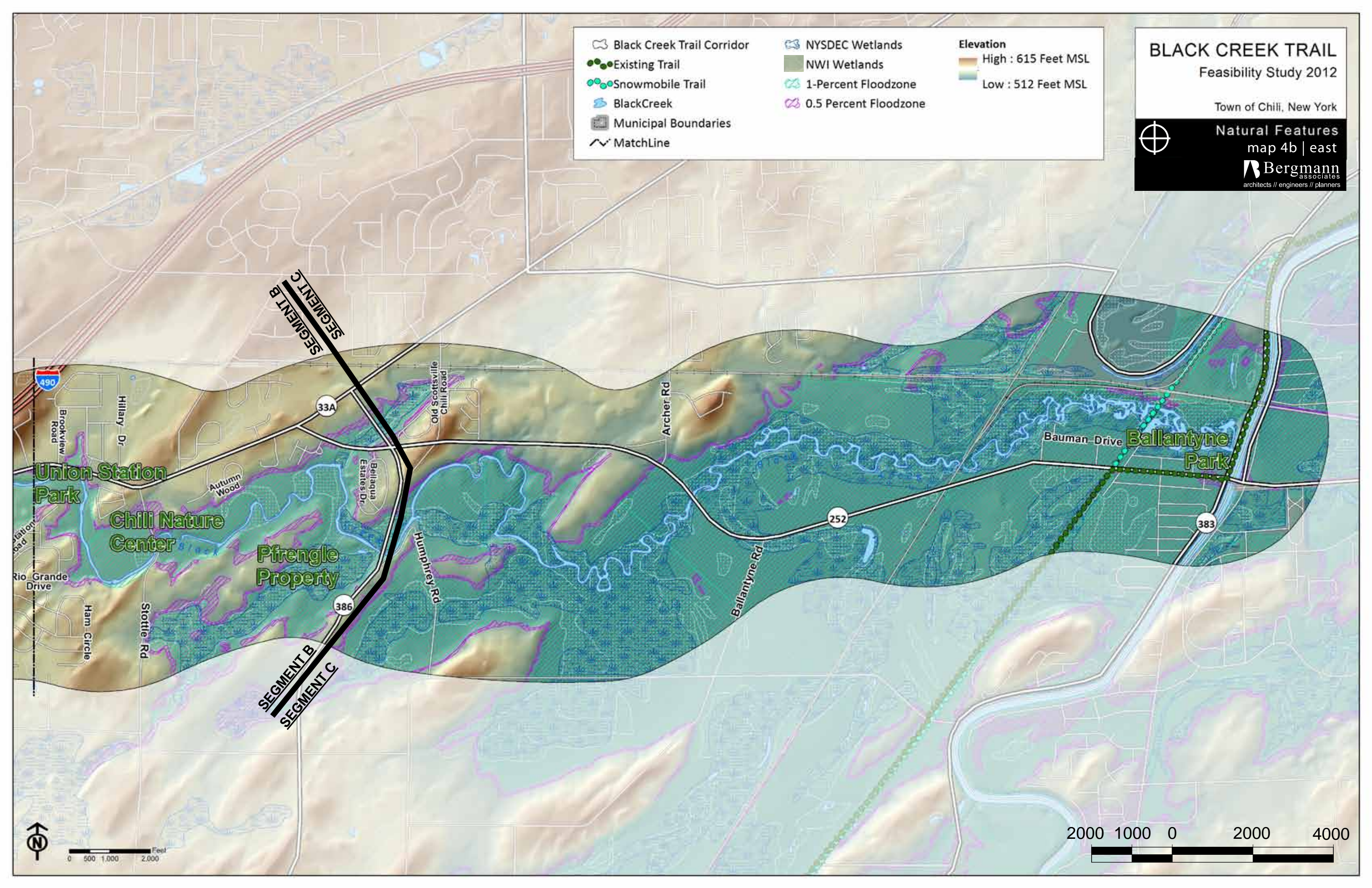
Natural Features
map 4b | east

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- Black Creek Trail Corridor
- Existing Trail
- Snowmobile Trail
- BlackCreek
- Municipal Boundaries
- MatchLine

- NYSDEC Wetlands
- NWI Wetlands
- 1-Percent Floodzone
- 0.5 Percent Floodzone

Elevation
High : 615 Feet MSL
Low : 512 Feet MSL



Black Creek Trail Corridor

Existing Trail

Snowmobile Trail

BlackCreek

Municipal Boundaries

MatchLine

Erosion Potential

Slight

Moderate

Severe

Very Severe

Not rated

No data provided

BLACK CREEK TRAIL

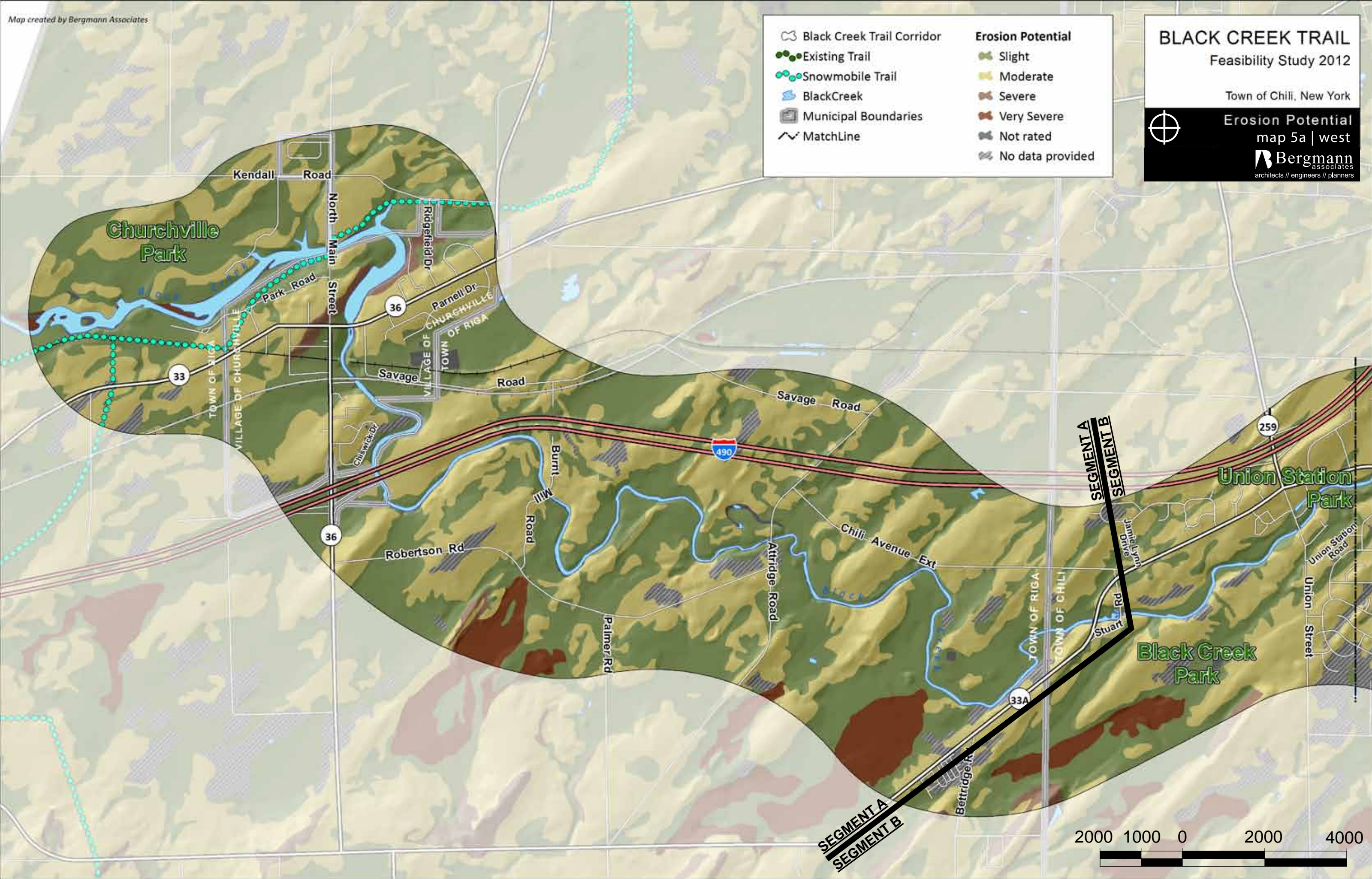
Feasibility Study 2012

Town of Chili, New York

Erosion Potential

map 5a | west

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BLACK CREEK TRAIL

Feasibility Study 2012

Town of Chili, New York

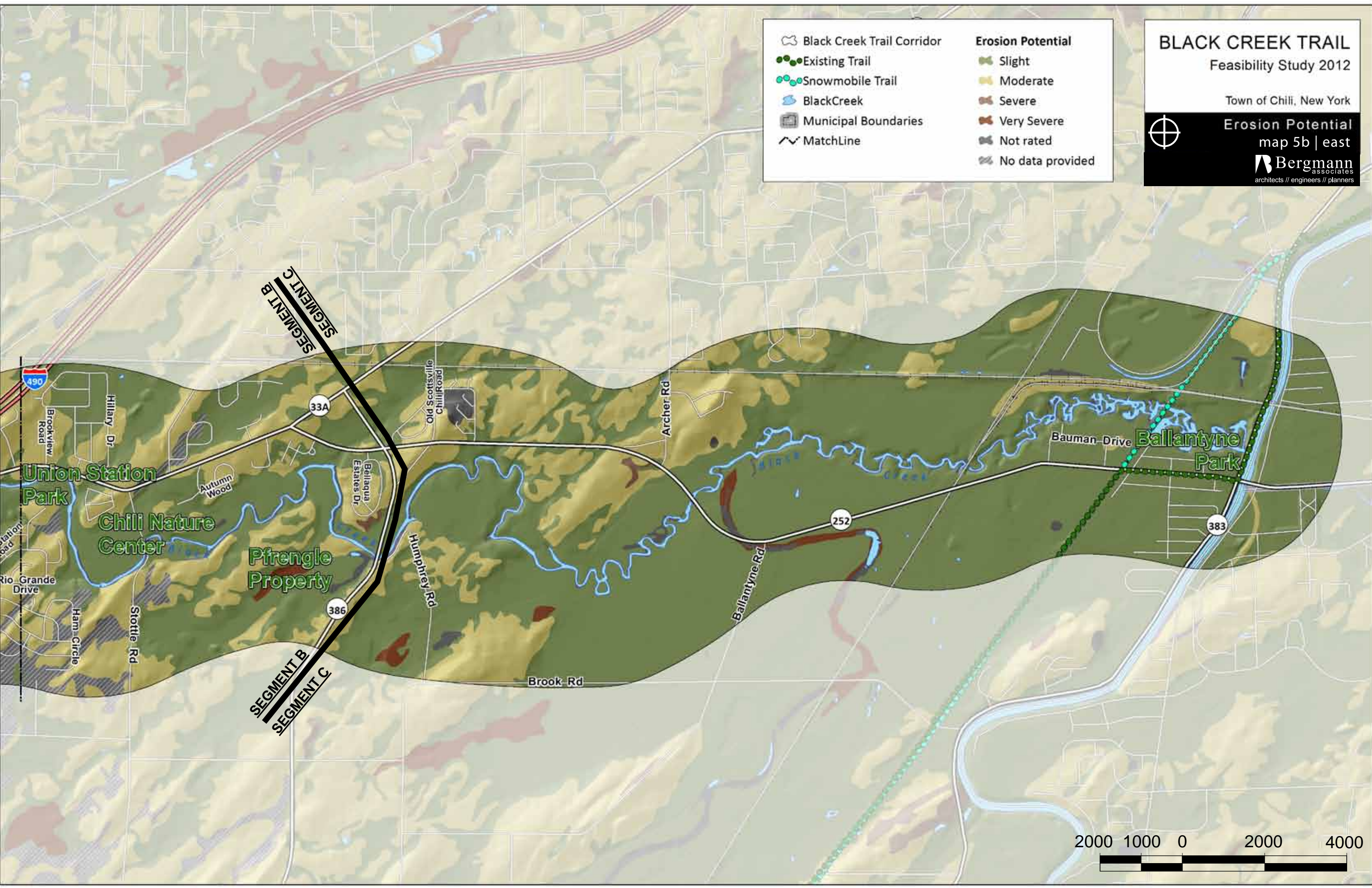


Erosion Potential
map 5b | east

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- Black Creek Trail Corridor
- Existing Trail
- Snowmobile Trail
- BlackCreek
- Municipal Boundaries
- MatchLine

- Erosion Potential**
- Slight
 - Moderate
 - Severe
 - Very Severe
 - Not rated
 - No data provided



- Black Creek
- Black Creek Trail Corridor
- Parcel Boundaries
- Municipal Boundaries
- MatchLine

- RTS Bus Stops
- Existing Trail
- Snowmobile Trail
- Estimated AADT*

- Roads by Jurisdiction
- Interstate
 - State Road
 - County Road
 - Local Road

*Estimated Annual Average Daily Traffic (AADT) for 2010 provided by the NYSDOT Traffic Viewer

BLACK CREEK TRAIL

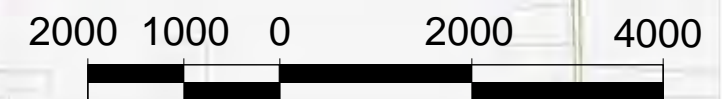
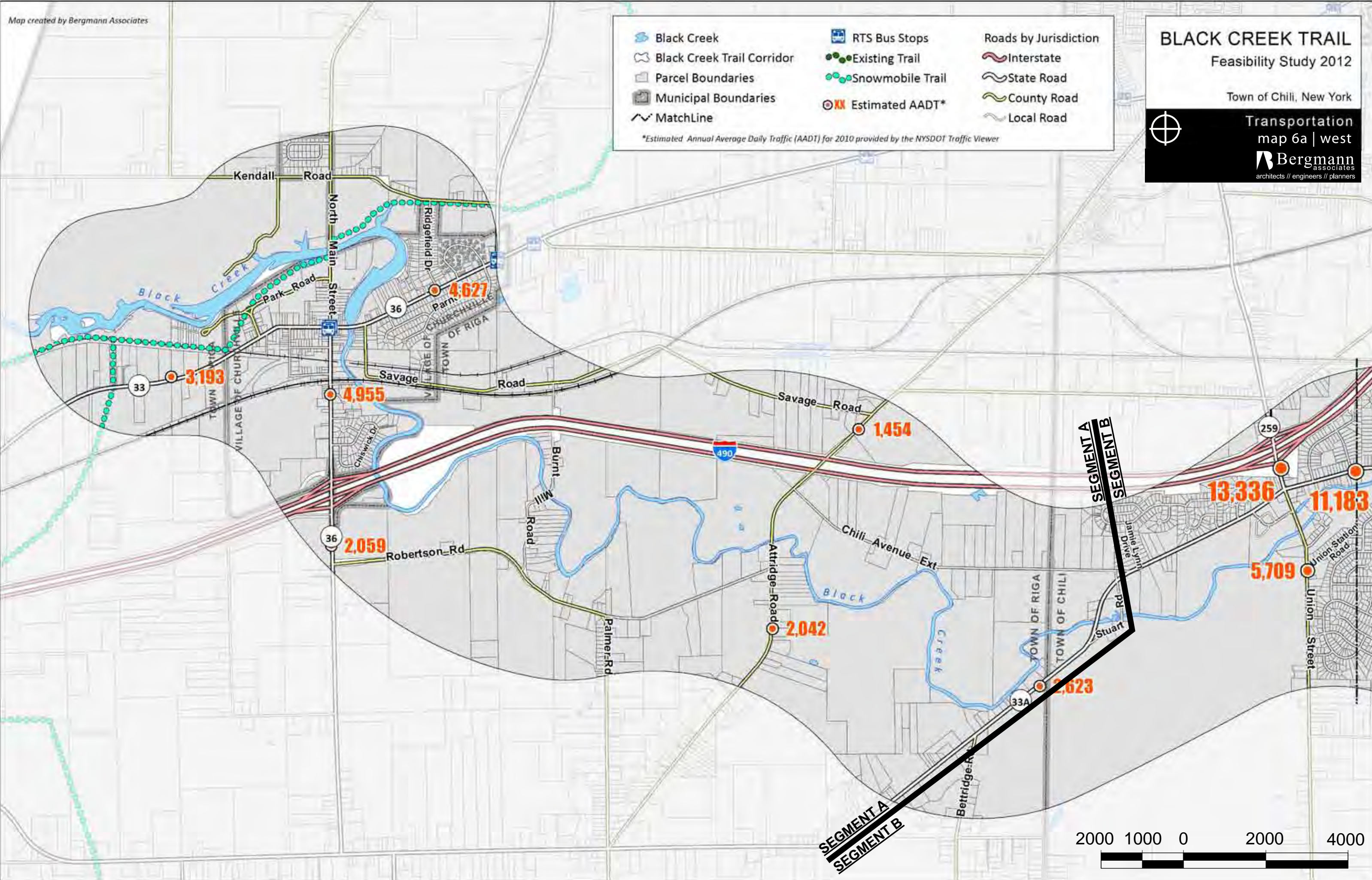
Feasibility Study 2012

Town of Chili, New York



Transportation
map 6a | west

Bergmann
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BLACK CREEK TRAIL

Feasibility Study 2012

Town of Chili, New York



Transportation
map 6b | east

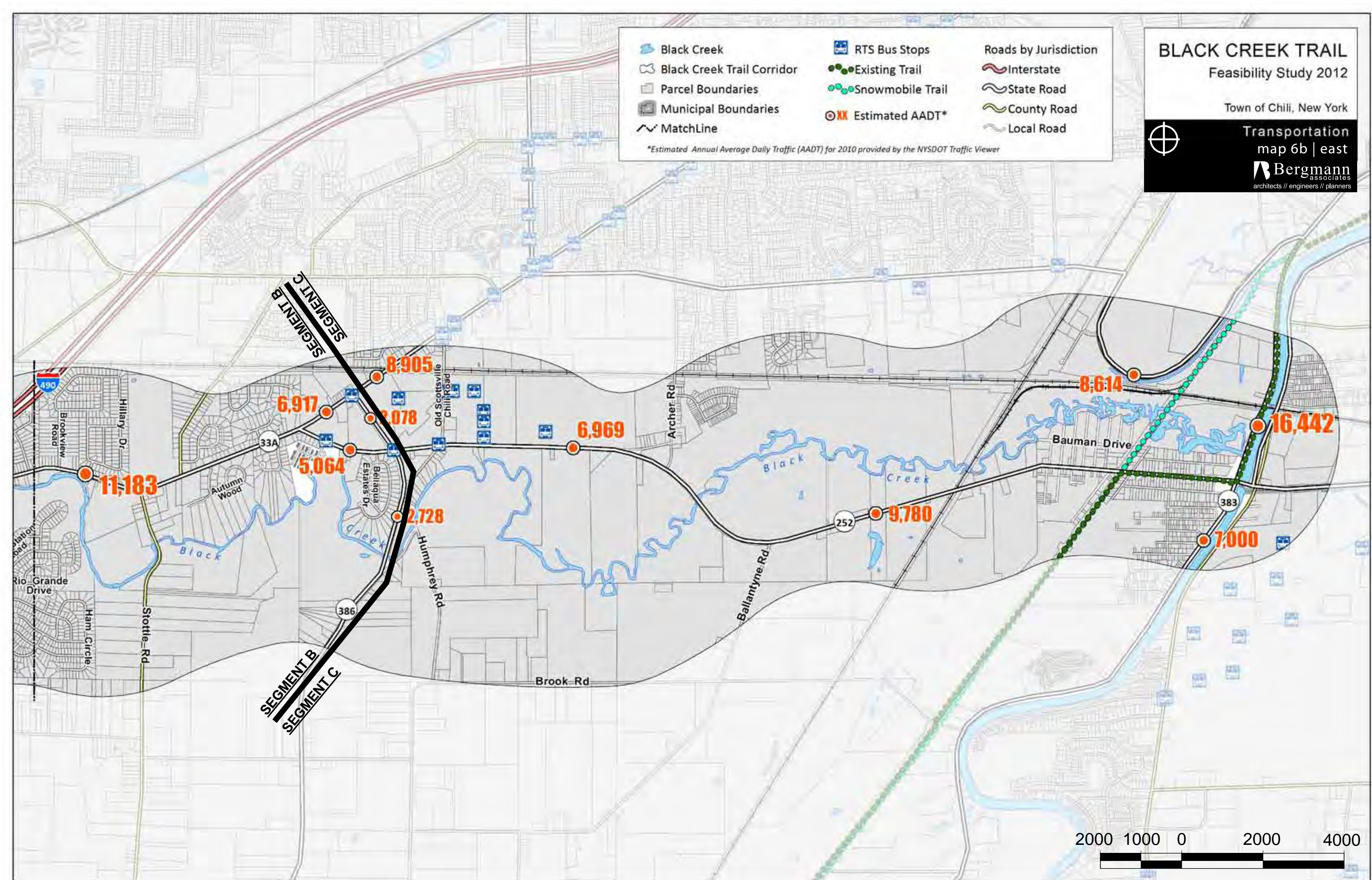
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- Black Creek
- Black Creek Trail Corridor
- Parcel Boundaries
- Municipal Boundaries
- MatchLine

- RTS Bus Stops
- Existing Trail
- Snowmobile Trail
- Estimated AADT*

- Roads by Jurisdiction
- Interstate
- State Road
- County Road
- Local Road

*Estimated Annual Average Daily Traffic (AADT) for 2010 provided by the NYSDOT Traffic Viewer



BLACK CREEK TRAIL

Feasibility Study 2012

Town of Chili, New York

Population Characteristics
map 7a | west

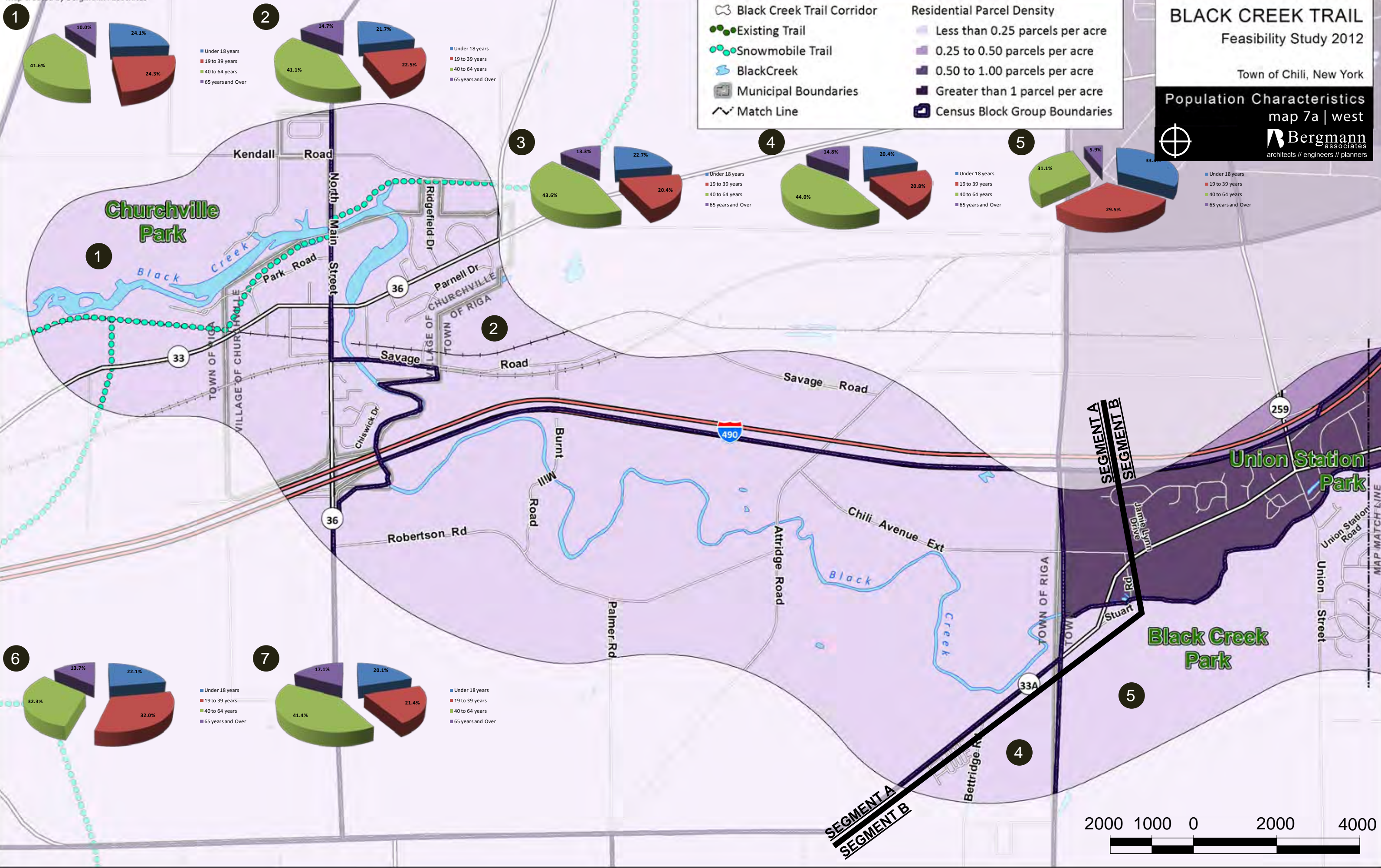
Bergmann
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- Black Creek Trail Corridor
- Existing Trail
- Snowmobile Trail
- BlackCreek
- Municipal Boundaries
- Match Line

Residential Parcel Density

- Less than 0.25 parcels per acre
- 0.25 to 0.50 parcels per acre
- 0.50 to 1.00 parcels per acre
- Greater than 1 parcel per acre
- Census Block Group Boundaries



BLACK CREEK TRAIL

Feasibility Study 2012

Town of Chili, New York

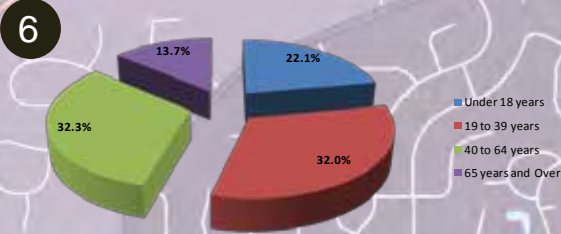
Population Characteristics
map 7b | east

Bergmann
associates
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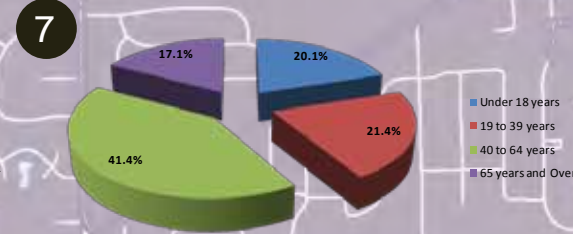
- Black Creek Trail Corridor
- Existing Trail
- Snowmobile Trail
- BlackCreek
- Municipal Boundaries
- Match Line

- ### Residential Parcel Density
- Less than 0.25 parcels per acre
 - 0.25 to 0.50 parcels per acre
 - 0.50 to 1.00 parcels per acre
 - Greater than 1 parcel per acre
 - Census Block Group Boundaries

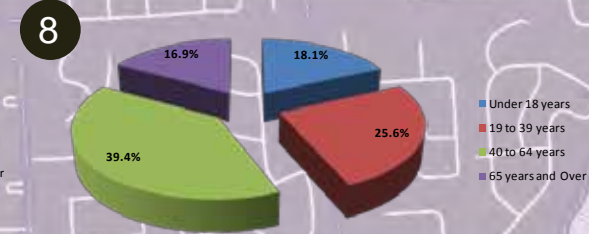
- Under 18 years
- 19 to 39 years
- 40 to 64 years
- 65 years and Over



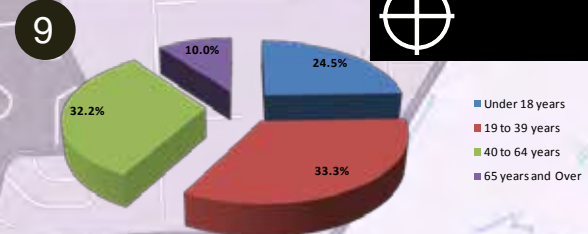
- Under 18 years
- 19 to 39 years
- 40 to 64 years
- 65 years and Over



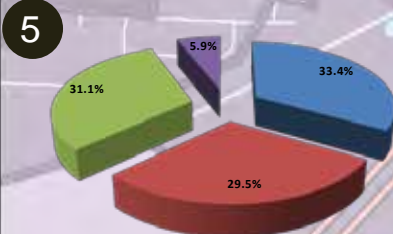
- Under 18 years
- 19 to 39 years
- 40 to 64 years
- 65 years and Over



- Under 18 years
- 19 to 39 years
- 40 to 64 years
- 65 years and Over



- Under 18 years
- 19 to 39 years
- 40 to 64 years
- 65 years and Over



MAP MATCH LINE

490

Brookview Road

Hillary Dr

Union Station Park

Chili Nature Center

Autumn Wood

Black Creek

Pfrengele Property

Bellaqua Estates Dr

Stottle Rd

Ham Circle

Rio Grande Drive

SEGMENT C

SEGMENT B

SEGMENT C

33A

386

Old Scottsville Chili Road

Humphrey Rd

Archer Rd

Ballantyne Rd

252

383

Black Creek

Bauman Drive

Ballantyne Park

12

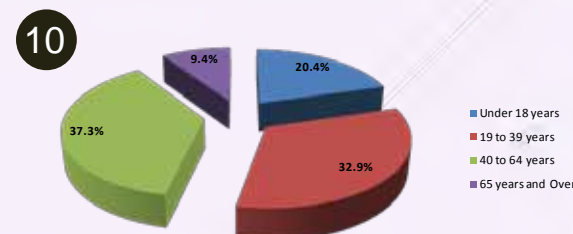
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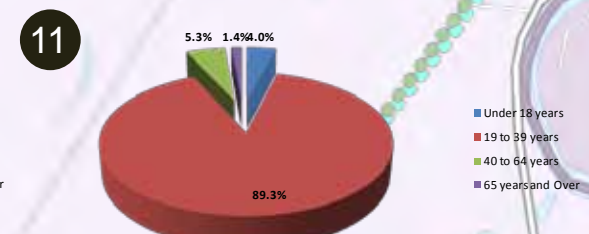
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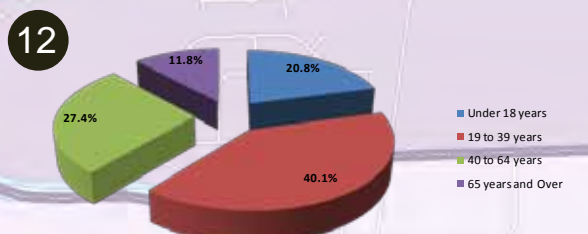
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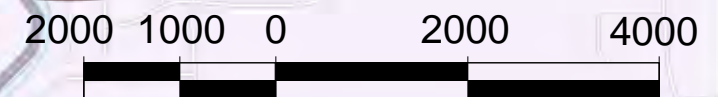
- Under 18 years
- 19 to 39 years
- 40 to 64 years
- 65 years and Over



- Under 18 years
- 19 to 39 years
- 40 to 64 years
- 65 years and Over



- Under 18 years
- 19 to 39 years
- 40 to 64 years
- 65 years and Over



 Black Creek Trail Corridor

 Existing Trail

 Snowmobile Trail

 BlackCreek


 Municipal Boundaries

 Match Line

BLACK CREEK TRAIL


Feasibility Study 2012

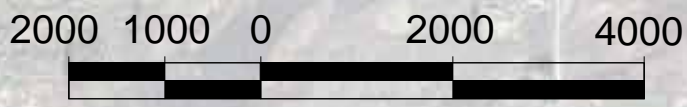
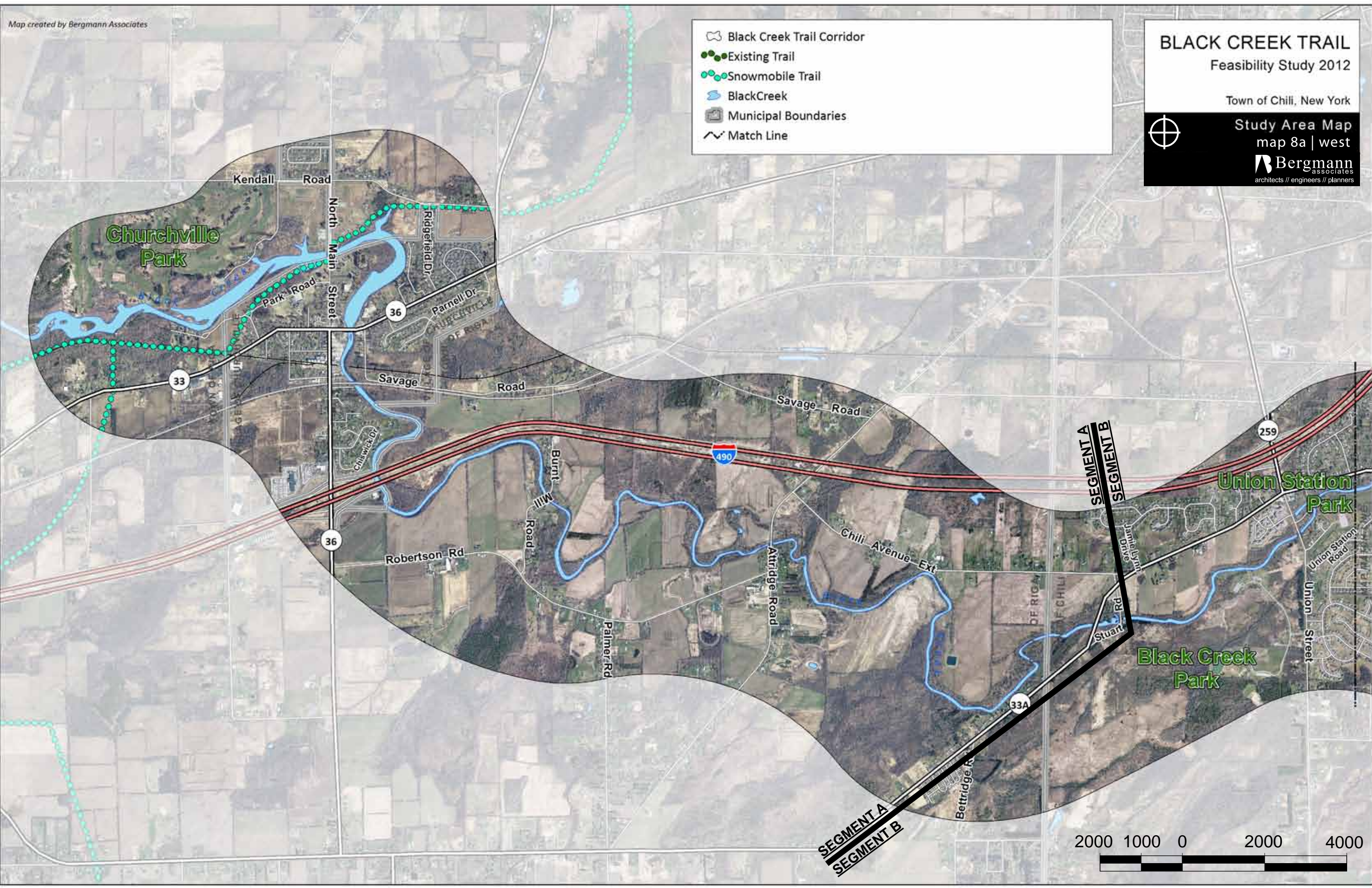
Town of Chili, New York



Study Area Map

map 8a | west

 Bergmann
associates
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BLACK CREEK TRAIL

Feasibility Study 2012

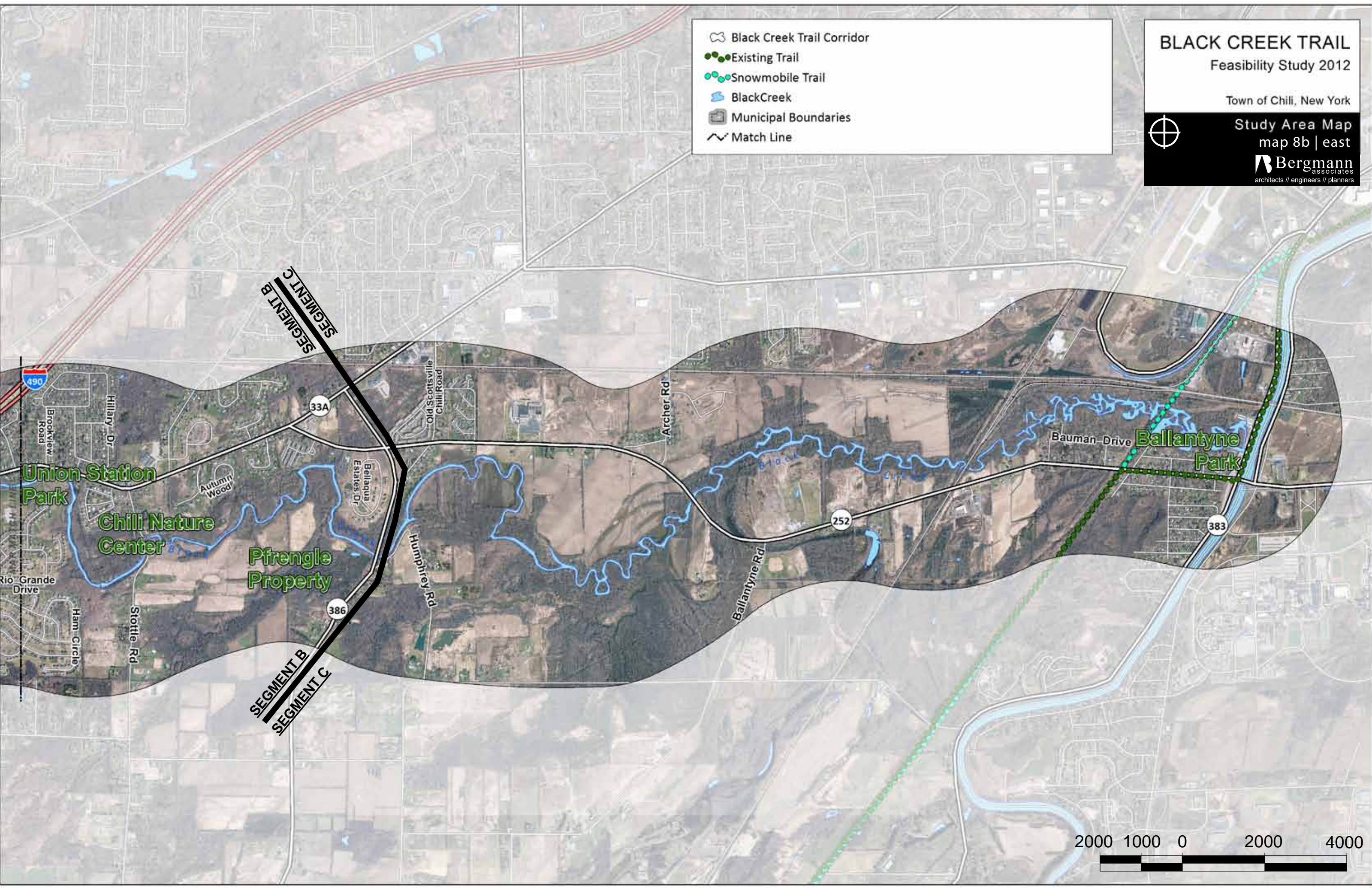
Town of Chili, New York



Study Area Map
map 8b | east

Bergmann
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- Black Creek Trail Corridor
- Existing Trail
- Snowmobile Trail
- Black Creek
- Municipal Boundaries
- Match Line



BLACK CREEK TRAIL

Feasibility Study 2012

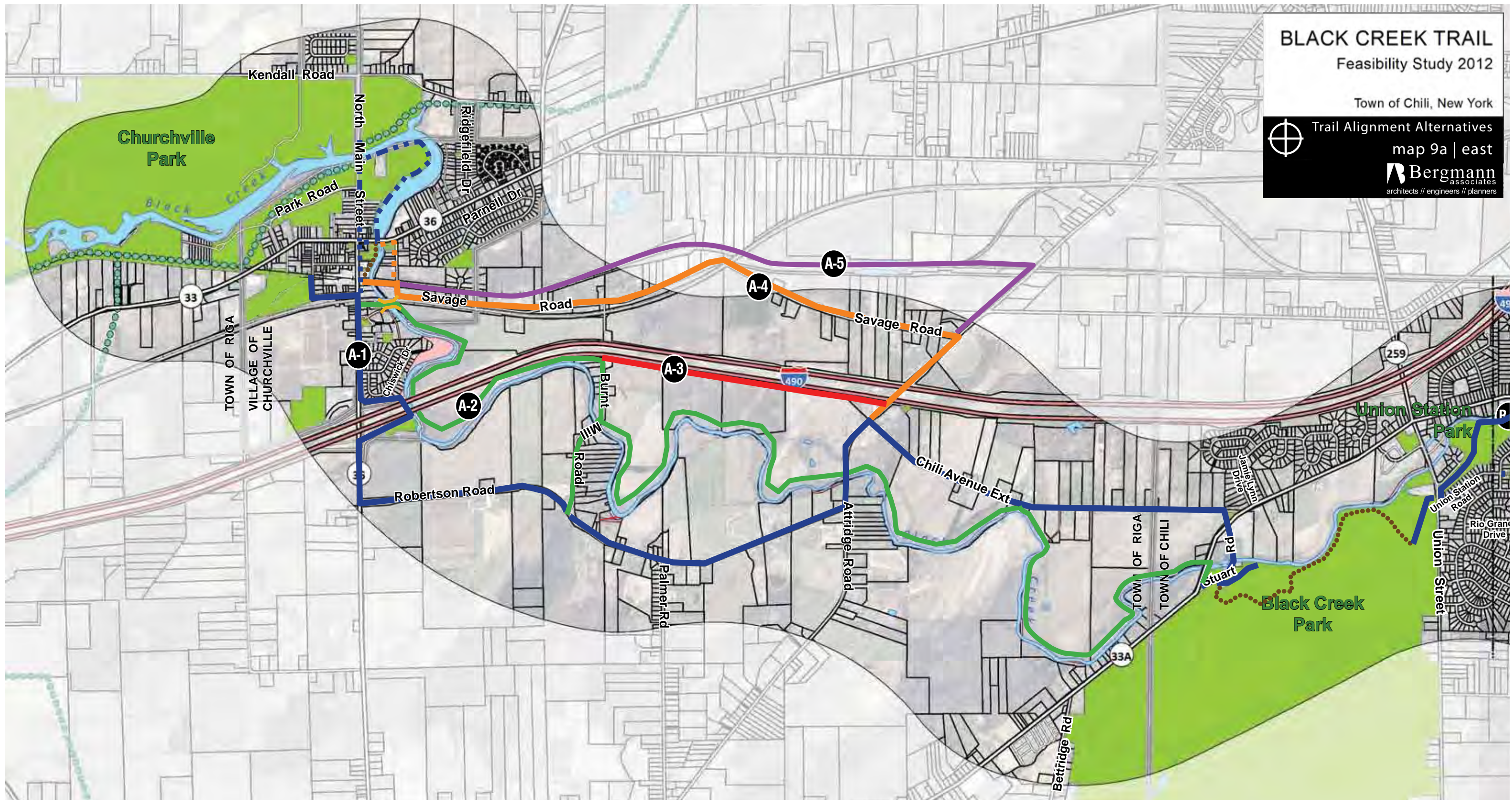
Town of Chili, New York



Trail Alignment Alternatives

map 9a | east

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Legend

- Genesee Valley Greenway
- Existing Snowmobile Trail
- Existing Trail

- Possible Alternate Trail Alignment
- Complimentary Connections

- Approximate Easement Location
- Municipal Boundary

- Potential New Pedestrian Bridge

BLACK CREEK TRAIL

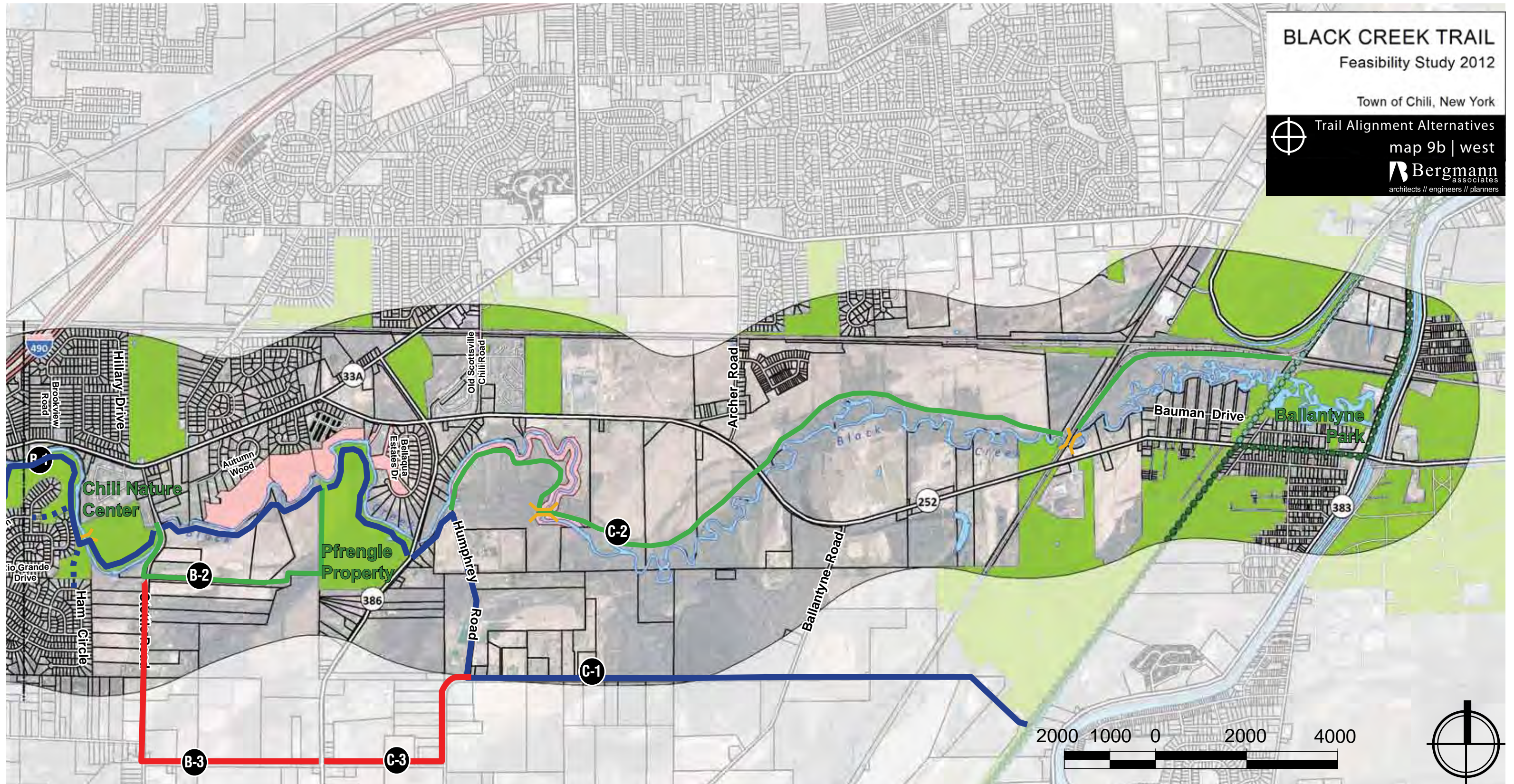
Feasibility Study 2012

Town of Chili, New York



Trail Alignment Alternatives
map 9b | west

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Legend

- Genesee Valley Greenway
- Existing Snowmobile Trail
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- Possible Alternate Trail Alignment
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- Approximate Easement Location
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BLACK CREEK TRAIL

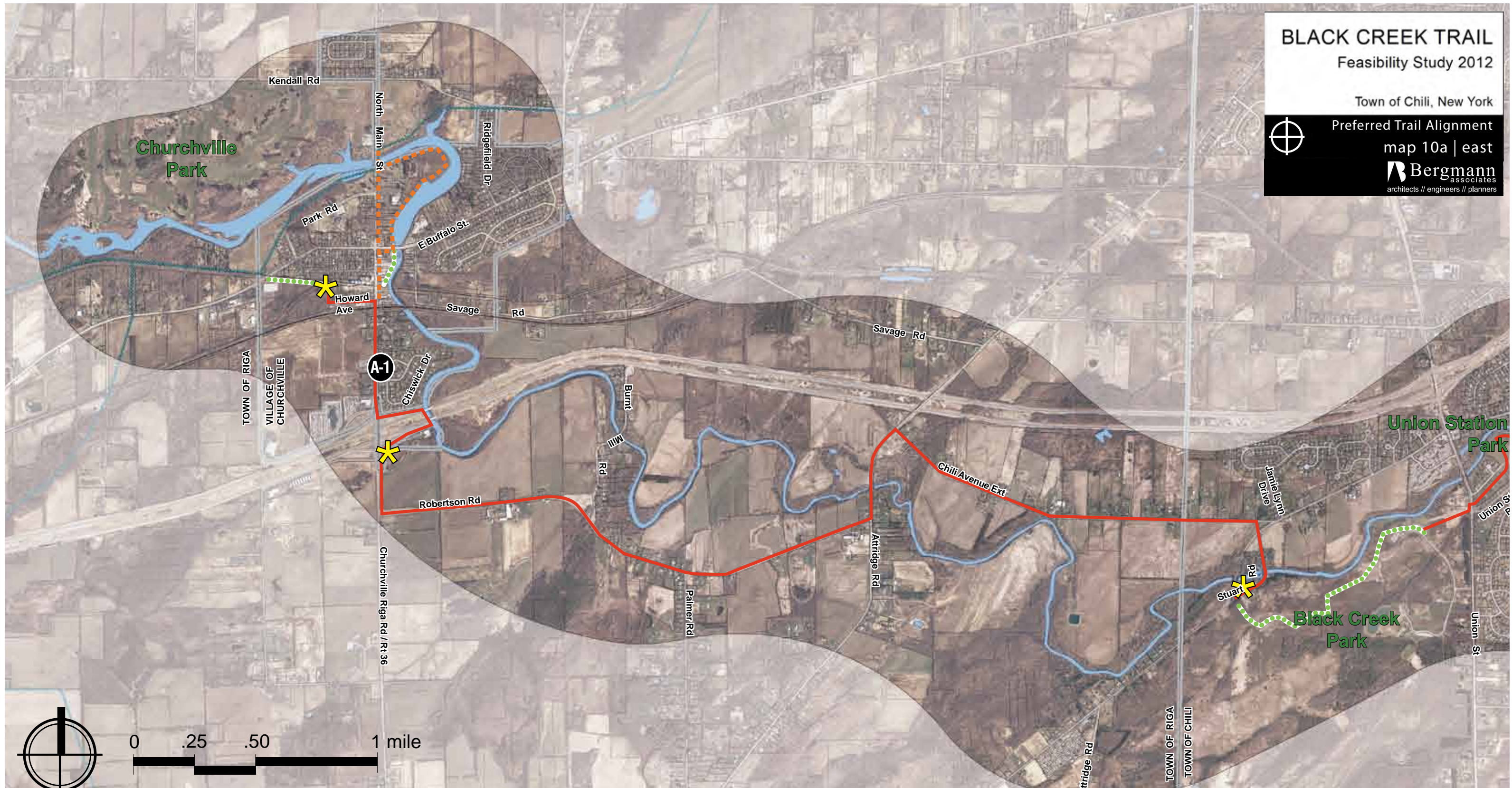
Feasibility Study 2012

Town of Chili, New York



Preferred Trail Alignment
map 10a | east

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0 .25 .50 1 mile

Legend

- Genesee Valley Greenway
- Existing Snowmobile Trail
- Existing Trails

- Preferred Trail Alignment
- Preferred (Future) Trail Alignment
- Complimentary Connections

- Approximate Easement Location
- Municipal Boundary

- Potential New Pedestrian Bridge
- Proposed Trailhead
- Existing Trailhead

BLACK CREEK TRAIL

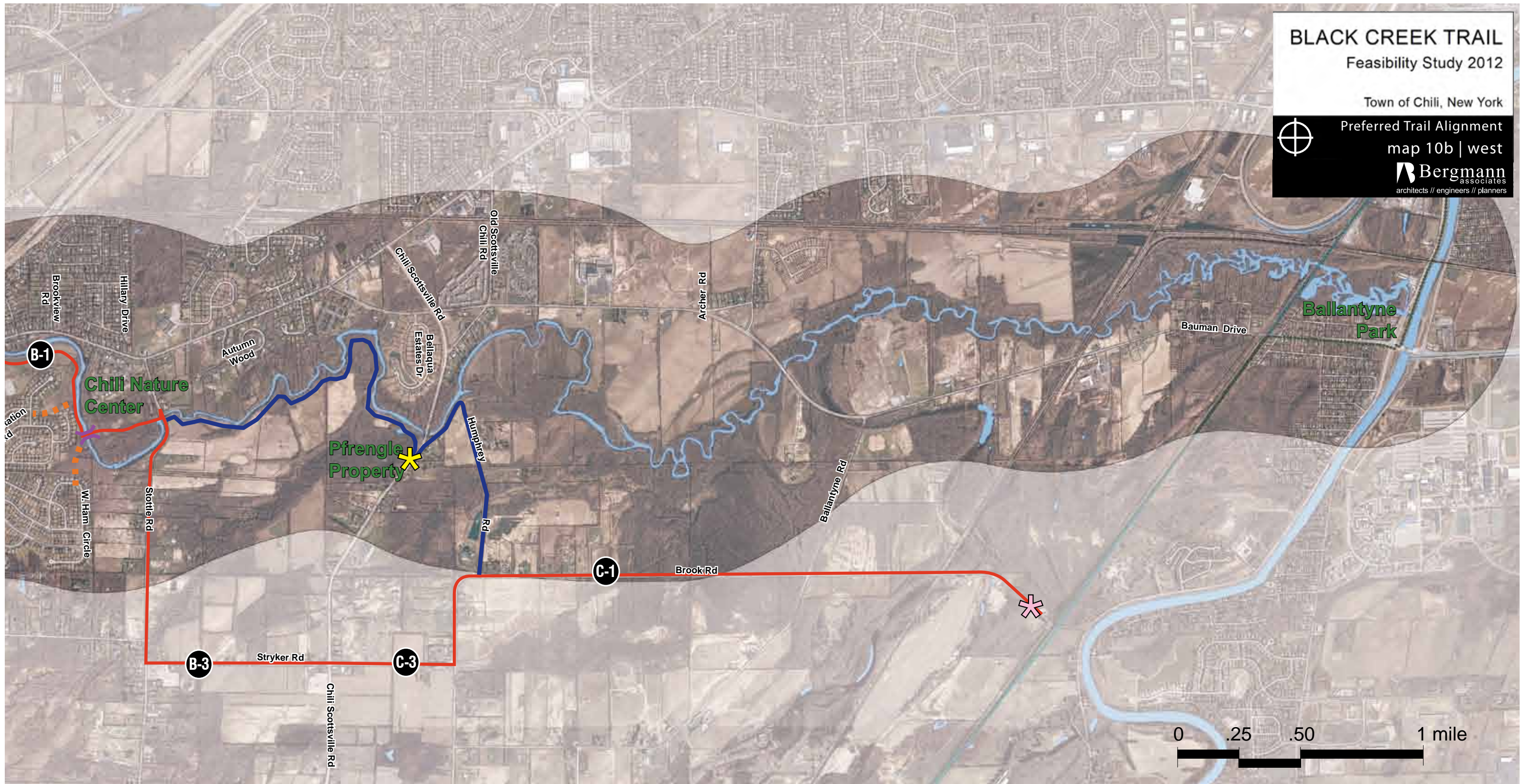
Feasibility Study 2012

Town of Chili, New York



Preferred Trail Alignment
map 10b | west

Bergmann
associates
architects // engineers // planners



Legend

- Genesee Valley Greenway
- Existing Snowmobile Trail
- Existing Trails

- Preferred Trail Alignment
- Preferred (Future) Trail Alignment
- — — Complimentary Connections

- Approximate Easement Location
- Municipal Boundary

- ⌋ Potential New Pedestrian Bridge
- ★ Proposed Trailhead
- ✱ Existing Trailhead

Appendix B: Meeting Notes

Black Creek Trail Feasibility Study

Public Meeting

May 23, 2012 • 7:00 – 9:00 PM

Churchville/Chili Middle School

Meeting Attendees

See attached sign-in sheet.

Meeting Summary

The first Public Information Meeting was held on May 23, 2012 to introduce the community to the project and review the existing conditions documentation completed for the Black Creek Trail Feasibility Study. Andrew Raus of Bergmann Associates delivered a formal presentation. The project Study Team and attendees engaged in discussion following the presentation. Attendees were provided with a one page agenda and project fact sheet. The following is a summary of the items discussed and feedback received at this meeting:

Presentation:

1. The presentation covered the following topics:
 - a. Introductions
 - b. Project Overview
 - c. Goals and Objectives
 - d. Project Benefits
 - e. Process and Schedule
 - f. Existing Conditions Mapping
 - g. Open House
 - h. Next Steps

Q&A (all responses provided by Andrew Raus unless otherwise noted):

1. There is concern over who is funding the study and why the money is being spent.
 - a. The project is primarily funded by the Genesee Transportation Council with a match from the municipalities.
 - b. Chili Town Supervisor, David Dunning, responded that the total project costs are roughly \$70k with a match of \$3-4K from the municipalities. The trail project is being conducted because the trail was identified in the comprehensive plan.
 - c. Riga Town Supervisor, Bob Ottley, agreed that this study is required to follow the various existing municipal plans. This feasibility study is part of that process.
2. Can the Steering Committee include property owners?
 - a. The landowners will be invited to participate again during focused meeting(s).
3. There is concern as to why Landowners have been left out of the process, this undermines trust in community, many feel violated.
 - a. This is the first meeting and the beginning of the project. The only work completed to date is collection of existing conditions to gain familiarity with the study area.
4. What are costs and how much is being spent on development of trail?
 - a. This is a feasibility study and there is no funding to develop a trail at this time.
5. How would you approach property owners who own land on Black Creek? Will you approach as easement or purchase of entire property?

Black Creek Trail Feasibility Study

Public Meeting

May 23, 2012 • 7:00 – 9:00 PM

Churchville/Chili Middle School

- a. The municipalities have a variety of options to consider. When a preferred trail alignment is determined, and if implemented is supported, the municipalities will make a determination on how to approach individual property owners.
6. There is concern regarding the need for this project and question as to how to stop the project from continuing.
 - a. Attendees were reassured that this is a feasibility study, not an implementation project. The study is needed to determine trail feasibility along the corridor. The concerns being voiced tonight are valuable to the study team and is exactly what is needed to inform the recommendations made to the municipalities.
7. What conclusions will be in final report?
 - a. The study will determine the feasibility of a trail along the corridor, a preferred trail alignment, implementation and phasing, and planning level cost estimates.
8. Where can I access project information online? Will the meeting materials be available?
 - a. All meeting materials will be available on the Village of Churchville website, links available from chili and Riga websites.
9. Can a trail be designed on wetlands?
 - a. Trail implementation in a wetland can be feasible depending on the wetland designation. There are specific design guidelines that need to be followed.
10. Can trail be located in floodway?
 - a. Yes, design considerations need to be made to provide a safe and usable trail in floodways.
11. There is concern regarding liability and property owner/trail user safety. Whose insurance covers liability of injury on trail? (ex) – Property owner dog bites trail user? Trail user dog bites property owner?
 - a. This will be reviewed and the municipal attorneys will be consulted as the study team begins to assess trail alignment feasibility.
12. There is concern regarding trail user safety associated with flooding and hunting, which is common in segments along the corridor.
 - a. The study team will consider these issues, safety is paramount when determining the feasibility of trail alignments.
13. Can the grant application be accessed?
 - a. David Dunning, yes the information can be accessed through the Freedom of Information Law (FOIL) through any of the municipal offices.
14. Concern over 'trail alignments' shown on map, specifically at Burt Mill Road. How will final decisions be made?
 - a. All of the potential trail alignments will be evaluated against a needs assessment matrix. Feasible alignments will be reviewed with the Steering Committee and potentially impacted land owners.
15. When are the next project meetings and who is invited?

Black Creek Trail Feasibility Study

Public Meeting

May 23, 2012 • 7:00 – 9:00 PM

Churchville/Chili Middle School

- a. The next meeting will be a Steering Committee Meeting, followed by landowner meetings and a Final Public meeting. If this approach is revised, attendees will be notified.

Comments/Suggestions:

1. There was concern regarding who determined the trail is 'critical.' This was in reference to the language used in the informational flyer, the term "critical" linkages was used.
2. Consider provisions, funding for maintenance. The Riga-Chili trail near the Black Creek is not maintained and the Creek is not maintained either.
3. Provide safe accommodation on any on-road trail alignments, current conditions are unsafe.
4. There is great concern regarding a potential trail being located on property that was purchased with no plans for future trail designation.
5. Consider studying feasibility of blueway trail.
6. There is concern with provisions for security and safety. Particularly regarding how the trail will be policed. There are existing issues along the greenway trail.
7. Balance needs of property owners and recreational needs
8. One resident commented that this is an exciting project and pointed out some good examples of waterway trails (Erie Canal, Genesee Riverway, and Buffalo has examples). It was noted that the comments regarding safety are important and should be addressed in the final recommendations. The team should consider blue lights or something similar.
9. One resident agreed that he enjoys the idea of the trail, but has concerns about its feasibility because of location. Specifically related to property owners and sensitive natural features/wetlands.
10. Include more public outreach as part of this study.
11. Trail alignment across active farmland may be problematic.
12. There is great concern regarding restricting motorized vehicles. There are already issues with ATV access without trail access permitted.
13. Have a PA system at next meeting, difficulty hearing the presentation and questions and answers.

Written Comments on Maps:

1. Segment A – Village of Churchville
 - b. At woods behind the Cemetery in Village
 - i. *Leave the woods alone!*
 - c. At east side of Creek north of Buffalo Rd.
 - i. *Too many backyards to go through.*
2. Segment B – Town of Riga
 - a. At properties between Main Street and Burnt Mill Rd (frontage along Robertson Rd)
 - i. *Farm Land Owned, need acreage.*

Black Creek Trail Feasibility Study

Public Meeting

May 23, 2012 • 7:00 – 9:00 PM

Churchville/Chili Middle School

- ii. *Rent land for farming, need acreage.*
 - b. At property north of creek and just east of Burnt Mill Road
 - i. *We have a park in our back yard for our own use, not for public use.*
 - ii. *Rent land for farming, need acreage.*
 - c. At large parcels between Attridge Road and Rt 33A, north of creek.
 - i. *Rent land for farming, need acreage.*
 - ii. *Rent land for farming, need acreage.*
 - iii. *Own farm land not park land*
 - d. At Stuart Road
 - i. *Residents call 911 and sheriff sent to Stewart Road in Wheatland when boaters and people trespass.*
 - e. 31 Stuart Road, north of bridge
 - i. If trail uses Chili Ave Extension and enters the park south of Stuart Road bridge we will have the proposed trail on 3 sides of our property!!!
- 3. General
 - a. *Use the West Shore RR as a trail.*

Submitted Comment Forms:

Comment forms were given to attendees, the comments submitted are listed below. All comments received after the meeting via email are attached.

1. Involve landowners early on
2. Comments about trail in a floodplain
3. Liability
4. Safety issues: trails, wilderness, hunters & pedestrians
5. Use creek as a waterway, not a walkway
6. Use of 4-wheelers, dirt bikes on public trails
7. How do you monitor and see who is on the trail?
8. Flooding (wide spread)
9. Rights of property owners
10. Environmental impact
11. As part of community outreach, please establish a moderated blog where interested parties can enter ideas and concerns, to both: 1) get concerns aired; and 2) get positive alternates and opportunities aired so that parts of this that may be feasible get a chance to enhance the community. I'll look for a link to this blog on the town website
12. Going directly across actively farmed land. This is not acceptable
13. Who is going to pay for the property used
14. Why is the creek not presently maintained for drainage – this asset is not taken care of
15. Who will maintain this property
16. If landowners do not want this, then why proceed?
17. Hunting issues – safety
18. Logging issues – safety

Black Creek Trail Feasibility Study

Public Meeting

May 23, 2012 • 7:00 – 9:00 PM

Churchville/Chili Middle School

19. What about cleaning the creek out for canoeists and kayakers
20. Fishing use of creek
21. Landowner workshops. I believe they should have been done before tonight's meeting to see what private land was available before maps and studies were done.
22. Do not isolate property owners from steering committees as you have all ready done
23. Insurance issues for land owners
24. Sports vehicles on walking trail
25. Trails too close to private houses (within 50 ft)
26. Could have walking trail also along 490 with the proposed trail
27. The creek has not been cleaned!!
28. Maintenance cost of keeping up the trails and clearing the creek from fallen trees will be huge.
At this time, most property owners clean the debris each year from floods
29. Safety is a huge issue. I think this will be a dangerous trails and not used.
30. The Chili Nature Center is used by people drinking and making quite a nuisance. It is never watched by police. Closing parks or trails mean nothing.
31. How can you protect the property owners?
32. How much will this cost?
33. This will bring the value of my property down and make it difficult to sell.
34. I would want to be bought out by the government; I do not want to give up land for public use.
35. It is a wandering creek and changes its path.

This is our understanding of the discussion and feedback received collected during this meeting, please notify the undersigned if with any corrections.

Regards,



Sue R. Steele, RLA, LEED AP BD+C

PROJECT LANDSCAPE ARCHITECT

Bergmann Associates

office: 585.232.5137 x480

CC: Steering Committee Members

Steele, Sue

From: Steele, Sue
Sent: Thursday, May 31, 2012 12:51 PM
To: Steele, Sue
Subject: FW: Observations from 5/23/2012 Black Creek Trail Feasibility Study Public Forum

From: Lyons, Thomas D. [thomas.lyons@thermofisher.com]
Sent: Thursday, May 24, 2012 8:17 AM
To: Steele, Sue; bottley@townofriga.org; ddunning@townofchili.org; mayornancy@churchville.net
Subject: Observations from 5/23/2012 Black Creek Trail Feasibility Study Public Forum

Sue – I decided to copy the town and village leaders directly because some of my comments are directed towards them.

I attended the Project Information Meeting last night (5/23/2012) for the Black Creek trail feasibility study. Unfortunately, I had to leave around 8:00 PM because of other commitments, and I did not get a chance to submit my questions/comments at the time. So I'm taking this opportunity now. (This way you get the benefit of me having 'slept on it' and hopefully these comments are more objective as a result.)

Here are a few of my observations/questions that I'd like to share with you:

There was an obvious sense of distrust from the public last night. There is a need to be more open with the information. Websites need to be accurate and up-to-date. For instance -- the meeting last night did not even appear on the Town of Riga website, no mention in their May-June newsletter (which contained other events on their calendar prior to 5/23), the Churchville website had the meeting time from 7-8, the Chili website had it from 7-8:30, and the paperwork handed out at the meeting had it at 7-9. Also, there are no published notes on any website about the steering committee meeting held back in March (which I attended). You need to get your act together here. People expect timely and accurate information today. Keeping a website up-to-date and accurate is not difficult. This all leads to sense of wondering if you can't get the data correct and timely, how are you going to do on the project overall? Or—worse – 'what are you trying to hide'? As a landowner along the creek, my greatest concern is 'what are my rights'? I've heard many conflicting statements and I've got to believe that the politicians involved here know the answer to that question – as I'm sure they have dealt with many land-owner/rights issues in their experience -- but they just don't want to come out and say what they are, because it would probably discourage this project right from the start.

I think the idea of a trail is great – I'd probably be one of the first ones to use it – just NIMBY. I don't own a lot of land – just around 2 acres – but I work hard to keep it well maintained and landscaped with gardens, etc, and this trail could potentially go right through the middle of it – literally. I would do everything in my power to prevent that. I just don't understand what's within my power right now, and I feel that I should understand that, and people who know are not telling me. I know this is just a feasibility study, but I'm afraid that if I don't do something now, it will be too late. What can you do to assure me this is not the case? As I said, what rights do I have to say 'no – not in my back yard'?

All this said, I understand where you are in the project, and I felt that some of the sentiment and comments you had to field last night were unfortunate. Perhaps there should have been more support from the various politicians in the room. They really are the sponsors of the project – not Berman Associates. They are only doing what the towns and village have asked them to do -- they should not have to defend it (but I have to say Andrew (?) did an admirable job). In general, I do believe you're trying to 'do the right thing' and be above board, just with a few flaws, and it doesn't take many of those in the world of politics and land owner rights for it quickly to get raised to a level of distrust and adverse reaction.

However, I do have to say that I really don't understand how this study has gotten as far as it has in the first place. Just because there is grant money available doesn't mean you have to spend it. One canoe/kayak trip and a look at a map should convince you that a trail just is not feasible. That's as far as it should have to go. It boggles my mind – as well as those of many others – how it could get this far. It's not like there's a natural right-of-way, easement, or abundance of public land available to be used. There have got to be many other more deserving ways to spend this money and serve the general populace.

I'm looking forward to hearing more on this project in the future.

Thank-you for allowing me to voice my opinions, and I hope that you find them constructive.
Please let me know if you'd like further information or explanation of any of my comments or questions.

Best regards,
Tom Lyons

5594 Chili-Riga Center Rd
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Tlyons4@rochester.rr.com<mailto:Tlyons4@rochester.rr.com> or
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Tom Lyons
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Black Creek Trail Feasibility Study

Public Information Meeting • May 23, 2012 • 7:00 – 9:00 PM

Churchville/Chili Middle School

Sign-In Sheet (Please print)

NAME	EMAIL	Do you live or work in the study area?
1 Jan Jacovangelo	janmiao@aol.com	live
2 Frank Jacovangelo	FRANKJACOVANGELO@GALLOLAW.COM	live
3 Gary D. Zimmerman		LIVE
4 Tim Cassidy	TCassidy8@Rochester.RR.COM	
5 Don Ferberberg	dferberberg@YAHOO.COM	LIVE
6 FRANK PERRY	f.perry01@ROCHESTER.RR.COM	LIVE
7 Winston Guy III		LIVE
8 Bob Cotton	rcotton@rochester.rr.com	LIVE
9 Winston Guy JR	NONE	LIVE
10 GARY CROZIER	1CROZIER@ROCHESTER.RR.COM	live
11 From Unlabeled		live
12 Michael LaRocca	Agua designs - Inc & Xchov	Live
13 Alan Lintz	Lintza@AOL.com	live
14 Jim Vogler	Jim@jvogler.com	FARM
15 GARY SPIRITS	gary@mshco.com	LIVE

NAME

EMAIL

37	Chris Worden	WORDENJ@FRONTIERNET.NET
38	RODNEY L. JONES	
39	BOB & COLETTE SCHUBMEHL	
40	Bob Blank	bob.blank@online.mac.com
41	Michael O'Hely	mike.o'hely@gmail.com
42	Paul Wilcox	DWILCO4@ROCHESTER.PR.COM
43	Nancy Kollman	
44	Genevieve Kollman	
45		
46		
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59	Dorothy Burgess	dorothyburgus@aol.com
60	Harold Burgess	dorothyburgus@aol.com
61	John T. Peck	247-7723
62	Tracy D. Florio	Td.florio@townofchil.org
63	Ppt Tindale	tindalej@frontiernet.net
64	Cady Kohlman	Kohlmanc@gmail.com
65	RIK & KAREN BAIR	rkbair43@rochester.rr.com
66	Mark Klier	MKlier1@rochester.rr.com
67	David Smith	Kiga town
68	PETER M. WIDENER	—
69	Anne Leach	aleach1@rochester.rr.com
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Name

Email

16	Christina Gabalski	kgabalski@gmail.com	
17	Jim + Sue Cade	jscade@hotmail.com	
18	Bob + FRAN DENORMAND	rfdenorm@rochester.rr.com	
19	Greg Jones	gjones@ballantyne.rv.com	live.
20	CYNTHIA + SIM MORAN	jrmoraninc@yahoo.com	
21	Diane Pusateri	DFPusateri@a Frontier.net.net	
22	Brad O'Brien	obrien@rochester.rr.com	
23	Donald Smith	DF Smith 60@G.MAIL	
24	Deborah Campanella	dcampanella@frontiernet.net	
25	Gary Easton	garyeaston@ace swim.com	
26	Christy Irwin	Christyirwin@chiliheights.com	
27	TOM LYONS	tlyons4@rochester.rr.com	
28	John Easton	jleaston@yahoo.com	
29	GREGG CHALMERS	GCHALMERS@SIEWERTEQUIPMENT.COM	
30	John Leonard	John.Leonard@TBS.TOSHIBA.COM	
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Black Creek Trail Feasibility Study

Public Meeting | November 29, 2012 • 7:00 – 9:00 PM

Churchville/Chili Middle School

Meeting Attendees

See attached sign-in sheet.

Meeting Summary

The Public Open House Meeting was held on November 29, 2012 to present the trail alignment alternatives, preferred trail alignment and conceptual design recommendations for the Black Creek Trail Feasibility Study to the community. The meeting was open house format with several stations. Project consultants and steering committee members were available for discussion with meeting attendees. Attendees were provided with a one page project hand-out and comment sheets were available for attendees to submit feedback. The following is a summary of the comments received at each station:

Trail alignment alternatives:

- No comments

Preferred Trail Alignment:

- Several attendees expressed support of the recommended alignment.

Churchville Written Recommendations:

- Off road west side experiences motorbike and ATV usage
- West Shore Rail should be a trail
- Black Creek open to boating, consider blueway designation and clean out the creek
- Identify water access points

Riga Recommendations:

- Several attendees expressed support of the trail alignment on the roadway as opposed to along the creek on private property.

Chili Recommendations:

- Property owners expressed concern regarding the improvements to the existing trailhead on Stuart Road at Black Creek Park, due to adjacency to private property and current trespassing issues.
- Chili-Riga and Stuart Road intersection is exceptionally dangerous
- An attendee expressed support of the proposed improvements to Stuart Road (installation of signage for cyclists)
- The owners for the property along Black Creek between Stottle Road and the Pfrengle property are interested in coordinating future development of their property with the Town to potentially provide an off-road connection to the creek and Pfrengle property at this location.
 - o The Town stated that they are currently not interested in purchasing land from private property owners to construct the preferred future trail.
 - o The Town is interested in identifying a mechanism for acquiring easements for the implementation of trail alignments.
- A low bridge crossing should be further considered at the Chili Nature Center in the final report.
- Several residents expressed concern regarding access to private property which is an existing issue in the area. This is especially concerning during hunting season and should be addressed in the design recommendations included in the final report.

General Written Comments:

- Exciting
- A+
- Is parking adequate at Gates?
- One of the dumbest, money pits we've ever seen!!
- Stupid idea

Black Creek Trail Feasibility Study

Public Meeting | November 29, 2012 • 7:00 – 9:00 PM

Churchville/Chili Middle School

- Too much waste we are in debt already!

Submitted Comment Forms:

Comment forms were given to attendees, the comments submitted are listed below.

1. Concern is traffic past properties that are not occupied many days (security). Plus current use of old RR tracks by motorbike and ATV's and snow mobiles is annoying – I see that increasing in spite of proposed ban on those vehicles.
2. In a difficult economy what is the source of funds? Didn't Chili's fund balance decrease significantly from 2011 to 2012?
3. Encourage development of off highway segments that would follow Black Creek. Even a section from Archer across Bill Howard's parcel that terminates at the railroad and would require following the same route in return (C-2).
4. Would suggest a brochure now, rather than later, that promotes bicycle routes. Roads like Brook have minimal traffic. Having users promotes the Town/program.
5. 545 Ballantyne Road is municipal property, (south of former ball parks)
6. Town Hall parcel should at minimum be presented as a spur to the main system
7. There could be large benefits to the community if the trail could somehow run along Chilli Ave from 259 Union Street to Beaver Rd. That section is very poor at present for pedestrians, joggers and cyclists. If that portion of road could be widened and used for part of the trail project, more people would most likely use that stretch to visit the businesses at the intersection of 259 and Chili Ave. They could also use the path to get to the businesses in Chili Center as a sidewalk system already exists east of Beaver Rd.
8. If the State DOT could be brought into this project, your trail system could increase pedestrian patrons to the businesses both at 259 and Chili Center. That would ease concerns from the land owners south of the creek along that stretch and benefit the business and citizens who live along Chili Ave by adding a better and safer walkway. That is more of a win/win situation. That's my 2 cents. Nice work on the presentation.
9. Stretch from Chili to Churchville seems like a long run with no park/public land.
10. Areas in secluded sections are crime/vandalism concerns
11. Don't like section running close to homes along 490 and Chiswick Drive in Churchville or underpass under 490 bridge in same location – I'm assuming it would be too difficult to take trail straight across 490 on Rte 36.
 - a. I would rather see money spent to safely cross 490 on Rte 36 and connect to Sanford Road park where youth and adults play a variety of sports. It would connect Churchville park to Sanford by bike or foot.
12. Based upon what we have learned at this feasibility study "meeting", the proposed project will result in increased "traffic" across from our properties at 46 Stottle Rd. Added numbers of individuals, having more ready access to our land is of great concern. We have experienced trespassing, vandalism, and theft without additional encouragement of foot traffic by an unknown number of strangers. Posted and "No Trespassing" signs have no effect. We can easily envision hikers and others, once in proximity to our property, choosing to continue their "trek" across our yard and to the area we own along Black Creek. Frankly, this concept (and, of course the financial expenditure attached thereto) is ill advised.
13. I feel that this trail brings people on or too near private property, infringing on the rights of taxpaying property owners for the benefit of few.
14. I also feel that security, safety and comfort will be compromised by allowing access to property to which there is limited or no access now.
15. The railroad bed in Churchville between Rt. 33 and Black Creek is often a race way for motor bikes and ATV's. They ignore the Law because there is no enforcement, these trails will be no different. It will be the 'Nature Center' problems magnified.
 - a. People are accosted on the canal path for all the above reasons. We should learn from it

Next Steps:

Black Creek Trail Feasibility Study

Public Open House Meeting

MEETING SUMMARY

Page 2 of 4

Black Creek Trail Feasibility Study

Public Meeting | November 29, 2012 • 7:00 – 9:00 PM

Churchville/Chili Middle School

The response from the meeting is general support for the recommended trail alignment and conceptual design recommendations. The project team will finalize a draft report which will include the following recommendations:

Trail Alignment Map, refer to preferred alignment map attached

Phasing Map, review phasing recommendations below

PHASE 1: Five Year Plan (by municipality)

The improvements included in this phase are feasible to complete within a 5 year timeframe.

1. Village of Churchville

- a. Designate local bicycle route on Howard Avenue and NYS Rt 36 to north of I-490
- b. Improve Howard Avenue from existing West Shore Trail to South Main Street to include shared travel lanes with pavements markings and five foot wide tree lawn and sidewalks in both directions.
- c. Install shared-use trail east along I-490 to Black Creek, south under I-490 bridge, and west along I-490 to connect to NYS route 36
- d. Install trailhead location at NYS route 36

2. Town of Riga

- a. Designate local bicycle route east on Robertson road to Attridge Road, north on Attridge Road to Chili Avenue Extension, east on Chili Avenue Extension to the Town line.
- b. Install shared-use trail south on NYS route 36 to Robertson road

3. Town of Chili

- a. Designate local bicycle route east on Chili Avenue Extension to Stuart Road, south on Stuart Road to Black Creek Park
- b. Install trailhead location on North Side of Stuart Road at Black Creek Park
- c. Improve existing shared-use trail in Black Creek Park to connect to Sunnyside Lodge
- d. Install a new shared-use trail to connect Sunnyside Lodge to Union Street just north of stream culvert at Union Station Park
- e. Install a high visibility crossing at Union Street
- f. Install shared-use trail to connect to the existing asphalt trail in Union Station Park and continue improvements with a new shared-use trail south of existing asphalt trail along Black Creek to a location adjacent to Chili Heights Nature Trail
- g. Install new pedestrian bridge crossing to Chili Heights Nature Trail
- h. Improve existing trail in Chili Heights Nature Trail
- i. Install new shared-use elevated boardwalk east of existing Chili Heights Nature Trail to connect to Stottle Road
- j. Designate local bicycle route on Stottle Road south to Stryker Road, east on Stryker Road to Humphrey Road, north on Humphrey Road, then east on Brook Road to existing trail head at Genesee Valley Greenway Trail

PHASE 2: Ten Year Plan (by municipality)

The Phase 2 improvements should be feasible within ten years. The on-road trail improvement

Black Creek Trail Feasibility Study

Public Meeting | November 29, 2012 • 7:00 – 9:00 PM

Churchville/Chili Middle School

locations should be reviewed for additional investment as each municipality develops their capital improvement plans.

1. Village of Churchville
 - a. Install on-road trail improvements south on NYS Rt 26 to north of I-490, includes widened shoulder in each direction
 - b. Install high visibility east-west crossing improvements at NYS Rt 26 north of I-490
2. Town of Riga
 - a. Install high visibility north-south crossing at Robertson Rd – NYS Rt 36 intersection.
 - b. Install on-road trail improvements east on Robertson road to Attridge Road, north on Attridge Road to Chili Avenue Extension, east on Chili Avenue Extension to the Town line, includes widened shoulder in each direction at all segments.
3. Town of Chili
 - a. Install on-road trail improvements east on Chili Avenue Extension to Stuart Road (north of Chili Riga Center Road), includes widened shoulder in each direction.
 - b. Install high visibility north-south crossing at Stuart Road – Chili Riga Center Rd
 - c. The preferred trail alignment between Stottle Road and Chili Scottsville Road includes the development of a shared-use trail along the right side of Black Creek (on private property), connecting to the Pfrengle property. This is the preferred alignment and should be pursued if the affected landowners are agreeable in the future.
 - d. If the preferred trail alignment is not implementable, the on-road trail improvements should continue south on Stottle Road to Stryker Road, east on Stryker Road to Humphrey Road, north on Humphrey Road, then east on Brook Road to existing trail head at Genesee Valley Greenway Trail, with includes widened shoulder in each direction.

This is our understanding of the discussion and feedback received collected during this meeting, please review and notify the undersigned with any corrections by the end of day **December 21**. The final report will be prepared **after** all comments are submitted.

Regards,



Sue R. Steele, RLA, LEED AP BD+C
PROJECT LANDSCAPE ARCHITECT

Bergmann Associates

office: 585.232.5137 x480

CC: Steering Committee Members

Black Creek Trail Feasibility Study

Public Information Meeting • November 29, 2012 • 7:00 – 9:00 PM

Churchville/Chili Middle School

please sign in

	NAME		EMAIL
1	Anne Leach	30 Stuart Rd	aleach1@rochester.rr.com
2	Gerald Kohlman	211 Robertson Rd - Chili	
3	Nancy Kohlman	211 Robertson Rd	
4	SOB TITS	30 Bishop Gate Dr.	
5	SCOTT SCHREIBER	2 SHETLAND CIR.	
6	Jim Schreiber	50 Swymon Drive	
7	SKIP GUY	1212 Attridge Rd	
8	DAN CRAIG	160 Chili - Scottsville Rd	
9	LARRY CROZIER	186 Ballantyne Rd.	
10	Juan Ucholdy	154 BALLANTYNE RD	
11	Michael LaRoque	30 Stillman drive	
12	Bob & LINDA Lagree	3 Willowbank	lagree@frontiernet.net
13	David Casper	26 Pine Knoll Dr	
14	NANCY STEEDMAN	Village of Churchville	
15	PAT TINDALE	4 RED BUD RD	

Black Creek Trail Feasibility Study

Public Information Meeting • November 29, 2012 • 7:00 – 9:00 PM

Churchville/Chili Middle School

please sign in

16	Don Frenberg	1 Orchard St	N. Chili
17	Tim Cassady	100 Stottler Rd	Chili
18	Mike Marra	18 Florentine Way	Chili
19	Don Avery	7 Brewster	Lyons
20	Greg Jones	3710 Union St.	N. Chili
21	Jim & Sue Cade	41 Stuart Rd	Churchville
22	Carolyn Dettority	4 Chestnut Crescent	Rochester (Chili)
23	John Dettority	4 Chestnut Crescent	Chili Center
24	Roberta Ames	4 Parnell	Churchville
25	George Ames	4 Parnell	Churchville
26	Jack Linde	21 Royce Dr.	"
27	Karen & Rick Baiz	230 Burnt Mill Rd	Churchville
28	Bill & Kris Sanborn	8 Shelter Cove	Churchville
29	Gary & Jackie Easton	360 Chili Ave Ext	Churchville 14428
30	Harold & Darcky Burgess	31 Stuart Rd	Churchville 14428
31	RICHARD & Kathleen Vigilante	19 Willowbank Dr.	" "
32	Steve & Dodie Kasiske	1200 Attridge Rd	Churchville
33	Joseph Catali	160 F. GARLAND AVE	Roch.

Black Creek Trail Feasibility Study

Public Information Meeting • November 29, 2012 • 7:00 – 9:00 PM

Churchville/Chili Middle School

please sign in

- 34 Lyle Warren 21 Hutton Circle Churchville
- 35 Mary Spier 4043 Union St N. Chili 14514
- 36 Bob O'Toole Town of Riga
- 37 Rodney L. Jones 172 Old Scottsville-Chili Rd. 14428
- 38 Brad O'Rourke Town of Riga
- 39 Alan D Lytle Chili / Riga
- 40 Jim Moran 46 Stottle Rd.
- 41 Cynthia Moran "
- 42 Bob PANIK 390 PALMER RD.
- 43 Steve Beauvais 1530 Jefferson Rd. Roch 14623
- 44 Debbie Campanella 814 Robertson Rd. Churchville NY 14428
- 45 Chuck Rittig 1032 Coxsack Rd Rochester NY 14624
- 46 DAVE EARLE 53 CHISWICK CHURCHVILLE
- 47 John T. Peck 11 RUTH TERR ROCH. 14624
- 48 Sean Esposito 36 N. Main St Churchville, NY 14428
- 49 Bob Torzynski GTC
- 50 Coim Wink 232 Old Chl. Scvl Rd
- 51 Jennifer Moore 238 Chili Scottsville Rd Churchville NY 14428

Black Creek Trail Feasibility Study

Public Information Meeting • November 29, 2012 • 7:00 – 9:00 PM

Churchville/Chili Middle School

please sign in

52	Lambert Hoch	412 Ballantyne Rd	14623
53	GARY GASKIN	98 CHESTNUT RIDGE RD	14624
54	MIKE LAM	66 RIO GRANDE DRIVE	14514
55	RAY POTTER	7 SHELTER COVE	14428
56	GREG TOWNSEND	300 BURNT MILL RD	14428
57	Michael Kohlman	1270 Palmer Rd	14428
58	Jason Taylor	18 Brookview Rd	14624
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Appendix C: Gap Studies

Technical Memorandum

Date: 9/28/2012

Re: GTC Priority Trails Study – Chili Riga Center Center Road

Introduction

A study of gaps in traffic flow on Chili Riga Center Road was conducted in the Town of Chili, Monroe County, New York, in August 2012. The reason for the study was to evaluate the availability of adequate gaps for a potential multi-use trail crossing. Figure 1 depicts the potential location with an "X".

Figure 1: Study Location



Existing Conditions

Chili Riga Center Road is New York State Route 33A, an east-west state highway mostly located in Monroe County. The roadway width is approximately 32 feet from the outside edge to outside edge of pavement, providing normal two-way traffic flow with one 12 foot wide lane in each direction and minimum 4 foot wide shoulders. No pedestrian crosswalks or signals currently exist at the proposed trail crossing location for crossing Chili Riga Center Road at Stuart Road. By inspection, adequate sight distance is available for pedestrians to see oncoming traffic to the east and west on Chili Riga Center Road. Figures 2 and 3 depict views of Chili Riga Center Road looking east and west, respectively, at the intersection of Stuart Road at the proposed trail crossing.

Figure 2: View to the East on Chili Riga Center Center Road



Figure 3: View to the West on Chili Riga Center Center Road



Meeting Memorandum

A traffic signal is located at Union Street, approximately one mile east of the proposed trail crossing location on Chili Riga Center Road. Platooning of vehicles near signalized intersections generally creates gaps compared to isolated areas where traffic flow is steady. This traffic signal was observed to have little to no effect on traffic gaps at the potential trail location because of the distance from the traffic signal.

Gap Study

Gap data was collected from 5:00 p.m. to 7:00 p.m. on Wednesday August 22, 2012. A summary print out is attached to the end of this technical memo. This time period was chosen because it represents when trail usage typically peaks on a weekday. According to the methodology documented in the Institute of Transportation Engineers' Manual of Transportation Engineering Studies, the minimum safe gap in traffic is 13 seconds at a pedestrian walking at a rate of 3.5 feet per second. The walking rate is based on guidance in the New York State Supplement to the National Manual of Uniform Traffic Devices (National MUTCD). Table 1 shows the number of adequate gaps for walking across Chili Riga Center Road.

Table 1: Gap Study Summary

Roadway Crossed	Crossing Width (ft) ¹	Minimum Acceptable Gap (sec)	Number of Gaps Measured Exceeding the Minimum	Ratio of Acceptable Gaps/Minute (to the nearest tenth)	MCDOT Criteria Met?
<i>Chili Riga Center Road</i>	32	13	>164	1.4	Yes

1. Inclusive of travel lanes and shoulders

According to the Monroe County Department of Transportation (MCDOT), a rate of acceptable gaps per minute is determined by dividing the total number of acceptable gaps by the study period length. The crossing is considered acceptable for pedestrian use if there is at least one (1) gap per minute. According to the field study and Table 1 above, this criteria is met at Chili Riga Center Road for the proposed unsignalized trail crossing.

Conclusion

Pedestrians are expected to find an acceptable number of gaps at the proposed trail crossing location and adequate sight distance would be provided.

Bergmann Associates

28 E Main Street
200 First Federal Plaza
Rochester, NY 14614

GTC Priority Trails Study
Chili Riga Road
Wednesday August 22, 2012
5:00 PM - 7:00 PM

File Name : Not Nam
Site Code : 00000004
Start Date : 8/22/2012
Page No : 1

Directions Printed: Combined

Start Time	Volume	2 - 3	4 - 5	6 - 7	8 - 9	10 - 11	12 - 13	14 - 15	16 - 17	18 - 19	20 - 21	22 - 23	24 - 25	26 - 27	28 - 29	>29	Int. Total	Average
05:00 PM	0	13	7	8	11	3	6	3	4	3	2	3	1	1	0	3	68	8 - 9
05:15 PM	0	16	5	16	7	3	8	4	2	2	3	1	0	1	2	4	74	8 - 9
05:30 PM	0	15	13	9	6	10	7	1	1	5	3	2	0	0	1	3	76	8 - 9
05:45 PM	0	11	5	10	1	7	2	3	1	2	0	0	1	1	3	10	57	10 - 11
Total	0	55	30	43	25	23	23	11	8	12	8	6	2	3	6	20	275	8 - 9
06:00 PM	0	9	8	2	4	3	3	3	0	2	2	3	3	0	0	10	52	12 - 13
06:15 PM	0	15	4	5	6	2	6	2	1	1	1	0	1	3	0	10	57	8 - 9
06:30 PM	0	3	4	3	3	5	5	1	3	1	3	1	2	1	2	9	46	14 - 15
06:45 PM	0	6	4	3	6	5	1	2	2	1	1	1	3	2	2	9	48	12 - 13
Total	0	33	20	13	19	15	15	8	6	5	7	5	9	6	4	38	203	12 - 13
Grand Total	0	88	50	56	44	38	38	19	14	17	15	11	11	9	10	58	478	10 - 11
Total %		18.4	10.5	11.7	9.2	7.9	7.9	4.0	2.9	3.6	3.1	2.3	2.3	1.9	2.1	12.1		

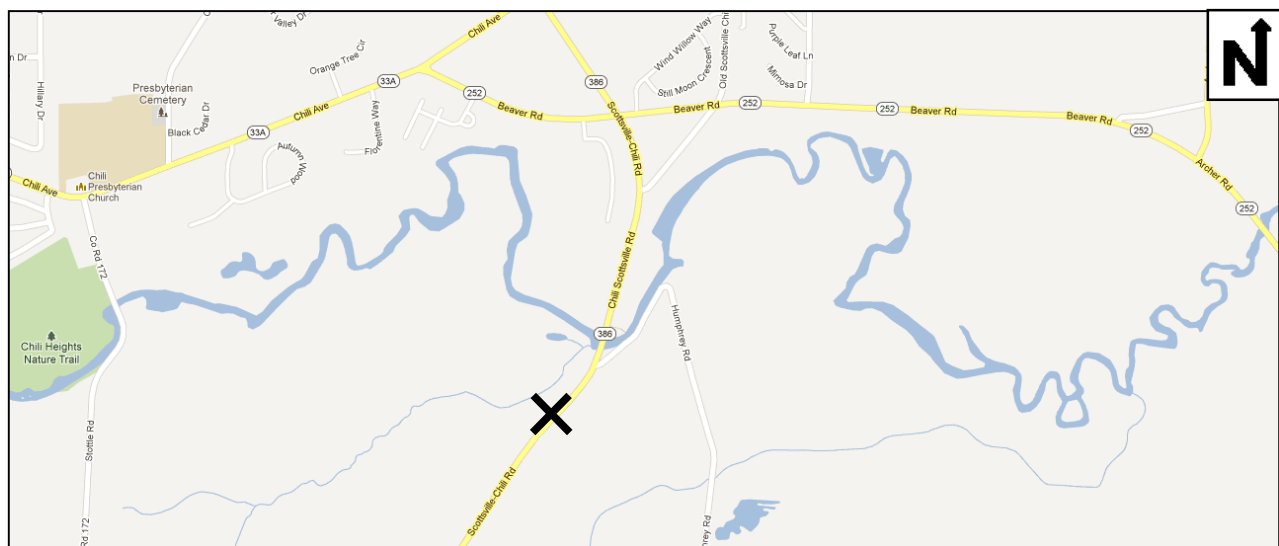
Technical Memorandum

Date: 9/28/2012
Re: GTC Priority Trails Study – Chili Scottsville Road

Introduction

A study of gaps in traffic flow on Chili Scottsville Road was conducted in the Town of Chili, Monroe County, New York, in August 2012. The reason for the study was to evaluate the availability of adequate gaps for a potential multi-use trail crossing. Figure 1 depicts the potential location with an “X”.

Figure 1: Study Location



Existing Conditions

Chili Scottsville Road is New York State Route 386, a north-south highway located in the Town of Chili. The roadway width is approximately 32 feet from the outside edge to outside edge of pavement, providing normal two-way traffic flow with one 11 foot wide lane in each direction and 5 foot wide shoulders. No pedestrian crosswalks or signals currently exist at the proposed trail crossing location. In order to provide adequate sight distance to the north and south, the proposed trail crossing should be located approximately 700 feet south of the intersection at Old Scottsville Chili Road. Figures 2 and 3 depict views of Chili Scottsville Road looking north and south, respectively, at the potential trail crossing.



Figure 2: View to the North on Chili Scottsville Road



Figure 3: View to the South on Chili Scottsville Road



Technical Memorandum

Gap Study

Gap data was collected from 5:00 p.m. to 7:00 p.m. on Thursday, August 23, 2012. A summary print out is attached to the end of this technical memo. This time period was chosen because it represents when trail usage typically peaks on a weekday. According to the methodology documented in the Institute of Transportation Engineers' Manual of Transportation Engineering Studies, the minimum safe gap in traffic is 13 seconds at a pedestrian walking at a rate of 3.5 feet per second. The walking rate is based on guidance in the New York State Supplement to the National Manual of Uniform Traffic Devices (National MUTCD). Table 1 shows the gap study summary for the crossing at Chili Scottsville Road.

Table 1: Gap Study Summary

Roadway Crossed	Crossing Width (ft) ¹	Minimum Acceptable Gap (sec)	Number of Gaps Measured Exceeding the Minimum	Ratio of Acceptable Gaps/Minute (to nearest tenth)	MCDOT Criteria Met?
<i>Chili Scottsville Road</i>	32	13	>465	3.9	Yes

1. Inclusive of travel lanes and shoulders

According to the Monroe County Department of Transportation (MCDOT), a rate of acceptable gaps per minute is determined by dividing the total number of acceptable gaps by the study period length. The crossing is considered acceptable for pedestrian use if there is at least one (1) gap per minute. According to the field study and Table 1 above, this criteria is met at Chili Scottsville Road for the proposed trail crossing.

Conclusion

Pedestrians are expected to find an acceptable number of gaps at the proposed trail crossing location and adequate sight distance would be provided.



Bergmann Associates

28 E Main Street
200 First Federal Plaza
Rochester, NY 14614

GTC Priority Trails Study
Chili Scottsville Road
Thursday August 23, 2012
5:00 PM - 7:00 PM

File Name : chili scottsville gap study
Site Code : 00000002
Start Date : 8/23/2012
Page No : 1

Directions Printed: Direction 1 - Direction 2 - Combined

Start Time	Volume	2 - 3	4 - 5	6 - 7	8 - 9	10 - 11	12 - 13	14 - 15	16 - 17	18 - 19	20 - 21	22 - 23	24 - 25	26 - 27	28 - 29	>29	Int. Total	Average
05:00 PM	0	18	25	7	15	24	10	9	6	5	3	3	5	5	1	17	153	10 - 11
05:15 PM	0	18	16	23	13	9	14	2	8	3	3	2	4	4	5	21	145	10 - 11
05:30 PM	0	25	21	14	9	6	7	7	5	7	4	3	3	1	2	24	138	10 - 11
05:45 PM	0	14	7	14	11	8	9	9	13	3	5	2	4	1	7	22	129	14 - 15
Total	0	75	69	58	48	47	40	27	32	18	15	10	16	11	15	84	565	10 - 11
06:00 PM	0	11	13	9	6	7	6	1	6	5	6	4	5	6	2	28	115	16 - 17
06:15 PM	0	17	12	2	10	8	12	6	4	7	5	4	1	2	0	29	119	12 - 13
06:30 PM	0	32	20	7	14	8	6	8	6	6	0	2	1	2	5	30	147	10 - 11
06:45 PM	0	10	15	14	14	4	5	5	5	3	2	4	4	6	1	26	118	12 - 13
Total	0	70	60	32	44	27	29	20	21	21	13	14	11	16	8	113	499	12 - 13
Grand Total	0	145	129	90	92	74	69	47	53	39	28	24	27	27	23	197	1064	12 - 13
Total %		13.6	12.1	8.5	8.6	7.0	6.5	4.4	5.0	3.7	2.6	2.3	2.5	2.5	2.2	18.5		

Technical Memorandum

Date: 9/28/2012
Re: GTC Priority Trails Study – Stottle Road

Introduction

A study of gaps in traffic flow on Stottle Road was conducted in the Town of Chili, Monroe County, New York, in August 2012. The reason for the study was to evaluate the availability of adequate gaps for a potential multi-use trail crossing. Figure 1 depicts the potential location with an “X”.

Figure 1: Study Location



Existing Conditions

Stottle Road is Country Road 172, a north-south highway located in the Town of Chili. The roadway width is approximately 30 feet from the outside edge to outside edge of pavement, providing normal two-way traffic flow with one 11 foot wide lane in each direction and 4 foot wide shoulders. No pedestrian crosswalks or signals currently exist at the potential trail crossing location. By inspection, adequate sight distance is available for pedestrians to see oncoming traffic to the north and south on Stottle Road. Figures 2 and 3 depict views of Stottle Road looking north and south, respectively, at the proposed trail crossing.



Figure 2: View to the North on Stottle Road



Figure 3: View to the South on Stottle Road



Meeting Memorandum

Gap Study

Gap data was collected from 5:00 p.m. to 7:00 p.m. on Thursday August 23, 2012. A summary print out is attached to the end of this technical memo. This time period was chosen because it represents when trail usage typically peaks on a weekday. According to the methodology documented in the Institute of Transportation Engineers' Manual of Transportation Engineering Studies, the minimum safe gap in traffic is 12 seconds at a pedestrian walking at a rate of 3.5 feet per second. The walking rate is based on guidance in the New York State Supplement to the National Manual of Uniform Traffic Devices (National MUTCD). Table 1 shows the number of adequate gaps for walking across Stottle Road.

Table 1: Gap Study Summary

Roadway Crossed	Crossing Width (ft) ¹	Minimum Acceptable Gap (sec)	Number of Gaps Measured Exceeding the Minimum	Ratio of Acceptable Gaps/Minute (to nearest tenth)	MCDOT Criteria Met?
<i>Stottle Road</i>	30	12	117	1.0	Yes

1. Inclusive of travel lanes and shoulders

According to the Monroe County Department of Transportation (MCDOT), a rate of acceptable gaps per minute is determined by dividing the total number of acceptable gaps by the study period length. The crossing is considered acceptable for pedestrian use if there is at least one (1) gap per minute. According to the field study and Table 1 above, this criteria is met at Stottle Road for the proposed trail crossing.

Conclusion

Pedestrians are expected to find an acceptable number of gaps at the proposed trail crossing and adequate sight distance would be provided.



Bergmann Associates

28 E Main Street
200 First Federal Plaza
Rochester, NY 14614

GTC Priority Trails Study
Stottle Road
Thursday August 23, 2012
5:00 PM - 7:00 PM

File Name : Not Nam
Site Code : 00000003
Start Date : 8/23/2012
Page No : 1

Directions Printed: Combined

Start Time	Volume	2 - 3	4 - 5	6 - 7	8 - 9	10 - 11	12 - 13	14 - 15	16 - 17	18 - 19	20 - 21	22 - 23	24 - 25	26 - 27	28 - 29	>29	Int. Total	Average
05:00 PM	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	10	13	>29
05:15 PM	0	0	0	0	0	1	1	0	1	0	0	1	0	1	0	11	16	>29
05:30 PM	0	0	0	0	1	1	0	0	0	1	1	1	2	0	0	9	16	>29
05:45 PM	0	0	1	3	3	1	1	0	0	0	1	0	0	2	0	9	21	26 - 27
Total	0	0	1	3	4	3	3	0	2	1	2	2	2	4	0	39	66	>29
06:00 PM	0	0	0	0	2	2	0	0	0	1	2	0	0	0	0	15	22	>29
06:15 PM	0	1	1	1	0	0	2	1	0	2	1	0	0	1	1	11	22	>29
06:30 PM	0	0	0	0	0	0	1	1	0	0	1	0	0	0	1	9	13	>29
06:45 PM	0	0	1	0	0	0	1	0	0	0	1	0	1	0	0	9	13	>29
Total	0	1	2	1	2	2	4	2	0	3	5	0	1	1	2	44	70	>29
Grand Total	0	1	3	4	6	5	7	2	2	4	7	2	3	5	2	83	136	>29
Total %		0.7	2.2	2.9	4.4	3.7	5.1	1.5	1.5	2.9	5.1	1.5	2.2	3.7	1.5	61.0		

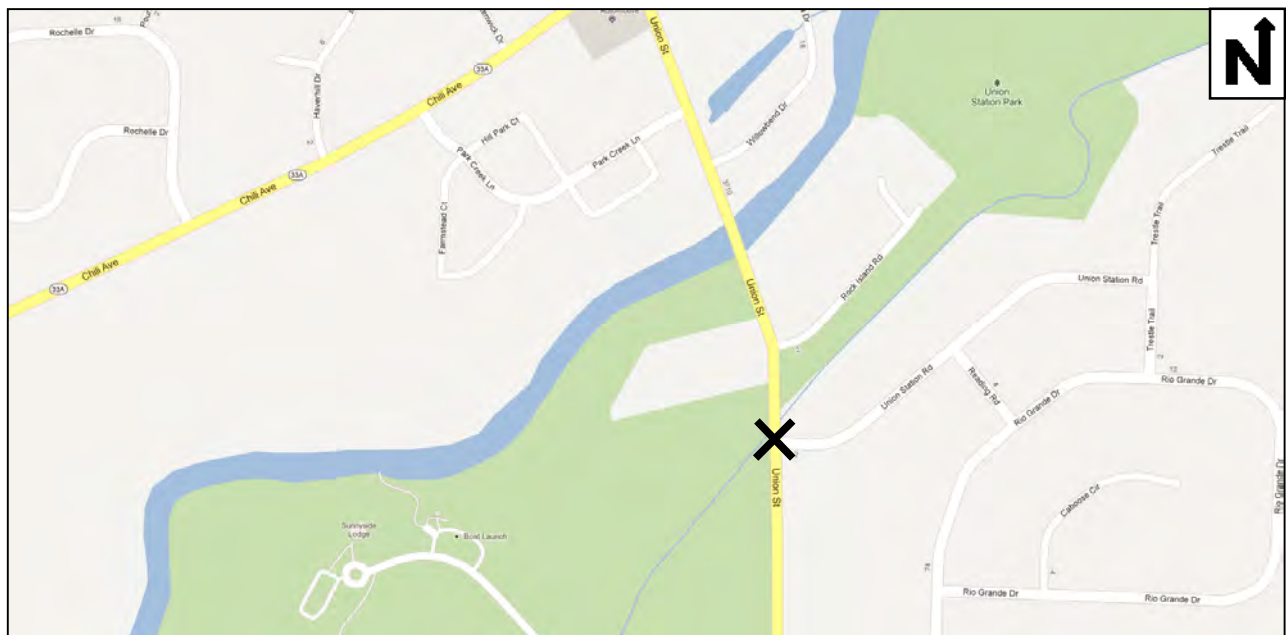
Technical Memorandum

Date: 9/28/2012
Re: GTC Priority Trails Study – Union Street

Introduction

A study of gaps in traffic flow on Union Street was conducted in the Town of Chili, Monroe County, New York, in August 2012. The reason for the study was to evaluate the availability of adequate gaps for a potential multi-use trail crossing. Figure 1 depicts the potential location with an “X”.

Figure 1: Study Location



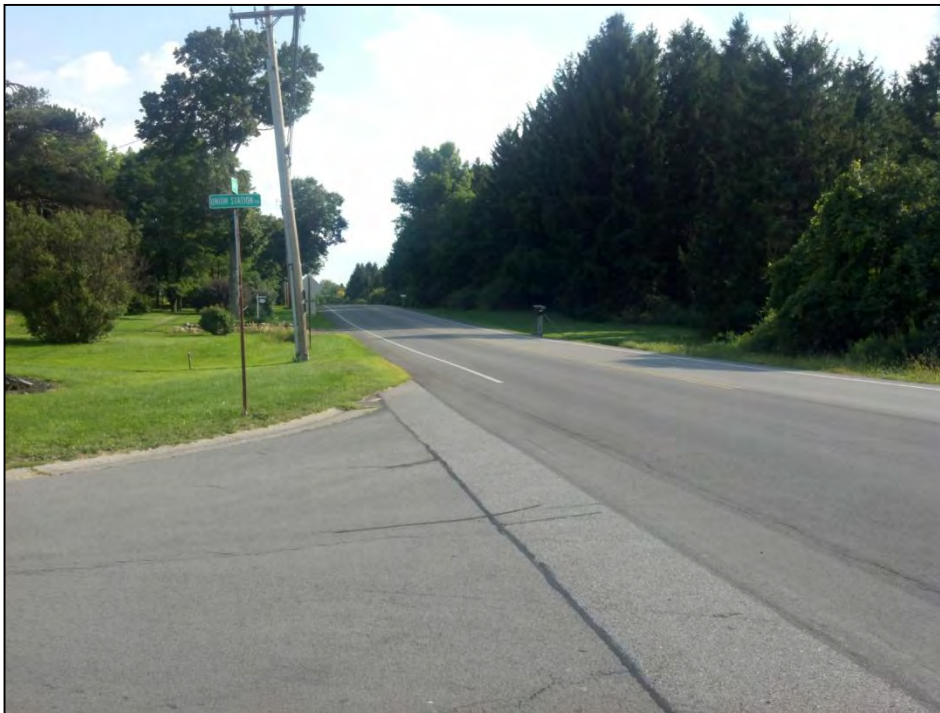
Existing Conditions

Union Street is a north-south street located in the Town of Chili. The roadway width is approximately 30 feet from the outside edge to outside edge of pavement, providing normal two-way traffic flow with one 11 foot wide lane in each direction and 4 foot wide shoulders. No pedestrian crosswalks or signals currently exist at the proposed trail crossing location. Adequate sight distance was measured in the field for pedestrians to see oncoming traffic to the north and south on Union Street. Figures 2 and 3 depict views of Union Street looking north and south, respectively, at the proposed trail crossing.

Figure 2: View to the North on Union Street



Figure 3: View to the South on Union Street



Technical Memorandum

A traffic signal is located at Union Street and Chili Avenue, less than a half mile north of the proposed trail crossing location on Union Street. Platooning of vehicles near signalized intersections generally creates gaps compared to isolated areas where traffic flow is steady. This traffic signal was observed to have a platooning effect for vehicles traveling southbound which created traffic gaps at the potential trail crossing location.

Gap Study

Gap data was collected from 5:00 p.m. to 7:00 p.m. on Wednesday August 22, 2012. A summary print out is attached to the end of this technical memo. This time period was chosen because it represents when trail usage typically peaks on a weekday. According to the methodology documented in the Institute of Transportation Engineers' Manual of Transportation Engineering Studies, the minimum safe gap in traffic is 12 seconds at a pedestrian walking at a rate of 3.5 feet per second. The walking rate is based on guidance in the New York State Supplement to the National Manual of Uniform Traffic Devices (National MUTCD). Table 1 shows the number of adequate gaps for walking across Union Street.

Table 1: Gap Study Summary

Roadway Crossed	Crossing Width (ft) ¹	Minimum Acceptable Gap (sec)	Number of Gaps Measured Exceeding the Minimum	Ratio of Acceptable Gaps/Minute (to nearest tenth)	MCDOT Criteria Met?
<i>Union Street</i>	30	12	124	1.0	Yes

1. Inclusive of travel lanes and shoulders

According to the Monroe County Department of Transportation (MCDOT), a rate of acceptable gaps per minute is determined by dividing the total number of acceptable gaps by the study period length. The crossing is considered acceptable for pedestrian use if there is at least one (1) gap per minute. According to the field study and Table 1 above, this criteria is met at Union Street for the proposed unsignalized trail crossing.

Conclusion

Pedestrians are expected to find an acceptable number of gaps at the proposed trail crossing location and adequate sight distance would be provided.



Bergmann Associates

28 E Main Street
200 First Federal Plaza
Rochester, NY 14614

GTC Priority Trails Study
Union Street
Wednesday August 22, 2012
5:00 PM - 7:00 PM

File Name : Union Street Gap Study
Site Code : 00000001
Start Date : 8/22/2012
Page No : 1

Directions Printed: Combined

Start Time	Volume	2 - 3	4 - 5	6 - 7	8 - 9	10 - 11	12 - 13	14 - 15	16 - 17	18 - 19	20 - 21	22 - 23	24 - 25	26 - 27	28 - 29	>29	Int. Total	Average
05:00 PM	0	44	27	13	5	4	6	3	4	2	1	0	0	0	0	0	109	4 - 5
05:15 PM	0	31	24	13	12	4	3	4	4	0	0	0	2	1	0	0	98	4 - 5
05:30 PM	1	31	16	10	11	5	7	3	1	1	0	1	0	0	1	0	87	4 - 5
05:45 PM	0	37	25	10	9	10	3	4	1	1	4	0	0	0	0	0	104	4 - 5
Total	1	143	92	46	37	23	19	14	10	4	5	1	2	1	1	0	398	4 - 5
06:00 PM	0	33	24	16	8	8	3	1	4	0	1	1	0	2	0	0	101	4 - 5
06:15 PM	0	38	18	16	7	7	5	6	0	1	0	0	0	2	1	0	101	4 - 5
06:30 PM	0	29	17	16	8	9	3	3	2	0	3	2	0	0	0	1	93	6 - 7
06:45 PM	0	20	12	4	8	5	4	5	3	5	2	2	2	1	1	1	75	8 - 9
Total	0	120	71	52	31	29	15	15	9	6	6	5	2	5	2	2	370	4 - 5
Grand Total	1	263	163	98	68	52	34	29	19	10	11	6	4	6	3	2	768	4 - 5
Total %		34.2	21.2	12.8	8.9	6.8	4.4	3.8	2.5	1.3	1.4	0.8	0.5	0.8	0.4	0.3		

Appendix D: Preliminary Hydraulic Assessment

Preliminary Hydraulic Assessment

Interstate 490 Eastbound and Westbound Bridges

The I-490 Eastbound and Westbound bridges over Black Creek are both two span steel deck girder bridges with spillthrough abutments. Black Creek (longitudinal slope of 0.07%) is conveyed under the bridges through an 80 ft. bottom width trapezoidal channel with 2H:1V side slopes armored with dry riprap. The drainage area at the bridge site is 134 mi² and the 5% exceedence discharge (the discharge that is exceeded only 5% of the time) is 464 cfs. This value was calculated from a statistical analysis of the mean daily discharge values at the USGS gage 04231000, and adjusted to the bridge site using a power transfer equation and the drainage areas at the gage and the bridge site.

The preliminary hydraulic assessment at the I-490 bridges over Black Creek was conducted to establish the trail alignment and elevations at that meet or optimize the following requirements, and to determine the square feet of cross sectional area that the trail will occupy.

- Provides the minimum allowable trail width of eight feet plus an additional two foot shoulder on each side;
- Locates the trail on the right bank;
- Provides the minimum allowable vertical clearance to the low chord of the superstructure of eight feet; and
- Provides a top of trail elevation that would only be inundated 5% of the time, based on mean daily discharge records at USGS gage 04231000 in Churchville, NY.

Using these requirements, the proposed trail will occupy the right bank of Black Creek under I-490 Eastbound and Westbound, reducing the bottom width of the channel to 68 ft. For the 5% exceedence discharge, the water depth in Black Creek will be 3.1 ft., and the corresponding water surface elevation will be 546.4 (assuming a channel invert of 543.0). Providing for some freeboard, a trail elevation of 548.0 is recommended. This will provide vertical clearances of 9.5 ft. and 10.3 ft. under the I-490 Eastbound and Westbound bridges.

The trail cross sectional area that occupies the floodway constitutes a development that must be evaluated during final trail design to assure that the trail does not violate National Flood Insurance Program (NFIP) criteria that the Village of Churchville must enforce to remain in compliance with the NFIP. That evaluation should include the following elements:

- A full hydraulic analysis of the reach of Black Creek using the HEC-RAS computer model from downstream of the project to a point upstream potentially affected by the trail for both the natural conditions and floodway conditions with and without the proposed trail improvements, as well as a comparison to the current effective FIS water surface profile.
- Preparation of a Conditional Letter of Map Revision (CLOMR), the regulatory process used by FEMA to evaluate proposed developments in floodplains.
- Processing of the CLOMR with FEMA, answering questions and providing additional information as required.
- Since the trail will be located on NYSDOT lands, coordination with NYSDOT.

- Results showing the impacts on upstream water surface elevations from the proposed trail for both the natural conditions and floodway hydraulic analyses.
- Mitigation of the impacts of the trail construction by providing excavations of material from the bed and banks of Black Creek to compensate for the increased fill from construction of the trail. The hydraulic criteria used by FEMA to evaluate the hydraulic impacts of development in floodplains are:
 - For the natural conditions floodplain hydraulic analysis, the maximum allowable increase in the 1% annual chance water surface elevation is 1.0 feet;
 - For the floodway hydraulic analysis, the maximum allowable increase in the 1% annual chance water surface elevation is 0.0 ft. (any increase of less than 0.05 ft. is considered a 0.0 ft. increase).

New Pedestrian Bridge - Black Creek Park and Chili Nature Center

Two options for the new bridge spanning Black Creek between Union Station Park and the Chili Nature Center were examined. The first of these was a high, 150 ft. single span truss bridge over the 120 ft. wide low flow channel with high abutments and approach embankments in the floodway and low chord elevation above the 1% annual chance flood elevation. The bridge would be a 12 ft. wide prefabricated weathering steel truss on concrete, pile-supported abutments. Since the floodway at this location is approximately 410 ft. wide, spanning the entire floodway was not considered as it would add significant costs to the bridge. However, the 150 ft. span bridge will require significant excavations in the floodway on the Chili Nature Park side to compensate for the high embankments that will be constructed in the floodway. The face of the left abutment of the bridge will be set at the left edge of the floodway.

For this reason, a culvert crossing that would overtop during flood events was also evaluated. This crossing type would consist of 8 side by side sections of precast concrete box culvert each 10 ft. high by 20 ft. wide, with railings or curbs on both sides. The top of the box culverts would be set above the water surface elevation corresponding with 5% exceedence discharge, making the trail accessible 95% of the time. This option would require much less floodplain excavation to comply with NFIP requirements.

The drainage area at the bridge site is 168 mi² and the 5% exceedence discharge (the discharge that is exceeded only 5% of the time) is 550 cfs. This value was calculated from a statistical analysis of the mean daily discharge values at the USGS gage 04231000, and adjusted to the proposed bridge site using a power transfer equation and the drainage areas at the gage and the bridge site.

The preliminary hydraulic assessment at the new pedestrian bridge over Black Creek also included establishing the trail alignment and elevations that meet or optimize the following requirements, and to determine the square feet of cross sectional area that the trail will occupy.

- Provides the minimum allowable trail width of eight feet plus an additional two foot shoulder on each side;
- Locates the trail near the left bank upstream of the bridge and near the right bank upstream of the bridge; and

- Provides a top of trail elevation that would only be inundated 5% of the time, based on mean daily discharge records at USGS gage 04231000 in Churchville, NY. Based on an initial hydraulic analysis using information from the effective FIS and LiDAR mapping of the floodplain, the water surface elevation corresponding with the 5% exceedence discharge is approximately 528, depth is 5.3 feet; and topwidth is approximately 120 ft. Both bridge options will accommodate this flow condition.

The trail cross sectional area that occupies the floodway and floodplain constitutes a development that must be evaluated during final trail design to assure that the trail does not violate National Flood Insurance Program (NFIP) criteria that the Town of Chili must enforce to remain in compliance with the NFIP. That evaluation should include the following elements:

- A full hydraulic analysis of the reach of Black Creek from Stottle Road to Union Street using the HEC-RAS computer model for both the natural conditions and floodway conditions with and without the proposed trail improvements, as well as a comparison to the current effective FIS water surface profile.
- Preparation of a Conditional Letter of Map Revision (CLOMR), the regulatory process used by FEMA to evaluate proposed developments in floodplains.
- Processing of the CLOMR with FEMA, answering questions and providing additional information as required.
- Results showing the impacts on upstream water surface elevations from the proposed trail for both the natural conditions and floodway hydraulic analyses.
- Mitigation of the impacts of the trail and bridge construction by providing excavations of material from the bed and banks of Black Creek to compensate for the increased fill from construction of the trail, and bridge abutments. The hydraulic criteria used by FEMA to evaluate the hydraulic impacts of development in floodplains are:
 - For the natural conditions floodplain hydraulic analysis, the maximum allowable increase in the 1% annual chance water surface elevation is 1.0 feet;
 - For the floodway hydraulic analysis, the maximum allowable increase in the 1% annual chance water surface elevation is 0.0 ft. (any increase of less than 0.05 ft. is considered a 0.0 ft. increase).