

Cuyahoga Greenways: A Community-Driven, Data-Enriched Initiative to Implement a Regional Greenway Vision

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Abstract

Cleveland and surrounding Cuyahoga County is undergoing a gradual transformation. A highly urbanized region in America's rust belt, it has experienced decades of declining population and sprawling development. Presently however, the region has shown signs of economic and social improvement as it recovers from years of stagnation and disinvestment. Accompanying this rebound is an increased awareness to the region's fluctuating socioeconomic conditions and residual challenges to improving mobility. Moreover, there is a desire to ensure that change is sustainable and leads to equitable outcomes for all segments of the community.

Greenways, most notably the county-wide Emerald Necklace, have long been a staple and signature asset of Cuyahoga County. However, the needs of the population are diversifying, particularly regarding mobility and how people access jobs, parks, cultural resources, public services, and commercial centers. Being such, non-motorized travel -- a rising trend for a broad spectrum of the populace -- has become a key component in the region's renewal as it grapples with constricted transit, geographic inequality, and an existing Greenway network whose benefits do not fully reach all sectors of the population.

Cuyahoga Greenways is a county-wide initiative to envision, plan, and implement over 800-miles of greenways and urban trails throughout the region. Unlike conventional approaches to building non-motorized facilities, like bike lanes, that may only serve a segment of the population, Cuyahoga Greenways seeks to build an interconnected, non-motorized transportation network that is safe and welcoming for people of all ages and all abilities. This initiative, which featured input from 29 regional agencies and 43 participating communities, developed a vision, framework plan, and implementation tools for making the new greenway framework a reality.

The planning process was community-driven and data-enriched, empowering local leaders and stakeholders with the knowledge necessary to make informed decisions and craft a plan that benefits the community both economically and socially. A cornerstone of the process was a robust public engagement program with over 20 community-wide events. Leveraging both traditional and digital tools, a rigorous spatial analysis of over 300 corridor opportunities was completed. The resulting analysis, coupled with the community's involvement, allowed stakeholders to identify and prioritize actionable greenway proposals that provide the biggest return to the community while dispensing more equitable outcomes.

With the greenway framework plan in place, community leadership has shown a willingness to more effectively collaborate across jurisdictions, leveraging resources to implement projects. The Cuyahoga Greenways initiative exemplifies a regionally coordinated and evidence-based process to improve equity, mobility, and expand the benefits of greenways to all neighborhoods in Northeast Ohio.

Introduction

Cleveland and surrounding Cuyahoga County is undergoing a gradual transformation. A highly urbanized region in America's rust belt, like other Great Lakes legacy cities, its persistent population decline shows no signs of slowing as manufacturing jobs became consumed through advancements in automation or moved elsewhere (Ohio, 2018). Transforming the region from a production-based economy to more service, medical, and/or technology-based sectors has been slow and not inclusive (Shearer, 2017). In Northeast Ohio some economic sectors are growing rapidly, while others - such as motor vehicular parts and other fabricated metal production - are shrinking faster at the local level than nationally leaving meaningful portions of residents behind while the region struggles with income inequality, job access, and lack of physical as well as upward mobility (Fund, 2018).

Cuyahoga Greenways is a county-wide initiative to envision, plan, and implement over 800-miles of greenways and urban trails throughout the region. Unlike conventional approaches to building non-motorized facilities, like bike lanes, that may only serve a segment of the population, the plan seeks to build an interconnected network that is safe and welcoming for people of all ages, abilities, and demographics, changing the way people think about and move around the county.

Cuyahoga Greenways is one step towards addressing the fluctuating socioeconomic conditions and residual challenges to improving mobility, spatial disparities, and geographic inequalities in the region. If residents can have greater connectivity to parks, open space, schools, and jobs centers, all future growth may become more inclusive, sustainable, and will lead to healthier and more equitable outcomes for larger segments of the community.

Project Area

Cuyahoga County encompasses 458 square miles and is a diverse region physically, socially, and economically. With the City of Cleveland at its center, the 59 municipalities in the County vary in terms of size, demographics, job base, and access to commercial and recreational resources. Transit services (Bus and Light Rail) are provided by the Greater Cleveland Regional Transit Authority (RTA), which has recently reduced service due to declining revenues from sales taxes and a statewide funding contribution that consistently ranks near the bottom on a national scale (ODOT, 2015). Auto-centered travel continues to dominate most residents' transportation experiences, as the same number of county residents consume twice as much land for transportation, home, and businesses as they did 70 years ago (WRLC, 2018). Yet for many residents, access to a personal vehicle is not a given, and increasingly people are choosing to forgo car ownership. Providing safe alternative means of transportation to access jobs, schools, commercial destinations, and recreation opportunities in a sprawling region is essential.

More broadly, supplying better transportation options for all County residents can have a positive impact on the overall quality of life for residents. Despite having good access to recreational opportunities one quarter of Cuyahoga County Residents are considered physically inactive (Johnson, 2018), and at risk for chronic conditions that could be prevented through better nutrition and increased physical activity (Health, 2013). Building non-motorized facilities (trails, greenways, bicycle lanes, etc.) that provide recreational opportunities and promote active modes of transportation will lead to health care cost savings, increased physical activity, and greater health outcomes (Kaczynski, 2008).

While communities and employment centers in the area have continued to lose people and jobs, the total

number of jobs in the area has remained constant. As development moved outward, the net results have become more land consumption and more citizens cut off from jobs and economic gains (Trough, 2017). Between 2000 and 2012, the number of jobs within a typical commute distance for residents within the Cleveland Metro Area declined 26%, placing it last out of 96 metros (Kneebone, 2015). The increased distance between homes, jobs, schools, and parks has made it almost mandatory for citizens to own a vehicle. Increased distance between workers and jobs means longer stretches of unemployment, more jobs unfulfilled, and more earnings spent on travel due to longer distances and travel times to work. Better links to job hubs and commercial centers can help support the economic vitality of the County. Local jobs create more opportunities and unemployed individuals can find new work faster when they live closer or have better access to employment. When substantial portions of a region's population are removed from economic gains or disconnected to jobs, the entire community suffers. The latter point is especially important for increasing upward mobility, attracting businesses, and cultivating talent in the region - as business and workers are increasingly looking to live in communities where they are not dependent on automobiles for their transportation needs. From a planning and implementation standpoint, The Cuyahoga Greenways Plan is a regional mobility vision aimed at improving transportation options while creating better connections to parks, amenities, services, and the workplace. Prioritizing strategic capital investments that align projects across municipal boundaries to make better use of existing job hubs, land uses, infrastructure, and resources will provide greater connectivity and public benefits.

Lead Project Partners

Three organizations assumed co-leadership roles over the course of this planning project and provided financial and technical support.

Cuyahoga County Planning Commission (CCPC)

The Cuyahoga County Planning Commission provides professional planning services to cities, villages, and townships in Cuyahoga County, as well as to regional public agencies.

Creating opportunities to align recommendations named in Cuyahoga Greenways with local resources, leadership, support, and community engagement efforts. Similarly, community master plans were a source of input into the planning process, identifying route locations that were previously identified and supported through a local master plan.

Cleveland Metroparks (CMP)

Cleveland Metroparks is a regional park and recreation provider with more than 23,000 acres of natural areas, open space, and recreational facilities; through its "Emerald Necklace" of open spaces and Reservations, Cleveland Metroparks has been a key partner in building trails and provides significant opportunities for outdoor activities in highly developed region.

Northeast Ohio Areawide Coordinating Agency (NOACA)

Northeast Ohio Areawide Coordinating Agency is a five-county Metropolitan Planning Organization (MPO). Charged with administering Federal transportation funds throughout the region. NOACA funded the Cuyahoga Greenways Plan through its Transportation for Livable Communities Initiative (TLCI) Program.

Background

Much of the existing network of trails lie within the Cleveland Metroparks system. Established in 1917, and the oldest park district in Ohio, the vision for the Cleveland Metroparks was to create an “Emerald Necklace” of parks that coursed its way through the County, providing access to natural space and recreational opportunities. Today, the regional network consists of approximately 165 miles of trails both within and outside the Cleveland Metroparks system. In addition, there are many bicycle lanes and other on-street bicycle facilities throughout the County built by local municipalities.

A central question during the planning process was: “That was the first one-hundred, what’s the plan for the next one-hundred years?” As an urbanized and nearly built-out county, opportunities for setting aside more natural areas that can accommodate trails are limited. The focus for new trails will be on retrofitting existing vacant or underutilized spaces, since building new greenways and urban trails faces challenges by complex development and property ownership patterns, public rights-of-way that must continue to meet transportation demands, and varying views of transportation needs within the County. The Cuyahoga Greenways Plan, like the plan for the Emerald Necklace that preceded it, provides a long-range vision for dramatically reshaping the County and how people move within it.

Planning Context

The Cuyahoga Greenways Plan is funded, in part, through the Transportation for Livable Communities Initiative (TLCI) grant program. A federal transportation program managed by NOACA. As a TLCI project, Cuyahoga Greenways will help advance NOACA’s Regional Strategic Plan by supporting the following goals:

- Developing transportation projects that provide more travel options.
- Promoting re-investment in underutilized or vacant/abandoned properties.
- Supporting economic development.
- Ensuring that the benefits of growth and change are available to all members of a community.
- Enhancing regional cohesion.
- Providing people with safe and reliable transportation choices.

Eastside Greenway

The impetus for the Cuyahoga Greenways Plan came out of a prior TLCI study called the Eastside Greenway, which examined potential greenway and urban trail opportunities throughout communities on the eastern part of Cuyahoga County. During that process, many partners and participants noted an opportunity to expand the planning effort to the entire County and create a trail plan for all 59 municipalities. The Cuyahoga Greenways Plan built on the recommendations and lessons learned during the Eastside Greenways process.

Cuyahoga Greenways Partners

Running parallel to the Eastside Greenways process was the formation of the Cuyahoga Greenways Partners (CGP) organization. The CGP is a collaborative featuring key executives and staff from agencies and organizations across the county. Each volunteer partner brings vested interests in trails, bicycle and pedestrian infrastructure, and transportation planning, and has been tasked with helping to collect and manage trail data across the County and align project opportunities with resources for funding. The nascent organization hosts workshops and conferences within the region, while also acting as a common voice for greenway and trail advocacy, communications, and messaging.

Goals and Objectives

The following goals and objectives were identified through an extensive participatory planning effort, and established the methodology used to evaluate and prioritize trail and greenway corridors throughout the county.

Build a Connected System

- Link trails and transit
- Logical and user-friendly
- Provide local and regional connections
- Leverage parks and open space

Build an Accessible System

- Easy to get to
- Usable for all ages and all abilities
- Serves a diverse community

Link Green Infrastructure & Community Health

- Promotes active life styles
- Celebrates natural amenities
- Sustainable mobility

Drive and Attract Economic Vitality

- Strengthens community identity
- Attracts and retains jobs and residents
- Supports businesses and tourism

Methods

Developing a plan to guide greenway and urban trail implementation for decades to come is no small feat. Planning and designing a single greenway route can be a challenging endeavor - let alone planning an entire network of routes across diverse physical, jurisdictional, and socioeconomic conditions. In tackling complex planning challenges, it is paramount that the process used to make decisions be transparent, understandable, and defensible to the people involved in the process directly, as well as to the communities directly impacted by those decisions.

Data Collection

The decision-making process for Cuyahoga Greenways relied on technical geographic information system (GIS) analysis, expert input, stakeholder observations, and community engagement. Decisions had to be grounded, appropriate for the local context, and supported by the community. Geospatial data sets centered on:

- **Population Density**
Understanding where the greatest concentrations of people are found locations that showed the greatest need, and that could potentially provide the greatest benefits.
- **Car Ownership Rates**
Car ownership (or lack thereof) is a good indicator of areas where populations may face transportation challenges.
- **Poverty Rates**
Households in poverty face disproportionate transportation challenges, such as less access to cars, longer commute times, and unsafe streets for walking and biking.
- **Transit Infrastructure**
Bus, bus rapid transit (BRT), light rail lines, and all corresponding stations, were mapped alongside near-term transportation projects to highlight opportunities where the proposed system of greenways can complement existing transit corridors and play a vital role in bridging the “first mile/last mile” gap between riders’ origins and destinations.
- **Job Centers**
Mapping included density of jobs (jobs per acre) showing locations where potential greenway or urban trails would provide high job access benefits.
- **Commercial & Civic Land Areas**
This complements the job center data and shows, at a finer scale, the land use patterns for “destination” oriented land uses, such as industrial and office uses (key job centers), public services, hospitals, government buildings, schools, universities, commercial retail, and entertainment.
- **Natural Systems**
This depicts an inventory of natural land cover that may be important for conservation. Existing water courses and riparian areas are significant natural features that greenways can align with to expand and preserve habitat.
- **Existing Bikeways**
Existing bikeways and non-motorized transportation facilities across the County were designated to help identify connections to new greenway routes.

Technical Planning Process

There were three main tasks performed over the course of the project (Figure 1):

Step 1: Candidate Route Identification & Hierarchy

Step 2: Route Evaluation

Step 3: Framework Plan & Project Prioritization

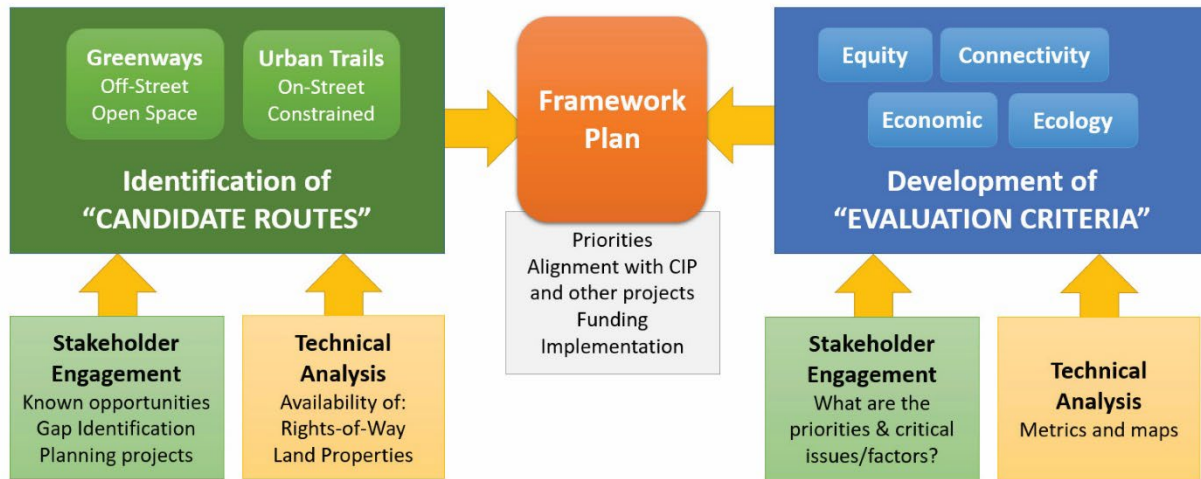


Figure 1. Technical Planning Process

Step 1: Candidate Route Identification & Hierarchy

An on-going activity during the planning process was finding all potential candidate routes for inclusion in the greenway network. This process sought to identify and emphasize opportunities for off-street routes as much as possible to help accommodate the broadest user base, while also recognizing that on-street routes and urban trails would be necessary in more constrained locations. Candidate routes were identified in multiple ways:

- Collected municipal data for existing, planned, and proposed non-motorized facilities and routes across the County and adjacent jurisdictions. Data was compiled by NOACA in collaboration with the Cuyahoga Greenway Partners.
- Technical review of roadways, rights-of-way, utility and rail corridors, vacant and undeveloped properties, and land ownership to identify potential routes. This technical review considered other TLCI projects and Transportation Improvement Projects (TIPs), identifying aligned projects or new opportunities to incorporate greenway and urban trail elements during planning and design phases.
- Engagement with the Project Team, Technical Team, Steering Committee, and the public to help identify additional routes for consideration. A combination of printed and web-based maps, surveys, workshops, and public meetings were utilized to collect feedback.

In addition to identifying candidate routes, all proposed alignments were separated into a hierarchy of regional routes and supporting routes.

- Regional routes are the “backbones” of the greenway system connecting and expanding the existing all ages and ability network of trails across the entire County and into adjacent counties.
- Supporting routes supply local connections to the regional routes while providing residents and municipalities access to key neighborhood destinations.

Step 2: Route Evaluation

Candidate routes were each evaluated across multiple criteria. The criteria considered the overall project goals, and asked, “What routes best help address the project goals?”

Core Factor Analysis

The project team, steering committee, and other stakeholders identified eight “core factors” that reflected the opportunities and benefits future greenway routes might provide (Figures 2A and 2B). These core factors were developed through collaboration with the project team, technical team, and steering committee. During this task, dozens of data sets were mapped, reviewed, and discussed to determine which corridors best aligned with project goals and route prioritization.

Datasets were synthesized into eight core factors, aggregating them into 1/4-mile grid cells across the entire county provided consistently-sized areas for evaluation. As each proposed route passed through these grid cells, it was assigned a score based on how well it addressed each core factor. Routes scoring in the top 20% or bottom 20% for each factor were highlighted. The eight core factors included:

- **Regional Trails Access**
The trail access factors consider the density and proximity of existing trails within the County to proposed routes. This analysis highlighted routes with good access (Top 20%) to existing trails - as these routes typically provided a direct connection to leverage the existing network. Areas that are underserved were also identified.
- **Park & Recreational Access**
The park evaluation analysis determined how many acres of accessible park space per person are within a 1/4-mile buffer of each grid, deriving an average score to park spaces along a given candidate route, highlighting areas with good and poor park access.
- **Habitat Factor**
The habitat factor considers the proximity, size, and type of natural land covers (i.e. forests, wetlands, prairies) to determine where sensitive habitats may need protection and where high-value natural areas may need restoration.

- **Socioeconomic Factor**
The socioeconomic factor considers (1) median income; (2) percent of households in poverty; (3) unemployment rate; and (4) population density in areas of greater socioeconomic need.
- **Personal Mobility Factor**
The personal mobility factors relate to people's ability and means of moving about, particularly in terms of getting to employment. This factor considers (1) car ownership rates; (2) percentage of people walking or biking to work; and (3) population density.
- **Transit Factor**
The transit factor highlights candidate routes that intersect with transit corridors and could help provide "first mile/last mile" connections between transit routes and final destinations for people.
- **Job Centers Factor**
The job density factor portrays the density of jobs at the place of employment within the 1/4-mile grid cells. Trails that can provide greater access to job hubs and employment centers can play a stronger role in supporting economic access and non-motorized commuting.
- **Commercial/Civic Factor**
The commercial/civic destination factors depict the density of community destinations near the candidate trails. These destinations include retail and shopping areas, entertainment venues, schools, colleges, museums, libraries, and other civic institutions.

Hybrid "Connections" Analysis

The next step in the route evaluation process was to look at intersections between core analysis factors through a series of hybrid "connection" analyses (Figure 3). Distinguishing significant correlations between core factors and routes that could provide the greatest links and benefits to these trip origin and destination points. The hybrid "connections" analysis included:

- **People to Jobs**
Highlighting routes that connect both densely populated areas (Top 20%) directly to high job density locations (Top 20%) either through proposed facilities or by using existing trail sections to make the connection.
- **Jobs to Transit**
Indicated existing or proposed routes with high job density (Top 20%) but low or moderate access to public transit (Bottom 20%). Emphasizing the importance of building alternative transportation facilities like trails or bike lanes within these corridors to help overcome the limited transit access to employment centers and improve "first mile/last mile" relationship between destinations.

- **People to Trails**
This analysis found existing and proposed routes with good access to parks/trails (Top 20%) that linked with those routes with poor access to parks/trails (Bottom 20%). In addition, routes that have low access to park space (Bottom 20%), indicating where a new greenway might be best suited to provide some of those benefits, are also shown.
- **Parks to Habitat**
The final connections analysis looks at routes that may be a good opportunity for natural area restoration. These are routes that have either good access to parks (Top 20%) or located in high habitat value areas (Top 20%). Also shown are routes that have both high habitat value and good park access.

Step 3: Framework Plan & Project Prioritization

The decisive step in the process was to take all the evaluated routes and identify and prioritize a smaller for implementation. With input from the technical evaluation, project team, steering committee, and public, these routes have been highlighted with the understanding that some routes may move to implementation quickly while other more transformative projects make take much longer and include more complex funding scenarios. With hundreds of miles of routes proposed, it was important to identify those routes that met the many (or all) of the project's goals.

Results

Greenway Framework Plan & Priority Projects

The Cuyahoga Greenways Framework Plan and Project Prioritization is the culmination of regional collaboration, route identification, technical evaluation, and community engagement. (Figure 4, Table 1) The resulting **Priority Projects Map** takes all the 800+ plus miles of trails and candidate routes identified in the Overall Greenways Framework and distills it down into a set of 69 named projects, **(242.5 miles) divided into three distinct categories:**

- **Critical Gaps: 13.5 miles**
 - **8.9 miles on-street routes**
 - **4.6 miles off-street trail**
- **Regional Links: 122 miles**
 - **88.1 miles on-street routes**
 - **33.9 miles off-street trail**
- **Key Supporting Routes: 107 miles**
 - **86.5 miles on-street routes**
 - **20.5 miles off-street trails**

These high impact projects were determined based a combination of technical input and stakeholder feedback during the final stages of the planning process. These projects are highlighted and prioritized due to their functional role within the network, the potential benefits they afford to the County, community needs that are addressed, and local support for implementation.

The projects named in the Prioritization Plan are, in most cases, (like the overall Greenways Framework) established at a conceptual level. While the framework plan identifies priority routes, it is important to acknowledge that all the other supporting routes identified in the candidate route network remain part of the final framework. The entire Greenways Plan is intended to be a guide, and these routes should be considered whenever an opportunity for implementation arises, such as a transportation improvement project. Realizing the full greenway network will require flexibility and continuing to consider these other supporting routes is important for maintaining this flexibility and taking advantage of opportunities when they arise.

- **Other Supporting Routes: 371 miles**
 - **279.3 miles on-street routes**
 - **91.7 miles off-street trail**

The Cuyahoga Greenways plan will create a healthier and more sustainable future by closing ‘critical gaps’ in the network, and connect people to jobs, parks, transit, and trails through increased transportation options. With new regional and local connections identified, Northeast Ohio regional leadership can now more effectively collaborate across jurisdictions to increase public health through expanded mobility options and neighborhood connectivity. Regional, county, and local leaders and agencies can use this plan to align projects across municipalities, apply for grant funding, integrate routes into local master plans, and engage project partners and sponsors for implementation.

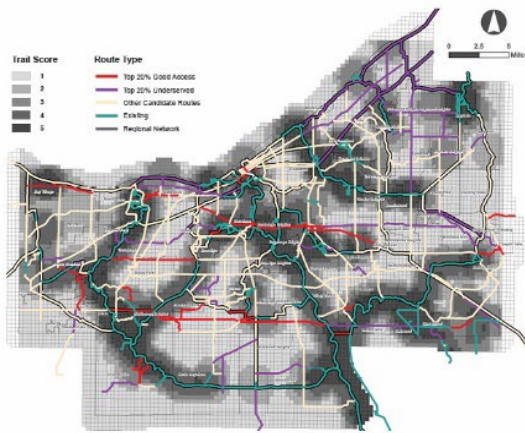
Discussion/Conclusion

Implementing the Cuyahoga Greenways plan will require a long-term commitment to regional coordination and collaboration. The full framework names 815 miles of greenways and urban trails (630 miles of which are not yet realized). The value of this Framework Plan is that regional and local governments, agencies, non-profit groups, and other organizations now have a shared blueprint for building routes that complement one another while growing the overall network. New trails and non-motorized facilities can have the biggest impact when they increase access to desired destinations and coordinate with existing infrastructure. Building out just the proposed regional trail system will have a substantial impact on County residents’ access to trails. Currently, 280,000 residents live within a mile of the regional trail system; when built, the system will reach over 500,000 (over 40% of the County population). When it comes to access to jobs, the benefits of a built out regional greenway system are just as significant: 355,000 jobs are within one-mile of an existing trail today, in the future over 525,000 jobs. Today, Cuyahoga County has 1.1 million jobs - which means that over 62.5% of the jobs in the entire County would be within 1-mile of regional greenways and urban trails when the regional network is complete.

Developing and implementing the Cuyahoga Greenways vision is a challenge. A regional active transportation plan that improves connectivity and access, while expanding the economic and health benefits of parks and greenways to all neighborhoods in Northeast Ohio. The needs of the population are diversifying, particularly regarding mobility and how people access jobs, parks, cultural resources, public services, and commercial centers. Non-motorized travel is a rising trend for a broad spectrum of the populace. Active Transportation is now a key component in the region’s renewal as it grapples with constricted transit, geographic inequality, and an existing Greenway network whose significant benefits may not fully reach all sectors of the population.

For the plan to be effective, it will need many groups and organizations both at the regional and local levels to work together on systematic solutions that advance a more sustainable and equitable future. The Cuyahoga Greenways Plan is an effort to formulate a working guide that can help align collective regional priorities with projects and resources to maximize efficiency and coordination and strengthen and expand collaboration and partnerships amongst public, private, non-profit, and community led organizations all for the betterment of Cuyahoga County and all who live and work there.

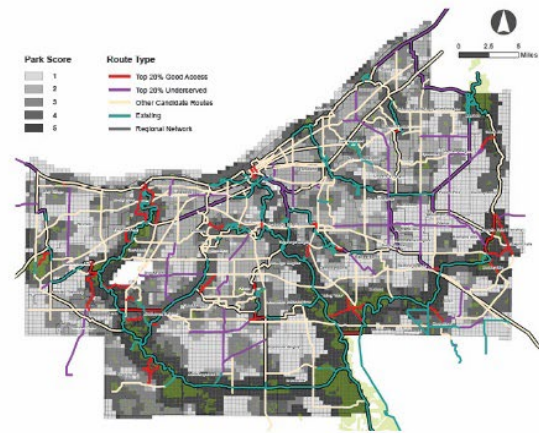
1\ TRAIL ACCESS FACTOR



SUB-FACTORS

- Trail Density

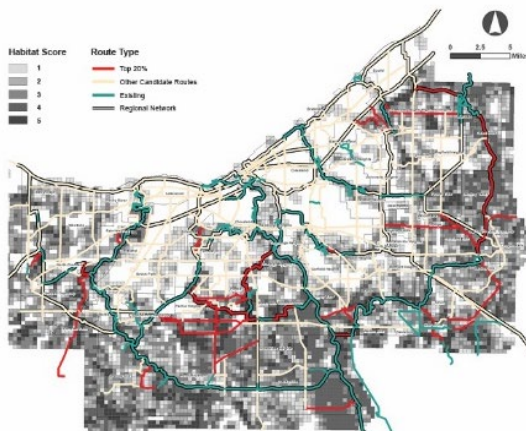
2\ PARK ACCESS FACTOR



SUB-FACTORS

- Acres Of Park Per Person

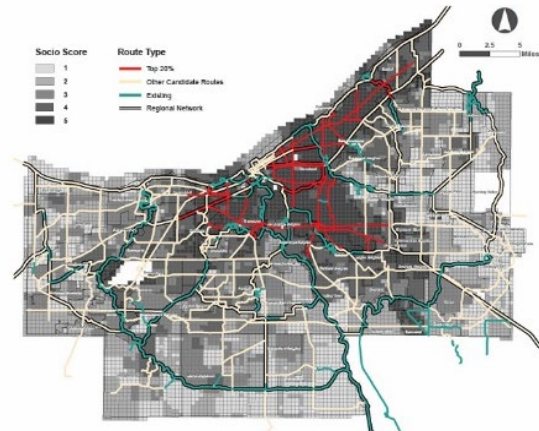
3\ HABITAT FACTOR



SUB-FACTORS

- Patch Size (33%)
- Riparian Corridor Density (33%)
- Potential Habitat Proximity (33%)

4\ SOCIOECONOMIC FACTOR

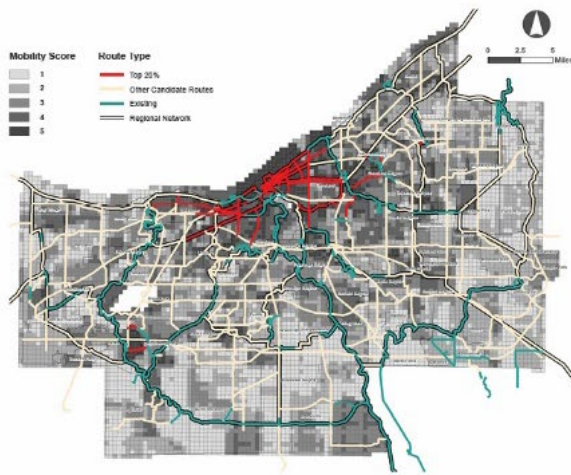


SUB-FACTORS

- Median Income (33%)
- Poverty Rate (33%)
- Unemployment Rate (33%)

Figure 2A: Eight Core Factors

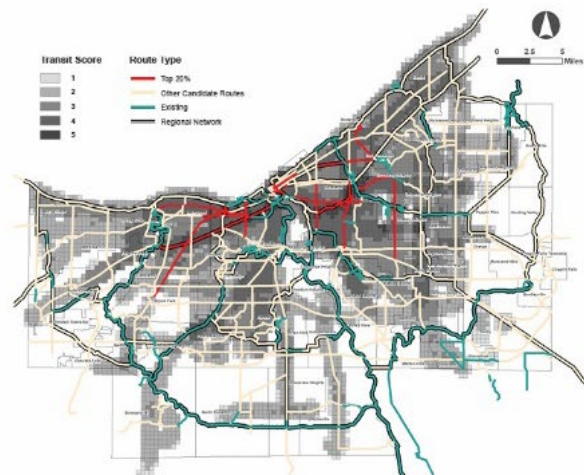
5\ PERSONAL MOBILITY FACTOR



SUB-FACTORS

- Car Ownership (50%)
- Non-motorized Commute (50%)

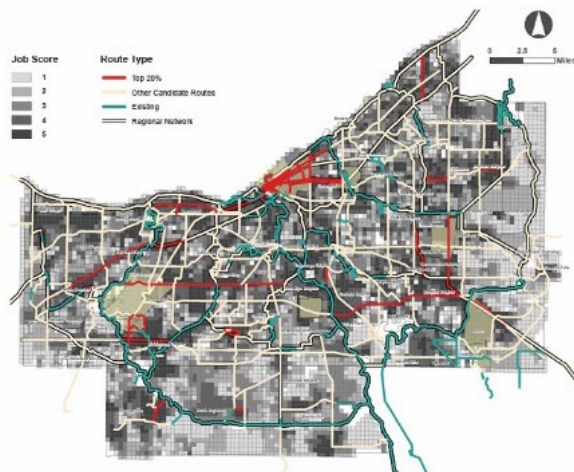
6\ TRANSIT FACTOR



SUB-FACTORS

- 1/2 mile Bus Stop Density (33%)
- 1/2 mile Rail Stations (33%)
- 1/2 Proximity Corridors (33%)

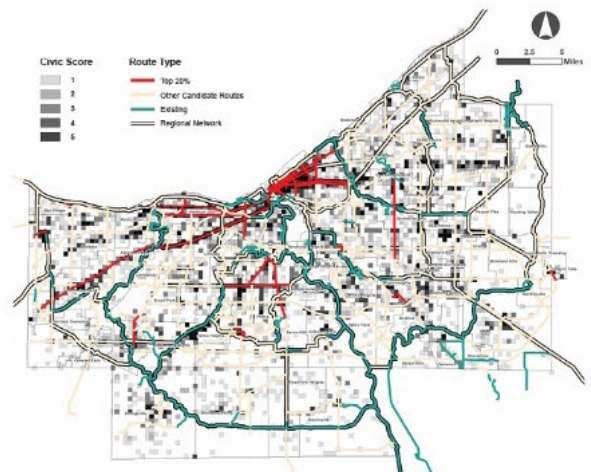
7\ JOB CENTERS FACTOR



SUB-FACTORS

- Job Numbers

8\ COMMERCIAL-CIVIC FACTOR



SUB-FACTORS

- Retail Destinations (33%)
- Cultural Destinations (33%)
- Educational Destinations (33%)

Figure 2B: Eight Core Factors

CRITICAL GAPS

RT#	MILEAGE	RT NAME
CG-01	1.8	ROCKY RIVER RESERVATION TO GREAT NORTHERN CONNECTOR
CG-02	2.5	BROOKSIDE RESERVATION TO BIG CREEK RESERVATION CONNECTOR - SOUTH
CG-03	1.2	BROOKSIDE RESERVATION TO BIG CREEK RESERVATION CONNECTOR - NORTH
CG-04	0.9	LOWER BIG CREEK GREENWAY - UPLAND TRAIL
CG-05	0.2	LOWER BIG CREEK GREENWAY - TOWPATH CONNECTOR
CG-06	0.5	CLEVELAND FOUNDATION CENTENNIAL LAKE LINK TRAIL - IRISHTOWN BEND
CG-07	0.8	MORGANA RUN TRAIL - BOOTH AVENUE EXTENSION
CG-08	1.2	MCCRACKEN TRAIL TO GARFIELD RESERVATION CONNECTOR
CG-09	1.2	BEDFORD RESERVATION TO TOWPATH CONNECTOR
CG-10	1.2	SHAKER MEDIAN TRAIL TO SHAKER LAKES CONNECTOR
CG-11	2.4	EUCLID CREEK GREENWAY
CG-12	0.3	SOUTH CHAGRIN RESERVATION TO BEDFORD RESERVATION

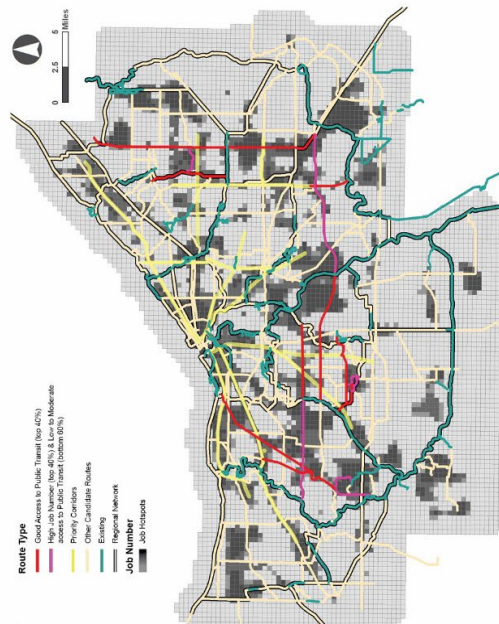
REGIONAL LINKS

RT#	MILEAGE	RT NAME
RL-01	8.6	LAKEFRONT GREENWAY WEST TO NORTH OLMSTED 480 TRAIL
RL-02	5.3	NORTH OLMSTED 480 TRAIL TO MILL STREAM RUN RESERVATION
RL-03	2.9	BAGLEY ROAD CONNECTOR
RL-04	6.9	LAKEFRONT GREENWAY (WEST 2)
RL-05	5.5	LAKEFRONT GREENWAY (WEST 1)
RL-06	2.5	DETROIT AVENUE
RL-07	4.8	LAKEFRONT RESERVATION EDGEWATER PARK TO BROOKLYN MEMORIAL PARK
RL-08	7.1	LORAIN AVENUE CYCLETRACK
RL-09	5.9	WEST CREEK GREENWAY TO BIG CREEK RESERVATION
RL-10	2.2	WEST CREEK GREENWAY (SOUTH)
RL-11	0.3	WEST CREEK GREENWAY
RL-12	4.6	WEST CREEK GREENWAY (NORTH)
RL-13	4.4	SLAVIC VILLAGE DOWNTOWN CONNECTOR
RL-14	3.9	OPPORTUNITY CORRIDOR & IRON COURT CONNECTOR
RL-15	3.8	CHESTER AVENUE
RL-16	4.4	SUPERIOR AVENUE MIDWAY CYCLETRACK
RL-17	4.3	LAKEFRONT GREENWAY (EAST 1)
RL-18	5.0	LAKEFRONT GREENWAY (EAST 2)
RL-19	7.9	LAKEFRONT GREENWAY (EAST 3)
RL-20	8.4	EUCLID AVENUE
RL-21	4.7	S. BELVOIR BOULEVARD
RL-22	3.6	NORTHFIELD ROAD/WARRENSVILLE CENTER ROAD
RL-23	5.9	SOUTH CHAGRIN RESERVATION TO MCCRACKEN TRAIL CONNECTOR
RL-24	3.1	GATES MILLS BOULEVARD TRAIL
RL-25	2.4	SOM CENTER ROAD
RL-26	9.9	CHAGRIN RIVER ROAD
RL-27	5.2	CHAGRIN BOULEVARD/OLD BRAINARD ROAD

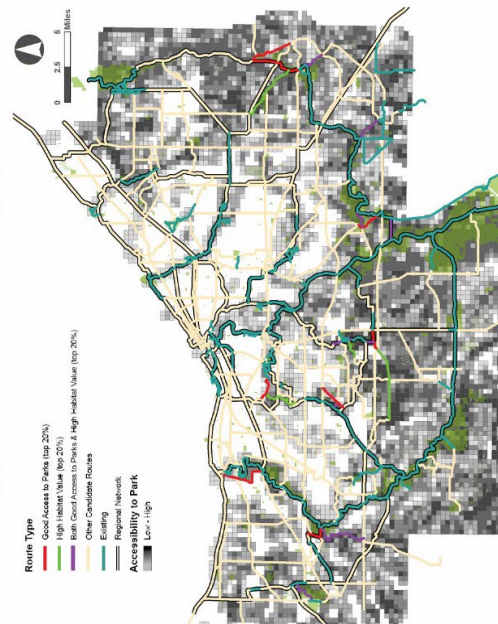
KEY ROUTES

RT#	MILEAGE	RT NAME
KR-01	2.6	WOLF ROAD
KR-02	7.0	HILLIARD BOULEVARD
KR-03	5.5	CLAGUE ROAD
KR-04	6.8	LORAIN ROAD
KR-05	4.9	COLUMBIA ROAD/USHER ROAD
KR-06	3.8	ABRAM CREEK GREENWAY
KR-07	4.3	SMITH ROAD GREENWAY
KR-08	4.0	BELLAIRE ROAD/PURITAS ROAD
KR-09	5.6	BROOKPARK ROAD - WEST
KR-10	4.0	BROOKPARK ROAD - EAST
KR-11	2.6	FULTON ROAD/DENISON AVENUE
KR-12	0.7	PEARL ROAD - SOUTH
KR-13	4.1	WEST CREEK GREENWAY/SHOPPES AT PARMA TO BIG CREEK RESERVATION
KR-14	2.1	WEST CREEK RESERVATION - PARMADALE TO STERNS HOMESTEAD
KR-15	5.3	RIDGE ROAD/BENNETT ROAD
KR-16	1.9	ROYALTON ROAD/STATE ROAD
KR-17	4.1	BROADVIEW ROAD - CENTRAL
KR-18	6.8	BRECKSVILLE ROAD
KR-19	1.0	WARNER ROAD
KR-20	3.7	E. 93RD STREET
KR-21	4.7	HARVARD AVENUE (CENTRAL)
KR-22	3.7	HARVARD AVENUE (EAST)
KR-23	3.1	E. 105TH STREET
KR-24	1.7	SUPERIOR AVENUE (EAST)
KR-25	5.0	HIGHLAND ROAD
KR-26	2.9	MINER ROAD/LANDER ROAD
KR-27	5.0	ACACIA CONNECTOR
KR-28	1.9	WASHINGTON BOULEVARD
KR-29	1.6	TINKER'S CREEK TRAIL - NORTH
KR-30	1.4	PETTIBONE ROAD

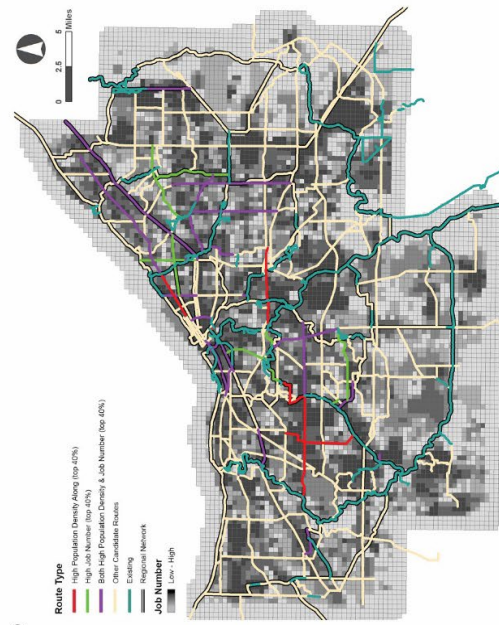
Table 1. Priority Projects.



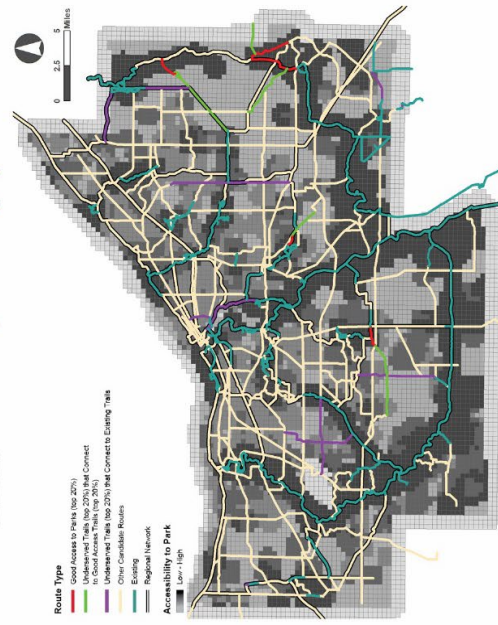
PEOPLE TO PARKS



PARKS TO HABITAT



PEOPLE TO JOBS



JOBS TO TRANSIT

Figure 3. Hybrid “Connections” Analysis

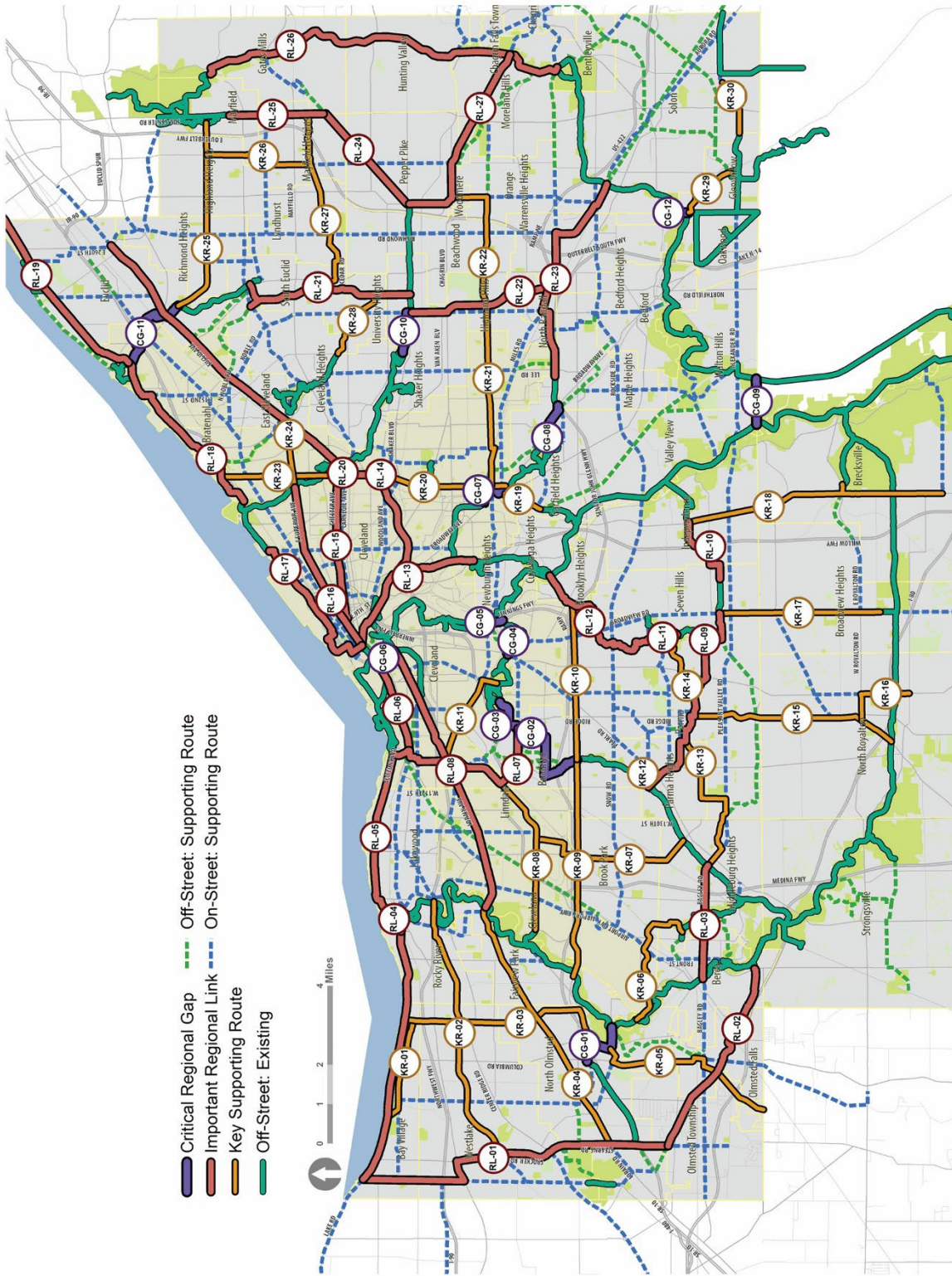


Figure 4. Greenway Framework Plan and Priority Projects

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