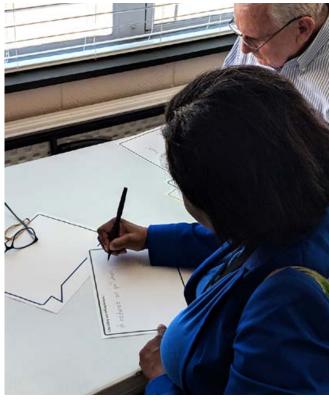


Foundations Report

May 2019







Introduction

Purpose

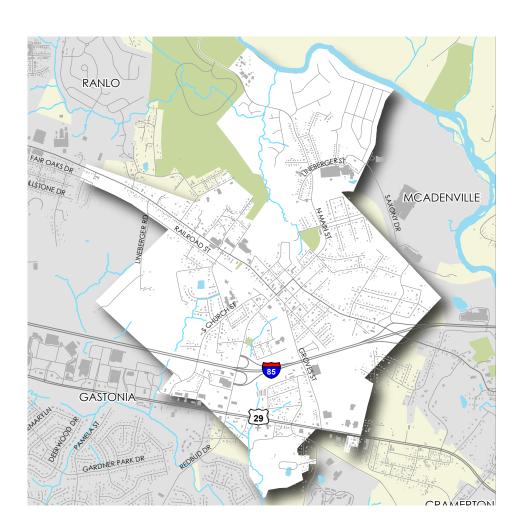
This Foundations Report provides an overview of existing conditions related to biking and walking in Lowell. This document is the first step in the creation of a comprehensive bicycle and pedestrian plan that will provide Lowell with a blueprint for prioritizing planning decisions in the future. GIS and mapping data within this document is provided by the Town, NCDOT or Gaston-Cleveland-Lincoln Metropolitan Planning Organization, unless otherwise stated.

This report considers the following broad subjects and how they relate to mobility in the Town:

- Demographics
- ▶ Existing Conditions
- ▶ Engagement
- Assets and Opportunities
- ▶ Plan Review

Study Area

Lowell is located along Interstate 85 in Gaston County, between Charlotte and Gastonia. The official City limits cover approximately 2.6 square miles.



Demographics

At a Glance

The demographic makeup of the community is a key consideration when planning for the future of active transportation in Lowell. This section utilizes the 2017 American Community Survey 5-year estimates from the US Census Bureau to gather relevant data from the community. This data helps to better inform and illustrate the needs of the people in Lowell, thereby helping to more appropriately tailor the recommendations of the final plan to those needs.



3,591 **Total Population**



1,628 **Total Jobs**



Median Age

(Gaston County, 40.7)

Median Income

(Gaston County, \$46,626)

Bachelors Degree or Higher

(Gaston County, 20.5%)

Minority Population



0) (0

Population Below Poverty Level

17.4%

(Gaston County, 20.5%)

Commuting Means

98.6% Car, Truck,



Drove Alone

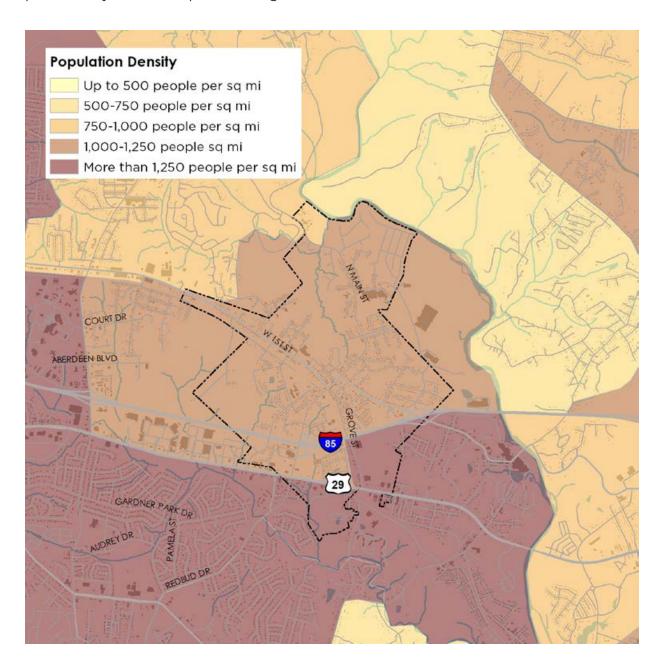
Top Occupations

Management, business, science, and arts Production, transportation, and material moving Sales and office

Mobility Considerations

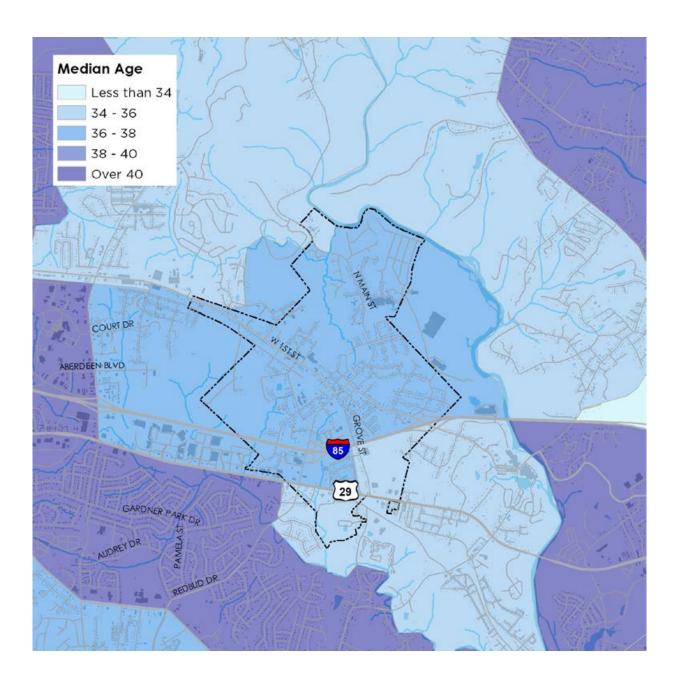
Population Density

Lowell is not as densely populated when compared to neighboring cities in Charlotte's metropolitan region, or compared to many other places within Gaston County. The most densely populated area within the city limits is to the southwest, where vehicular connectivity via I-85 and Highway 29 provide easy commute options throughout the metro area.



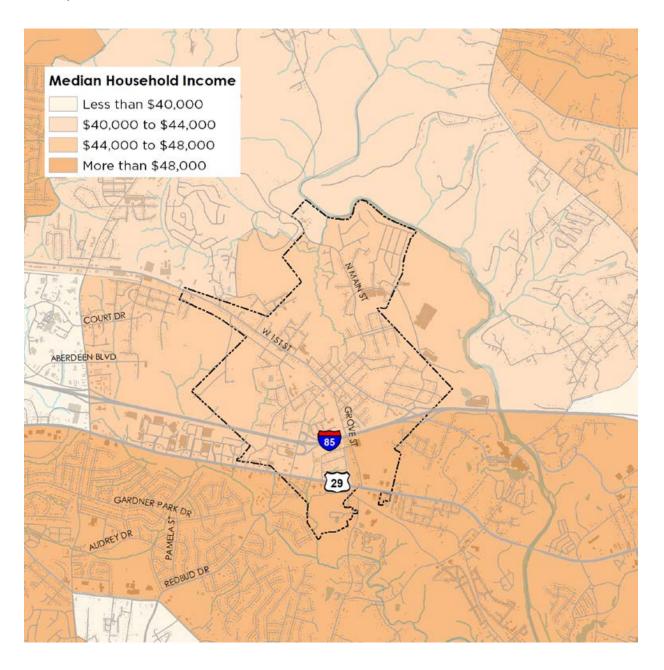
Median Age

Lowell's median population is overwhelmingly between 32 to 38 years, and is largely consistent with surrounding more rural areas. Median age is higher south of Highway 29, where neighborhoods are slightly more developed and median incomes are also higher.



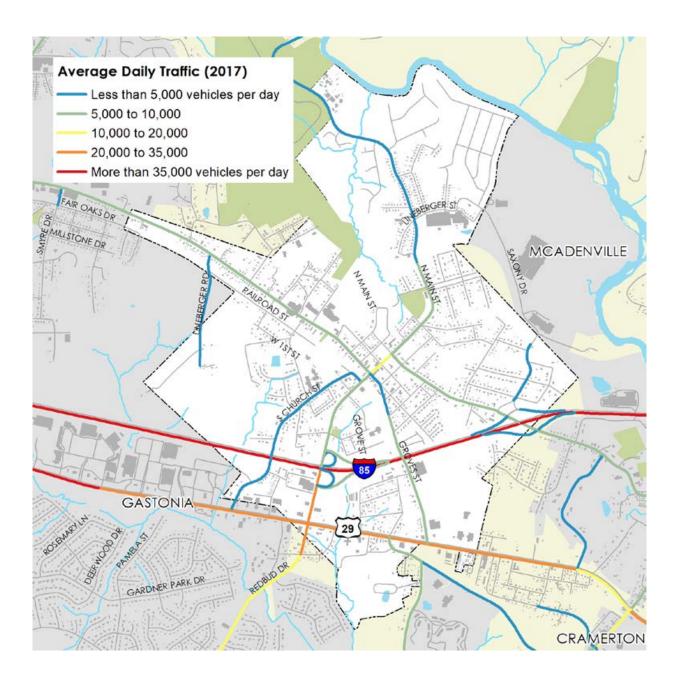
Median Income

Throughout Lowell, median income is relatively cohesive, ranging from \$45,000 to \$60,000 throughout the city, with variations existing to the north and south. North of the city, particularly north of the South Fork Catawba River, income drops to between \$30,000 to \$45,000, while south of the city in the residential areas median income rises to more than \$60,000. Awareness of these trends is paramount when approaching a bicycle and pedestrian system that is both connective and equitable.



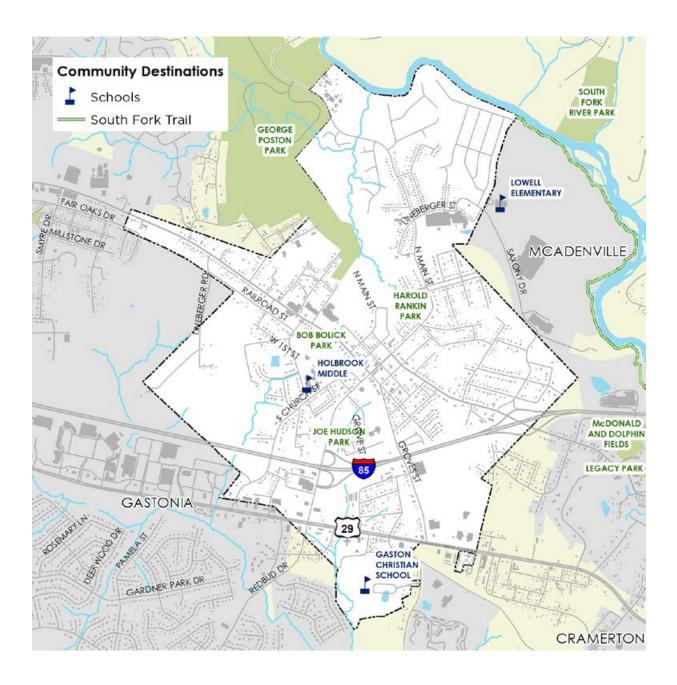
Average Daily Traffic

Most streets within Lowell are low-traffic neighborhood streets. Traffic volumes on these streets are not collected by NCDOT, but in most cases these areas are characterized by light traffic and low travel speeds. Even the city's major through streets, such as West 1st Street, North Main Street, and McAdenville Road, see less than 5,000 vehicles per day in most cases. Exceptions include the section of N Main Street downtown, and North Main Street as it approaches US 29.



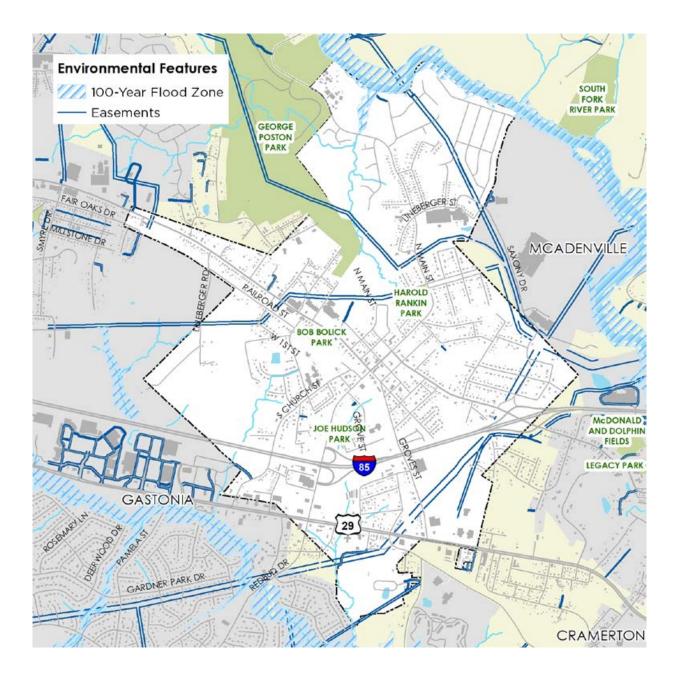
Destinations

Connecting key assets such as schools, parks, and economic and commercial nodes is an important goal of an effective bicycle and pedestrian plan. Lowell has reasonably well-distributed parkland, with the largest green spaces lying to the north along the waterways. The schools on the map are also located across the city, further reinforcing the importance of providing alternate connections to vehicular travel through a bicycle and pedestrian plan.



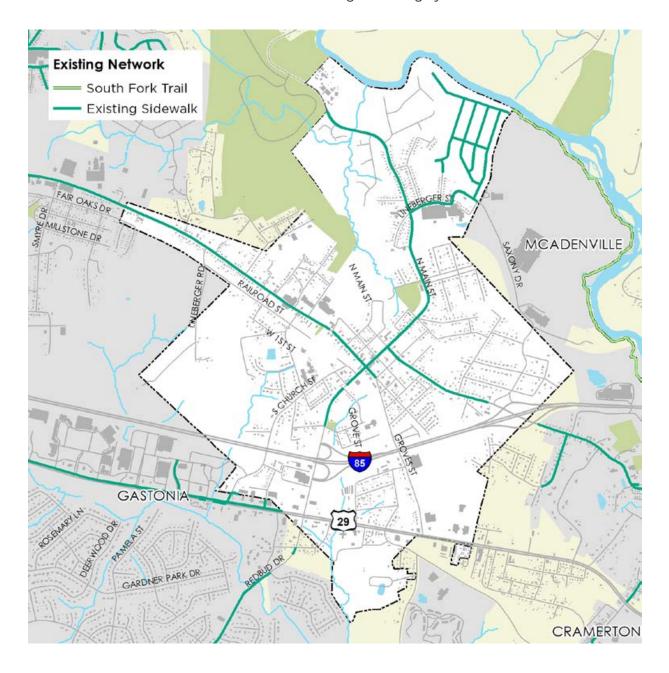
Environmental

The FEMA 100-Year Floodplains follow South Fork Catawba River to the north of Lowell and Duharts Creek to the south. Although not as much of an issue within the city limits, floodplains present a challenge as well as an opportunity to find creative and unique solutions for additional infrastructure, particularly in this case when connecting Lowell to surrounding adjacent communities.



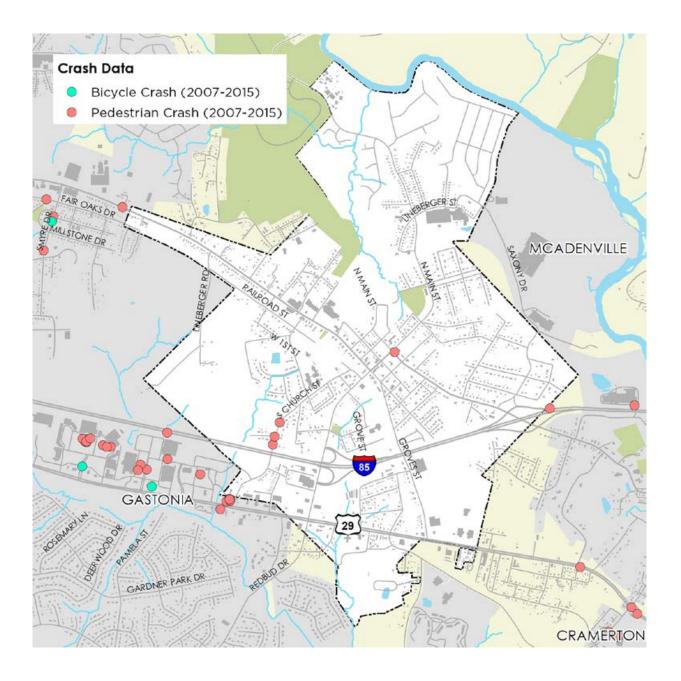
Existing Facilities

Bicycle and pedestrian facilities exist in two forms in and around the city. The South Fork Trail follows the South Fork Catawba River to the northeast and provides recreational opportunities for Lowell residents. Another facility option exists in the form of sidewalks, which are located along the primary north-south and east-west thoroughfares, including North Main Street, West 1st Street, and McAdenville Road. One notable existing piece of infrastructure is the connection off North Main Street to Lineberger Street, which ties in a larger residential community located along the river, as well as connects the South Fork Trail into the larger existing system..



Bike and Pedestrian Crashes

Between 2007 to 2015, three pedestrian crashes have occurred on South Church Street, along with one in at the intersection of McAdenville Road and North Main Street. Both bicycle and pedestrian crashes are most concentrated just outside the city, located between I-85 and Highway 29 to the south. Identifying patterns and areas of risk are a key part of this plan's process, which will recommend safety improvements for areas of concern within the city.



Public Engagement

Online Survey

An online survey was distributed widely via the City of Lowell and various members of the project steering committee. The survey was open from March 8 to April 8, and gauged respondent's attitudes toward existing conditions, as well as asked for priority ways the network could be improved. A summary of responses are shown below.

Current quality rating on the pedestrian and bike networks in Lowell, NC. On a scale of 0-100, How would you rate the current network?



SAFETY



When asked, in general, how safe people feel while walking and bicycling in Lowell:

59% of Pedestrians feel safe34% of Bicyclist feel safe

When given the choice between very safe, safe, unsafe, and very unsafe.

76%

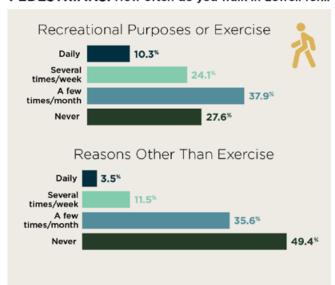
feel that improving walk safety is important, and

71%

feel that improving bike safety is important

HOW WE TRAVEL

PEDESTRIANS: How often do you walk in Lowell for...



BICYCLISTS

Which of the following best describes you as a bicyclist?



28.2% I'll bike anywhere, anytime

19.2% I stay on the roads with painted bike lanes and low traffic

28.2 I generally stick to trails and places there are no cars

24.4% I am not comfortable or not interested in riding a bike

How often do you ride your bike?

34.3% Multiple times a week

6.4% Once a week

11.5% A couple times a month

25.6% A handful of times a year

21.8% I don't ride a bike



BARRIERS

Top barriers to walking

Lack of sidewalks: **51.7%**High traffic speeds and unsafe conditions: **44.8%**Lack of destinations: **35.6%**Crossing the railroad: **17.2%**

Crossing the interstate: 16.1%

Other: 6.9%

Top barriers to biking

High traffic speeds and unsafe conditions: **60.3%**

Lack of destination: **35.9%**

Lack of facilities: 28.2%

Crossing the railroad: 20.5%

Crossing the interstate: 15.3%

Other: 11.5%



PEDESTRIAN IMPROVEMENTS

Important factors to improve walkability in Lowell:

70.1% constructing new sidewalks where none exist today

55.2% building greenways and multi-use paths

39.1% adding crosswalks and pedestrian signals

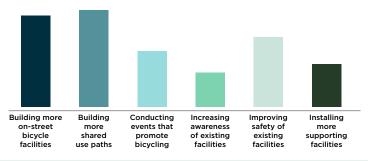
36.8% repairing existing sidewalks

19.5% installing lights along pedestrian routes

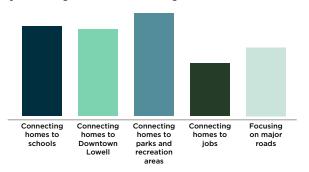
BIKING IMPROVEMENTS

80.2%of respondents believe
Lowell needs more
bike infrastructure

Which of the following is most likely to encourage people to bike?



What should be the highest priority for new bicycle facilities?



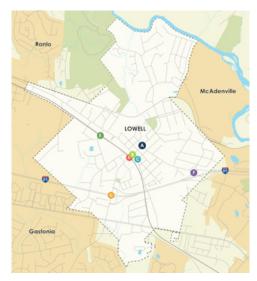
Which local destinations would you most like to be able to walk or bike to?

- 1. George Poston Park
 - 2. Downtown
 - 3. Civic Buildings
- 4. Surrounding Communities
- 5. Franklin Square Shopping Center



What types of improvements are needed on these corridors?

		Pedestrian Improvements	Bike Improvements
A	N Main Street to George Poston Park	71.2%	84.6%
B	NC 7 to Ranlo	52.9%	82.4%
C	Main Street through Downtown	78.6%	76.9%
D	NC 7 from McAdenville to Downtown	67.9%	77.4%
B	Philips Street to Holbrook Middle School	83.3%	75.0%
B	S Church Street to Franklin Square	76.0%	78.0%
G	S Main Street to US 74	69.8%	76.7%



Which of these intersections need improvements?

- A McAddenville Rd (NC 7) and North Main Street: 83%
- (NC 7) and South Main Street: 66%
- Mill Street, Grove Street and 1st Street: 45%
- South Main Street Railroad Crossing: 64%
- Phillips Street Railroad Crossing: 49%
- McAdenville Rd and I-85 Ramps: 60%
- G South Main Street and I-85 Ramps: 48%

What do you believe are the three most important PEDESTRIAN projects?

Additional Sidewalks: 100%

Greenways and Multiuse Paths: 83.3%

Access to downtown: 61.1%

What do you believe are the three most important BICYCLE projects?

Connection to Poston Park: 100%

Adding bike lanes: 80.5%

Carolina Thread Trail Extension: 56.1%

Public Workshop

A public workshop was held on Thursday, March 28th from 6:00-8:00 p.m. at Lowell City Hall. The workshop followed an open house format and was a drop-in opportunity for attendees to participate in several interactive stations and provide valuable feedback to be incorporated into the planning process. The workshop was attended by 12 people. Outcomes and trends from each activity station are described in greater detail in the following sections.

Activities and Results

One Word

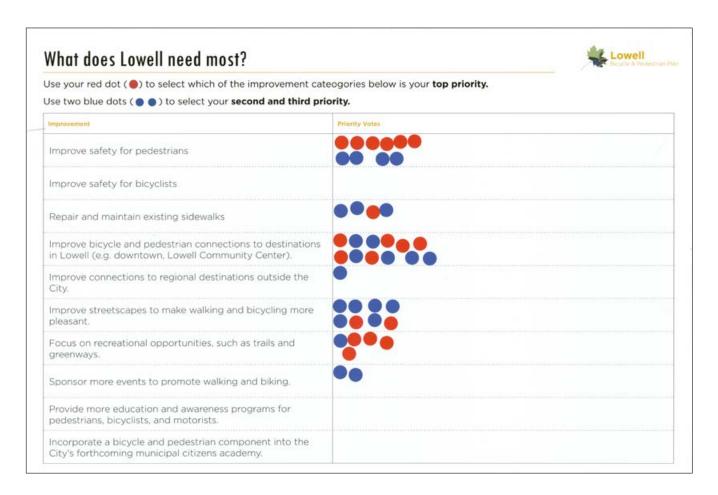
What is one word to describe biking and walking in Lowell today?



What is one word to describe your ideal vision for biking and walking in Lowell?



Priority Dot Exercise



Key Takeaways

Attendees were asked to vote on which categories of improvements they believed were most important in Lowell. Red dots were used to select their most important priority, along with two blue dots for second and third choices. A weighted scoring system was used to evaluate the results based on the number of priority votes and total votes each category received.

Top priorities:

- 1. Improve bicycle and pedestrian connections to destinations
- 2. Improve safety for pedestrians
- 3. Focus on recreational opportunities

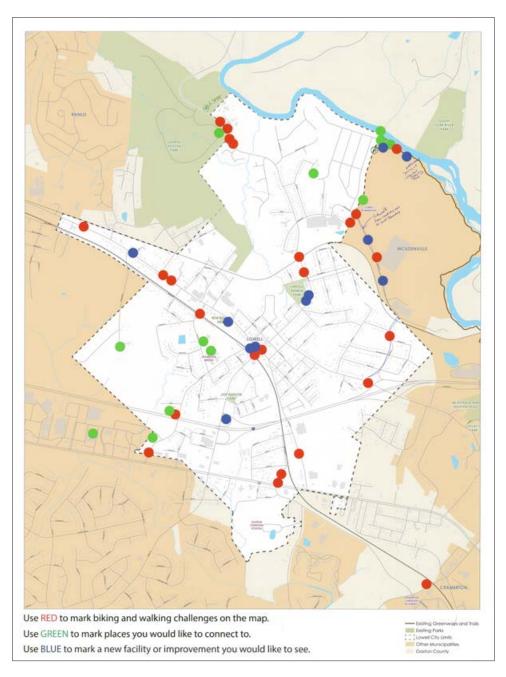
Thought Wall



Key Takeaways

Themes surrounding recreation, health, and sense of place dominated the attendee responses to "I like biking and walking because..." Attendees indicated they would bike more often if proper infrastructure was in place, such as bike lanes, signage, maps, and safe connections between daily destinations. Responses to "Improving mobility is important because..." included providing a greater range of options, community engagement, fitness, sustainability, and safety.

Mapping Exercise



Key Takeaways

This activity helped identify specific location-based challenges and opportunities within the city guided by the community's collective feedback. Challenges included major road intersections and difficult crossings. Attendees indicated a desire to connect to places such as the South Fork Trail and green spaces to the north, as well as the city's schools. New facilities were desired in the heart of Lowell's downtown, close to parks, along the South Fork Trail, and close to the elementary school.

Visual Preference Survey



Key Takeaways

This activity helped identify specific location-based challenges and opportunities within the city guided by the community's collective feedback. Challenges included major road intersections and difficult crossings. Attendees indicated a desire to connect to places such as the South Fork Trail and green spaces to the north, as well as the city's schools. New facilities were desired in the heart of Lowell's downtown, close to parks, along the South Fork Trail, and close to the elementary school.

Assets and Opportunities

A key part of this planning process involves identifying assets to be leveraged and opportunistic ways to improve the bicycle and pedestrian system in Lowell. These characteristics were identified through a review of existing conditions, input from the steering committee, and guidance from City staff.

Assets

The City of Lowell boasts a variety of assets that can contribute to the maturation of the city's bicycle and pedestrian system. These assets include general characteristics of the community as well as a variety of local destinations.

Community Characteristics

- ▶ Small town vibe
- ▶ Sense of community
- Low crime rates
- ▶ Long-time residents
- Proximity to neighboring communities
- Proximity to local recreational opportunities

Local Places

- Downtown
- Schools
- ▶ Community Center
- ▶ George Poston Park
- ▶ Franklin Square
- ▶ Boys & Girls Club
- ▶ Library

Challenges

Every community has a set of unique challenges that must be overcome to allow its bicycle and pedestrian network to flourish. The challenges facing Lowell include a combination of mobility barriers and physical characteristics.

Barriers to Mobility

- **▶** I-85
- Railroad
- ▶ Limited ADA features
- ▶ Car culture mindset
- ▶ Lack of public transportation
- Aging population

Physical Characteristics

- ▶ Limited right-of-way
- Age and condition of sidewalks
- ▶ Poor access to community resources
- ▶ General accessibility
- ▶ Lack of safe crossing facilities

Opportunities

Corridors

The City of Lowell's street system includes several main corridors with various sizes and characteristics. While opportunity lies along each of these corridors, the unique features and circumstances must be understood to right-size bicycle and pedestrian improvements. This section highlights the prominent corridor's in the local transportation system. The bicycle and pedestrian opportunities shown here represent an initial step in the exploration of recommended improvements.

South Main Street

Corridor Characteristics

South Main Street is a major corridor that connects downtown Lowell with I-85 and US 74/29. Continuous sidewalk exists on at least one side of the road, but are narrow in places and lack accessibility. Crossing the five-lane roadway can be a challenge due to a lack of delineated crossings, and no bicycle facilities currently exist. The corridor is a major connection to Gastonia and the commercial development along Wilkinson Boulevard.

Bicycle and Pedestrian Opportunities

- ▶ Enhanced crossings
- Possible road diet
- Sidewalk improvements
- Streetscape enhancements



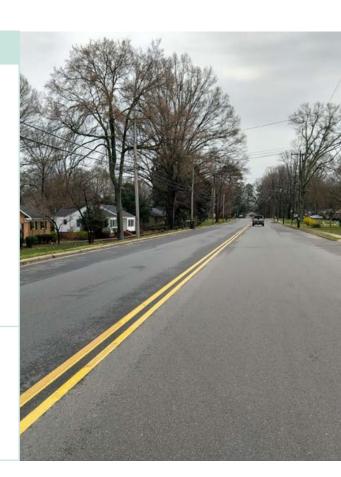
McAdenville Road

Corridor Characteristics

McAdenville Road is a major connection to downtown Lowell from I-85. The two-lane roadway includes wide vehicle lanes with excess capacity compared to the relatively low traffic volumes, leading to high traffic speeds. This provides an opportunity to create bicycle facilities through re-striping, both improving bicycle safety and narrowing the travel lanes to slow vehicle speeds. A lack of safe crossings also create challenges, and the narrow sidewalk is in disrepair in many locations.

Bicycle and Pedestrian Opportunities

- Striped bicycle lanes
- Enhanced crossings
- Sidewalk improvements



North Main Street (W 1st Street to McAdenville Road)

Corridor Characteristics

North Main Street through downtown features two vehicle lanes plus on-street parallel parking on both sides. Sidewalks and streetscaping are available on both sides, along with newly improved pedestrian crossings. Grade changes between the street and sidewalk on the west side of Main Street presents accessibility challenges. In other areas, little-to-no buffer between pedestrians and vehicle traffic makes the corridor less pedestrian-friendly. This corridor presents the greatest opportunity in terms of pedestrian destinations and walkability in Lowell.

Bicycle and Pedestrian Opportunities

- ▶ Enhanced crossings
- ▶ Reconfigure parking
- Sharrows
- Sidewalk improvements
- ▶ Enhanced accessibility





North Main Street (McAdenville Road to Boys & Girls Club)

Corridor Characteristics

North Main Street currently provides four lanes of vehicular capacity in this area along this segment before transitioning to a, though the road changes to two-lane cross section at the bridge over the railroad just north of the Bovs' and Girls' Club. Modest traffic volumes might suggestmay provide an opportunity to reimagine this cross section to be more consistent throughout the corridor's length while providing additional bicycle and pedestrian safety features. The bridge over the railroad will remain a constraint. Current sidewalks are narrow and do not provide a buffer from vehicle traffic, making for an uncomfortable walking experience.

Bicycle and Pedestrian Opportunities

- Possible restriping or road diet opportunity
- ▶ Enhanced crossings
- Sidewalk improvements
- Streetscape enhancements



North Main Street (Boys & Girls Club to George Poston Park)

Corridor Characteristics

North Main Street connects downtown Lowell to George Poston Park and other communities in north Gaston County. Once outside of downtown. North Main Street becomes a two-lane roadway, with continuous sidewalk on one side of the street. High traffic speeds are a concern on this roadway due to a lack of signalized or stop-controlled intersections. These speeds contribute to , pedestrian and bicycle safety is a concerns. This corridor presents a major opportunity to connect to George Poston Park.

Bicycle and Pedestrian Opportunities

- Enhanced crossings
- Designated bicycle facility
- Sidewalk improvements and additional construction
- Signage and traffic calming



West 1st Street (Downtown)

Corridor Characteristics

West 1st Street in Downtown is a fourlane corridor that provides vehicular connectivity to and from downtown Lowell and to the major highways that provide connectivity throughout the region. Sidewalks are currently available on both sides of the roadway, with some pedestrian improvements provided. No bicycle facilities are available. Crossing the roadway on foot is difficult due to a lack of delineated crossings outside of downtown. The corridor is constrained, but opportunities may be available to reconfigure the existing cross section to provide additional safety features and amenities.



Bicycle and Pedestrian Opportunities

- ▶ Enhanced crossings
- Sharrows
- ▶ Sidewalk improvements
- Streetscape enhancements

West 1st Street (NC 7) West of Hemlock Ln

Corridor Characteristics

N NC 7 carries traffic from downtown Lowell to neighboring Ranlo. Though traffic volumes are relatively modest, high speeds are a challenge on the four-lane roadway. A narrow sidewalk is available on one or both sides of the roadway throughout most of the corridor, though many stretches are in disrepair and lack basic accessibility. Pedestrian crossings are scarce or nonexistent, and should be a focus due to the community resources this road connects (e.g., the Lowell Community Center, Holbrook Middle School, and several churches).

Bicycle and Pedestrian Opportunities

- ▶ Enhanced crossings
- ▶ Possible Road Diet
- Sidewalk improvements
- ▶ Streetscape enhancements



Crossings

The bicycle and pedestrian network in Lowell should aspire to be safer, more inviting, and more accessible to users of all ages and abilities. By accommodating bicyclists and pedestrians, streets become safer for all users. Best practices for crossings including high visibility crosswalks, pedestrian timers (where possible), good sight distance, reduced crossing distances, and ADA accommodations. In additional to the featured crossings below, general crossing characteristics in Lowell include poor ADA accessibility, facilities in disrepair, limited sidewalks, and lack of pedestrian signals.

Phillips Street Railroad Crossing



South Main Street Railroad Crossing



Railroad crossings are a major challenge for pedestrians in Lowell. Two major railroad crossings near downtown - Phillips Street and South Main Street - present safety and accessibility concerns. Narrow roadways and a lack of pedestrian facilities put pedestrians and vehicles in conflict at both locations. Improved crossings, such as pedestrian safety signals and uninterrupted walkways can help create connections between Downtown, residential neighborhoods and Holbrook Middle School.

Mill Street, Groves Street and East 1st Street



This skewed intersection creates long crossing distances for pedestrians and poor visibility for drivers. A lack of safe crossings contributes to unsafe conditions, along with a lack of sidewalks on all roadways.

Main Street connection to Rankin Park



Though served by sidewalks and accessible ramps on all four legs, there is no crossing facility to allow access to Rankin Park from across Main Street.

West 1st Street and North Main Street



This major downtown intersection provides pedestrian crossings and curb ramps on all four legs in various states of repair. The addition of pedestrian signals, high visibility decorative striping, and curb extensions could transform this intersection into a signature downtown location.

North Main Street and McAdenville Road



This major downtown intersection does not include painted crossings or pedestrian signals. Sidewalks and curb ramps are available on three legs of the intersection, in various states of repair. Improvements to this intersection would greatly improve connectivity to downtown.

Holbrook Middle School



Though served by sidewalks immediately adjacent to the school, the school is disconnected from the surrounding area, as shown by the photo above. Additional facilities and crossings would improve connectivity and safety for students.

South Main Street across I-85



As one of the main connections between Lowell and surrounding communities, this crossing of I-85 currently only serves vehicular traffic. The addition of pedestrian and bicycle facilities would improve safety and connectivity between Lowell and regional destinations.

Connections

Many of the assets identified in Lowell relate to its small-town vibe and sense of community. These characteristics are due in part to the many local places that are located within proximity to the core. These places have been identified by the Steering Committee as worthy of enhanced multimodal connections. Some of these locations are featured in the photos below. Other locations include its schools, neighborhoods near downtown, the trail network, and commercial shopping centers. Connections to these places should respond to the context and constraints of nearby corridors.

Downtown Lowell



George Poston Park



Holbrook Middle School



Franklin Square Shopping Center



Plan Review

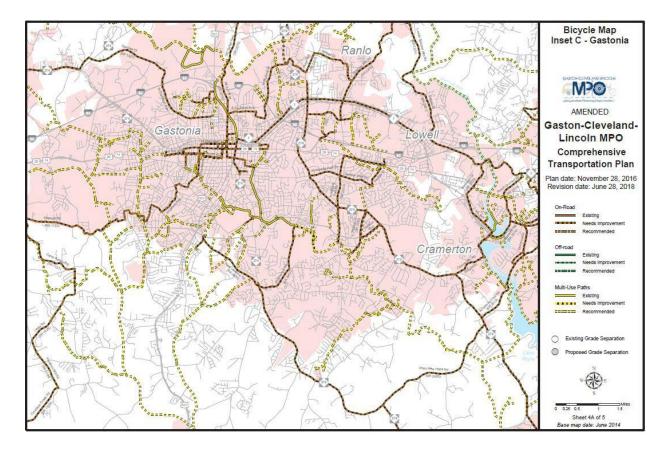
Reviewing previous plans is important to understand the planning context of Hudson and what recommendations have already been memorialized. This section outlines various planning efforts that contain recommendations relevant to the development of this plan. All recommendations listed are summarized from their respective documents.

GCLMPO Comprehensive Transportation Plan

Overview

The GCLMPO Comprehensive Transportation Plan was prepared in conjunction with local counties, towns, and NCDOT. The plan provides recommendations that address current and future travel needs for transportation related decisions for Gaston, Cleveland, and Lincoln Counties based on input gathered from government officials and the public.

- ▶ Implement new multi-use paths along South Fork River and to the west of Lowell
- ▶ Enhance current sidewalk networks and on-road bicycle paths throughout the city
- ▶ Widen and construct major thoroughfares to assist with traffic congestion across adjacent counties
- ▶ Improve the safety of I 85 and its crossings in downtown Lowell

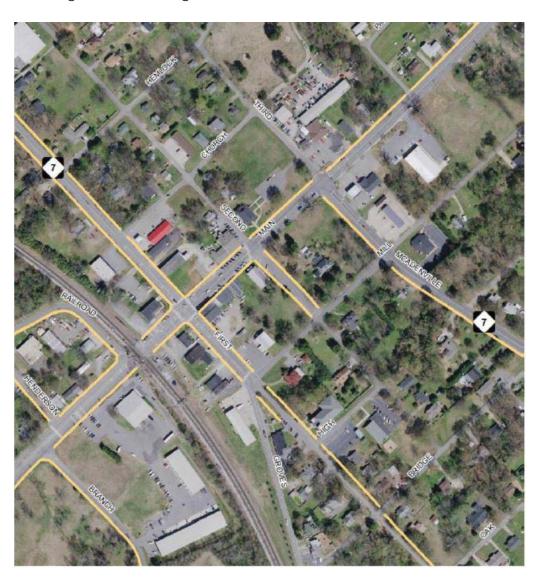


Downtown Lowell Transportation Study

Overview

This study evaluates improvements to the streets of downtown Lowell and considers opportunities to enhance roadway entrances and parking efficiencies downtown. Public involvement was the main driver in identifying and prioritizing transportation improvement goals.

- Improve pedestrian safety and streetscape aesthetics through the implementation of wider sidewalks, accessible curb ramps, shorter pedestrian crossings, larger street trees, narrowed curb lines, and on-street parking realignment
- ▶ Restripe existing pavement width along NC 7 at the following corridors: E 3rd Street/McAdenville Road, Main Street, and N Main Street
- ▶ Construct extensions in downtown Lowell to allow for direct and alternative routes for truck and through-traffic traveling on NC 7



Carolina Thread Trail Master Plan

Overview

As a result a year-long public process, the Carolina Thread Trail Master Plan was written to encourage the implementation of a long-term coordination of greenway and trail development across Gaston County. This first-ever plan promotes a comprehensive multi-use network of existing and proposed trails and greenway segments that will connect people, places, and destinations within and outside the county perimeters.

Relevant Recommendations

- Amend regulations accordingly to ensure enough open space and greenway corridors are available as developments are planned and reviewed
- ▶ Form a Trail Advisory Committee, building off the steering committee who developed the master plan, to promote greenway development and advise the governing group on related issues
- ▶ Classify and maximize local trail opportunities through the development plan review process, land evaluation, utility corridors/ easements, and floodplain regulations
- ► Establish criteria for trail prioritization (i.e. cost, length of trail, location, conservation benefit, etc.)
- ▶ Identify multiple funding sources in accordance to the construction, operation, and maintenance of trail facilities and amenities

CAROLINA THREAD TRAIL MASTER PLAN FOR GASTON COUNTY COMMUNITIES



Weaving Communities Together

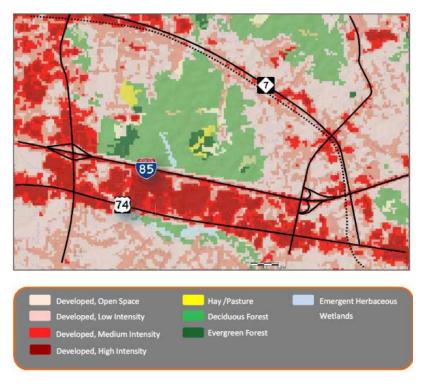
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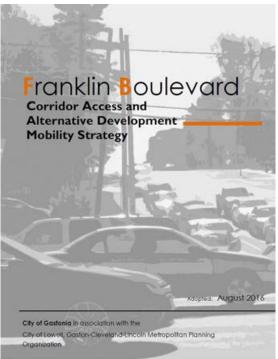
Franklin Boulevard Corridor Access and Alternative Development Mobility Strategy

Overview

The report serves as a tool for the Cities of Gastonia and Lowell, as well as NCDOT, to determine practical strategies for access and growth management along Franklin Boulevard and interconnecting streets. Emphasis is placed on congestion relief and bicycle, pedestrian, and public transportation improvements. The plan carefully takes financial constraints into consideration in its strategic approaches to improve the network's mobility.

- Assess the physical and operational opportunities for safety and mobility enhancements at the following intersections: S Main Street/Redbud Drive at US 29/74; S Main Street at I 85 NB Ramp; and S Main Street at I 85 SB Ramp
- Accommodate for all modes of transportation to create balanced streets through restriping, resurfacing, installing medians, and landscaping
- ▶ Partner with government entities, stakeholders, private developers, and the local community for successful implementation and financial stability



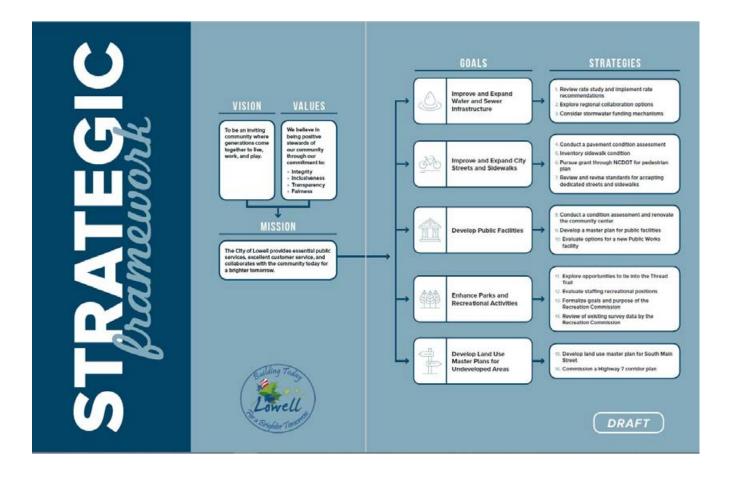


City of Lowell Strategic Plan

Overview

The City of Lowell recently adopted its 2017-2022 Strategic Plan to properly adapt to changing environments while maintaining a quality community. Each of the five goals established in the strategic framework are substantiated with strategies to fulfill the respective goal.

- ▶ Conduct pavement condition and sidewalk inventory assessments
- ▶ Pursue NCDOT grants to assist with the pedestrian plan finances
- ▶ Review and revise current dedicated street and sidewalk standards



GCLMPO Metropolitan Transportation Plan

Overview

This locally-adopted, fiscally-constrained, long-range transportation plan was created to define the transportation network for Cleveland, Gatson, and Lincoln counties. One goal of the plan relating to pedestrian and bicycle transportation is to develop an inclusive system that allows the public to travel using walking, bicycling, aviation, freight, and transit options.

- ▶ Enhance pedestrian and bicycle access along roadways and to transit
- ▶ Improve pedestrian and bicycle safety through public awareness programs
- Advocate for pedestrian and bicyclist linkages to enhance connectivity between neighborhoods, employment centers, services, cultural facilities, schools, parks, businesses, and other important destinations

