

# COMPLETE STREETS PRIORITIZATION PLAN

## LINCOLN, MASSACHUSETTS

January 2023

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## Table of Contents

<b>Introduction</b>	4
MassDOT Complete Streets Funding Program	7
The Town of Lincoln	8
Existing Roadway Network	9
Existing Public Transit	10
Existing Bicycle and Pedestrian Network	12
<b>Methodology</b>	13
Town of Lincoln Plans and Reports	15
Determining Deficient Conditions	20
Safety	20
Level of Comfort	22
Assessing Demand	22
Equity Assessment	27
Community Engagement	31

## List of Figures

Figure 1: Public Transit

Figure 2: Public Transit

Figure 3: Bicyclist & Pedestrian Crash Locations

Figure 4: Points of Interest

Figure 5: Pedestrian Latent Demand .25 & .5 miles

Figure 6: Bicycle Latent Demand 1 mile

Figure 7: Bicycle Latent Demand 2 miles

Figure 8: 2020 Environmental Justice Populations

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## **List of Tables**

Table 1: Commuter Transportation Modes

Table 2: Bicycle and Pedestrian Crashes 2016-2022

## **List of Attachments**

Complete Streets Project Worksheet

# Introduction

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The Town of Lincoln envisions itself as a place where people can feel safe on its roads, roadside paths, and trails regardless of their mode of transportation, their age, or their ability. Additionally, the Town’s work regarding climate change, housing, and diversity supports the goals of this plan to get people outside, to encourage short trips without vehicles, and to welcome visitors to share the Lincoln experience.

Lincoln has approximately 50 miles of public roads and over 80 miles of roadside paths and trails. Many of Lincoln’s roads are narrow and winding with beautiful views to its conservation land and open spaces. The residents of Lincoln value their extensive network of trails and roadside paths, healthy ecosystem, and its local farms. These elements provide residents the opportunity to live, work, and raise their families in a community where a healthy lifestyle of outdoor activity, locally-grown food, and clean air and water are cherished. These features are often associated with a rural lifestyle, however, with 38% of the Town permanently protected for conservation, recreation, and agricultural use, they can be found less than 30 minutes west of Boston. (Town of Lincoln Conservation Land Database, accessed 1/18/17). It is the “rural character” of the Town which attracts cyclists and walkers from the metropolitan area making it a popular regional destination for outdoor activities.

In addition to recreational walking and biking, many residents would prefer to walk or bike to the Town’s services and amenities. A shift from using motor vehicles to using bicycle or walking modes for shorter trips will help the Town reach its Climate Action goals. In 2017, the Town embarked on a Bicycle and Pedestrian Master Planning process to create a more connected, safer, greener, and inclusive network for its residents and visitors. Completed in the beginning of 2023, this Master Planning process used Complete Streets principles and the U.S. Department of

Transportation Federal Highway Administration’s Safe System Approach as its basis.

A Complete Street is one that provides safe and accessible options for all travel modes – walking, biking, transit, and vehicles – for people of all ages and abilities (Complete Streets Funding Program Mass.gov). The ability to have multimodal options to reach work, school, recreation, and retail destinations is essential to promote livable communities. In 2017, the Town of Lincoln adopted a Complete Streets Policy and has accomplished several infrastructure improvements in the first five years of the program. Some of the highlights include:

#### Lincoln Road Sidewalk Construction 2017

This project constructed a section of new sidewalk and filled an important connectivity gap in the Village Center. This allowed residents and in particular area elderly residents to better access shops and amenities.

#### Paved Roadside Path Repair 2018

This project provided repair to the Town’s roadside path network including vital links to desired destinations including the school campus.

#### South Great Road and Lincoln Road Intersection Improvements 2018

This project included a new crosswalk with pedestrian islands and a flashing beacon. It enables people to walk or bike to Drumlin Farm by making it safe to cross Route 117, a busy higher speed road.

#### Lincoln Wayfinding Kiosk and Signage 2018

This project enabled the Town to install a large Informational Kiosk in the Town Center and directional signage to major destinations including the Village Center, Drumlin Farm, and Codman Farm.

#### Lincoln Station Bike Repair System and Bike Racks in new Pocket Park 2018

New bicycle amenities in the Village Center were made possible by this project.

### Magnolia Path phase 1 2021

This project provided the first phase of a new connection between the Village Center and Codman Farm which is a priority destination for residents. Phase 2 will be completed in 2023 and will coordinate with work being done at Codman Farm. Phase 2 will complete the roadside path route and provide an ADA compliant crosswalk to Codman Farm where a new ADA compliant walkway and entrance into the Codman Farm store will be constructed.

### **Complete Streets Prioritization Plan Update**

This second prioritization plan will serve to update the Town's assessment of its needs and to create a list of projects that will further the Town's goals as outlined in its Comprehensive Master Plan, its Open Space Plan, and align with the new Bicycle and Pedestrian Master Plan.

The Town of Lincoln has worked through a volunteer Complete Streets Working Group. The Working Group engaged Lincoln's residents and stakeholders through meetings, surveys, online platforms, and a public comment period. This updated prioritization plan has been reviewed and approved by the Select Board and the Planning Board.

### The Complete Streets Working Group:

Margaret Olson, Planning Board and Bicycle and Pedestrian Advisory Committee

Deborah Howe, Roadway and Traffic Committee

Chris Bibbo, DPW Superintendent

John Vancor, PE Consultant Hayner-Swanson

Tim Higgins, Town Administrator

Paula Vaughn-MacKenzie, Director of Planning and Land Use

## **MassDOT Complete Streets Funding Program**

The MassDOT Complete Streets Funding Program launched in 2016. The program is now permanent and is used by more than half of the communities in Massachusetts. MassDOT's ultimate goal is for all 351 cities and towns in Massachusetts to be involved in the program and to integrate Complete Streets principles into all local transportation planning and design.

The Complete Streets Funding Program is structured with three Tiers:

- Tier 1 – Complete Streets Training and Policy Development

A municipality develops and approves a Complete Streets Policy. The Town of Lincoln adopted a Complete Streets policy in 2017.

<https://www.lincolntown.org/DocumentCenter/View/72706/Complete-Streets-Policy-2017>

- Tier 2 – Complete Streets Prioritization Plan

The municipality develops a Complete Streets Prioritization Plan. The Town's initial prioritization plan was developed and approved by MassDOT in 2017.

- Tier 3 – Project Construction Funding

Municipalities are eligible to receive up to \$400,000. in any rolling four-fiscal-year period.

A community may update their prioritization plan when there has been successful implementation, a change in local priorities through public engagement, new Complete Streets design guidance, and/or new funding opportunities. The Town of Lincoln is updating its prioritization plan due to successful implementation of many of the projects contained in its original

plan as well as an update in priorities to align with the 2023 Bicycle and Pedestrian Master Plan.

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## **The Town of Lincoln**

The Town of Lincoln has a storied agricultural history. Lincoln transformed from a small farming community to a suburban town while keeping its working farms and rural character. In addition to supporting agriculture, Lincoln's conservation efforts have made it a leader and a model for other communities. This has been achieved by a commitment from its citizens as well as regional partners including: the Lincoln Land Conservation Trust, Rural Land Foundation, Minute Man National Historical Park, Walden Woods Project, Walden Pond State Reservation, Massachusetts Audubon Society, Great Meadows National Wildlife Refuge, and the Cambridge Water Department. Lincoln is located west of Boston and is considered a residential commuter town. With a population of approximately 7000 residents, it retains its rural character despite being eighteen miles from Boston (US 2020 Decennial Census).

The Town has prioritized open space protection and has promoted preserving conservation, agricultural, and recreational lands. (Comprehensive Plan 2009). To that end, the Town has developed a large trail network that encourages outside recreation. (Updated Open Space Plan 2017). In 2017, The Select Board appointed the Bicycle and Pedestrian Advisory Committee to create a Master Plan to develop a safe connected network of roads, roadside paths, and trails to encourage walking and biking to the Town's services, amenities, and popular destinations. One of the major goals of the new Bicycle and Pedestrian Master Plan is to create a network that is safe and comfortable for all users, regardless of age or ability.

Lincoln's Village Center is the commercial center of the town with a MBTA commuter rail stop on the Fitchburg Line. The Town's vision for this area is

to “create a compact, vital, walkable village center in the Lincoln Station area that provides more housing choices near public transportation, goods and services for residents, and opportunities for social interaction.”

(Comprehensive Plan 2009). The Town is working to create this walkable, bikeable, village center by encouraging appropriate development of mixed use and residential units. Projects must take into consideration how pedestrians and bicyclists circulate safely in this area as well as establish infrastructure such as wider roadside paths, seating, and other streetscape improvements.

The interrelated objectives of conservation, outside recreation, creating a connected transportation network, mitigating climate impacts, addressing accessibility, and developing a walkable and bikeable Village Center provides the basis for the prioritization plan. Projects enabling multi-modal transportation and increased comfort and safety of those driving, taking public transportation, walking, and biking throughout Town for all users, regardless of ability, will in turn further these goals.

## **Existing Roadway Network**

The Town of Lincoln is bisected by two major routes. Route 2 is a 142.29 mile-long major east-west state highway. There are several frontage roads on Route 2, but today all are dead ends serving residences. Route 2 is a major barrier for neighborhoods to the south to access popular destinations such as Minute Man National Historical Park and popular cycling routes to Concord. Route 2 is a barrier to neighborhoods to the north to access the services and amenities of the Town. The one available crossing is at Bedford Road which is a high speed intersection without adequate, safe crossing access.

Route 2A (North Great Road) also runs east-west and is north of Route 2. Route 2A services neighborhoods in north Lincoln as well as Hanscom Air Force Base and Hanscom Civil Air Terminal. It also creates a barrier to bicycle and pedestrian access. The highest bicycle crash rate in Town is

located at the intersection of Bedford Road and Route 2A. (MassDOT Crash Data).

There are three two-lane state numbered highways that run through Lincoln:

Route 117 (South Great Road) runs east-west between Weston and Concord and serves as a barrier to neighborhoods to the south to access the services and amenities of the Town including the Village Center.

Route 126 (Concord Road) runs north-south between Concord and Wayland. It is a popular commuter route and provides access to Walden Pond.

The other arterial roads in Lincoln are:

- Bedford Road/Lincoln Road which forms the Institutional Corridor. The Institutional Corridor runs from the Wang Recreation Field at the northernmost end of Bedford Road to the Public Safety Building at the southernmost point. This corridor contains most of the Town's services, amenities, its school, and the Village Center; and
- Trapelo Road which runs from Route 95 into Lincoln and is a heavily used commuter route.

The remaining roads in Lincoln are local roads (through streets with moderate traffic) and neighborhood roads (low traffic streets that serve residences).

## **Existing Public Transit**

Lincoln is serviced by the MBTA Fitchburg line and has one stop in the Village Center. The Fitchburg line runs between Wachusett and North Station in Boston. Pre-pandemic, Lincoln had the second highest ridership on the Fitchburg line. The stop is not ADA compliant and does not have shelters.

Lincoln is also serviced by the MBTA 76 bus which runs from Alewife to the Civil Air Terminal at Hanscom. There are only two stops within Lincoln, one at the Civil Air Terminal and the other at Old Bedford Road and Hanscom Drive. The bus brings commuting workers from Alewife to Hanscom and Lincoln Labs but does not provide transportation to the residents of Lincoln to access points of interest in the town.

The MBTA stop and the 76 Bus route and stops are shown on Figure 1.

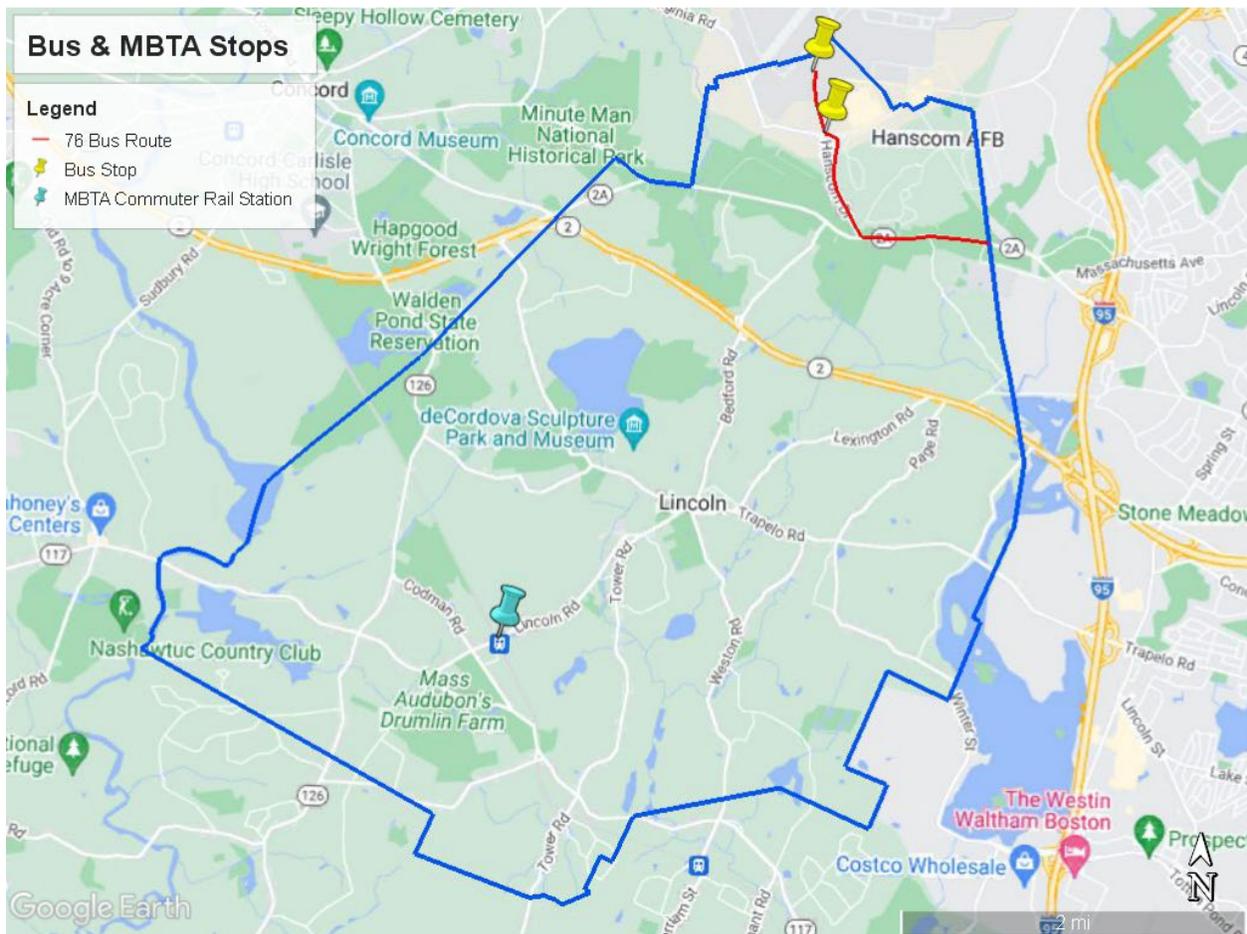


Figure 1

## Commute to Work

The most common mode of transportation for work is to drive alone. 66.5% of residents commute by car alone. A significant percentage of residents work from home. 19.4% of residents work from home and this number

most likely increased due to the Covid-19 pandemic. Public transportation is used by 7.2% of residents and 2.7% walk to work. The mean travel time to work is 32.8 minutes. (American Community Survey 2020).

Table 1 shows commute modes of transportation.

Commute Mode of Transportation	Percentage of Workers
Driving alone	66.5%
Work from home	19.4%
Public transportation	7.2%
Walking	2.7%

Table 1

Average Travel time = 32.8 minutes

## Existing Bicycle and Pedestrian Network

Lincoln has an extensive trail network with over 80 miles of trails owned by either the Town or the Lincoln Land Conservation Trust. There are approximately ten miles of roadside paths. Difficulty in pursuing easements as well as increased costs has left many gaps and maintenance issues. There are no dedicated bicycle lanes on any roads in Lincoln.

The Bicycle and Pedestrian Advisory Committee (BPAC) with the support of many town boards and committees including the Roadway & Traffic Committee, the Planning Board, the Green Energy Committee, and the Conservation Commission, developed a Bicycle and Pedestrian Master Plan. This Plan outlines a framework for developing a more connected, safer, and greener infrastructure to encourage more walking and biking, especially for shorter trips to desired destinations. This prioritization plan builds on BPAC’s work, and utilizes the following methodology to prioritize projects that will align with the Town’s goals.

## Methodology

The Complete Streets Working Group looked at existing conditions to determine the Town's pedestrian and bicycle infrastructure and where it can be improved, what the residents viewed as priorities, and where demand exists for both bicyclists and pedestrians. Emphasis was placed on connecting neighborhoods to the Institutional Corridor as defined in the new Bicycle and Pedestrian Master Plan. The Institutional Corridor runs along Bedford and Lincoln Roads and contains most of the public services and amenities of the Town. These destinations include the Wang Field, Bemis Hall, the Library, Town Offices, the Elementary and Middle school Campus as well as the Village Center commercial area and the Public Safety Building. A new Community Center which will house the Council on Aging and Community Services slated for the School Campus is currently in the design process.

The Institutional Corridor and major roadways are shown in Figure 2

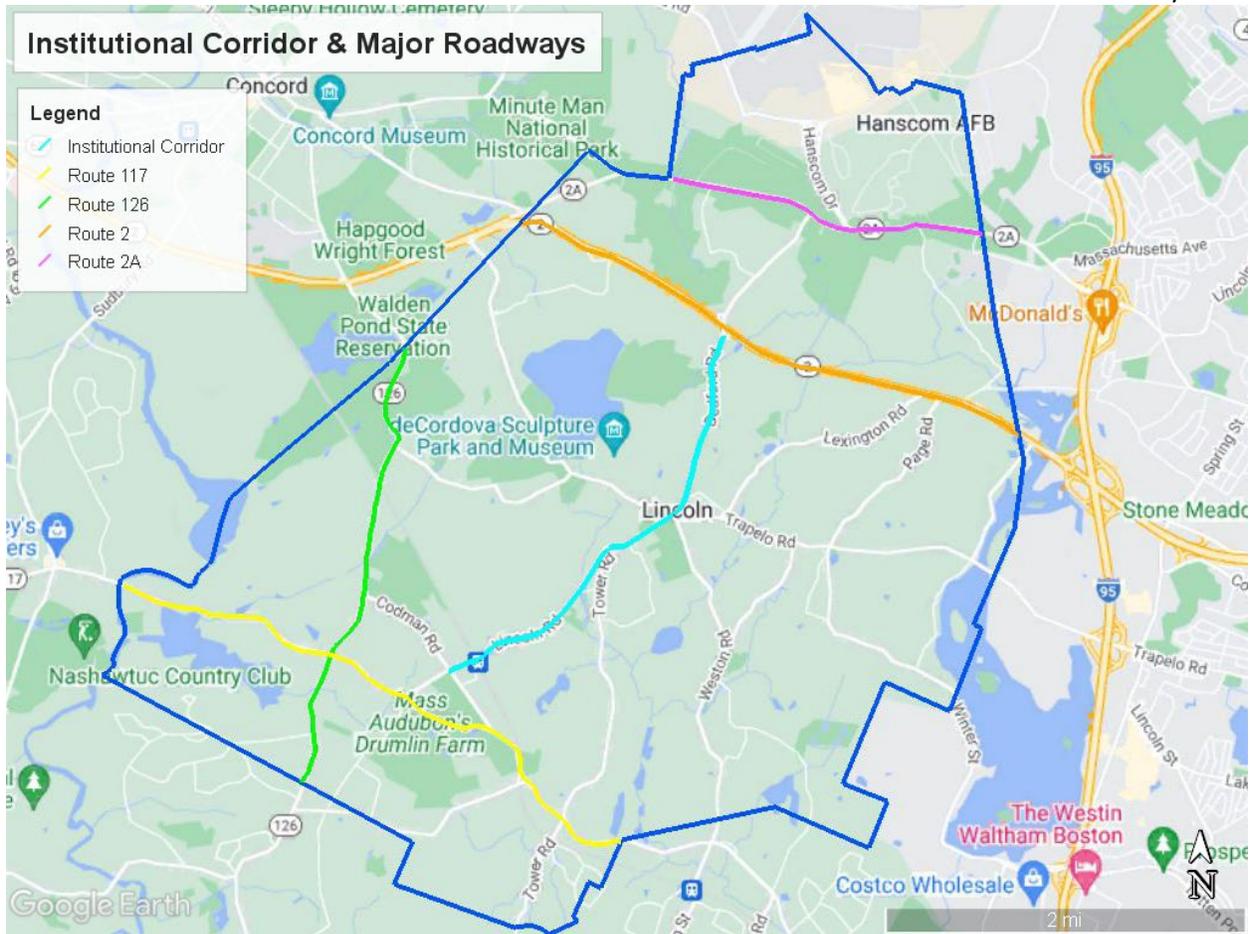


Figure 2

The analysis next determined where conditions are unsafe or uncomfortable for residents regardless of age or ability. Public input was solicited from both online surveys and platforms as well as public meetings and forums. An equity assessment focused on Lincoln's Environmental Justice Communities (as determined by the 2020 Census) as well as neighborhoods most in need of improvements because of access issues and infrastructure deficiencies. Lastly, this plan examines latent demand by analyzing reasonable walking and biking distances to town services, amenities, and other points of interest.

We began our analysis by reviewing previously completed plans, studies, and reports that support and inform current Complete Streets goals and principles.

## Town of Lincoln Plans and Reports

### Bicycle and Pedestrian Master Plan 2023

The Plan uses Complete Streets principles and the Safe System Approach as the foundation to create a safe, accessible, inclusive, and connected network for all users, regardless of age or ability.

The Bicycle and Pedestrian Master Plan divides the town into quadrants and focuses on connecting all neighborhoods to the Institutional Corridor.

The goals outlined in the plan seek to

- Make Lincoln Safer by protecting vulnerable road users (pedestrians and cyclists) on Lincoln's roads, roadside paths, and wooded trails;
- Make Lincoln Greener by reducing reliance on cars for commuting to work, getting to school, shopping in the Village Center, and attending local events by providing connections from all neighborhoods to the town's Institutional Corridor; and
- Make Lincoln more Inclusive by encouraging cyclists and pedestrians from inside and outside Lincoln and ensuring safer connected routes within the Town and to adjacent towns and destinations.

### Village District Traffic Assessment 2020

<http://www.lincolntown.org/DocumentCenter/View/65207/19055-Traffic-Study-123020--Final?bidId=>

A traffic study was conducted in the Village Center to anticipate traffic impacts from possible rezoning of the area as the South Lincoln Village District to include increased build out of mixed use and residential units. The study reviewed traffic impacts at key intersections as well as pedestrian connectivity as potential zoning could promote mixed-use transit oriented developments.

The study noted that there are sidewalks on both sides of Lincoln Road east of the railway crossing, while west of the rail crossing there was only a sidewalk on the south side of the road. There are five unsignalized pedestrian crossings across Lincoln Road within the downtown area. There are no bicycle lanes on Lincoln roads.

The gap in pedestrian access on the south side of Lincoln Road was filled by a new multi-use path funded by Complete Streets and finished in 2022.

Recommendations from the report included:

1. To improve pedestrian accessibility in the downtown area, the number of unsignalized, mid-block crosswalks along Lincoln Road should be consolidated.
2. Proper pedestrian crossing warning signs should be implemented as well as appropriate handicap-accessible wheelchair ramps.
3. Rectangular Rapid Flashing Beacons should be installed at remaining crossings.
4. The Lincoln Road/Codman Road intersection should be monitored for increased delays and or accident experience.

Town of Lincoln Complete Streets Policy 2017

<https://www.lincolntown.org/DocumentCenter/View/72611/Complete-Streets-Policy-2017>

The Town's Complete Streets Policy recognizes that all roadway and roadside path projects are opportunities to implement complete streets principles. The Town is committed to continuing its work to plan, design and construct projects that will provide a comprehensive and integrated street network of facilities that are appropriate for all ages and abilities. The Town will continue to prioritize public outreach to identify initiatives and emphasize the efficient connections between home, school, work, transit, recreation, and retail destinations for all modes of transportation.

The policy provides that design flexibility is key in maintaining context sensitivity to the rural character of the town and its roadways. The

guidance contained in the most recent versions of the following documents will be incorporated.

- Lincoln Roadside Study, Regional LAND Program, 1980
- Report of the Roadside Path Master Plan Committee, 1986
- Town of Lincoln Roadway Management Study, 1997
- Lincoln's Roadsides, Lincoln Garden Club, 2009
- Town of Lincoln Healthy Community Project, Roadside Path Task Force, 2011
- The Massachusetts Department of Transportation Project Design and Development Guidebook
- The United States Department of Transportation Federal Highway Administration's Manual on Uniform Traffic Design Controls
- The Architectural Access Board (AAB) 521 CMR Rules and Regulations
- The latest edition of American Association of State Highway and Transportation Officials (AASHTO) A Policy on Geometric Design of Highway and Streets
- Footprint Design Manual for Local Roads, American Society of Civil Engineers

#### Lincoln Open Space Plan 2017

<http://www.lincolntown.org/DocumentCenter/View/27081/2017-Town-of-Lincoln-Open-Space-and-Recreation-Plan?bidId=>

Lincoln has approximately 80 miles of trails and 10 miles of roadside paths. Roadside paths can be located on municipal purposes land, conservation land, and private property and are maintained by the Department of Public Works. Many trails are on privately owned land with trail easements or licenses and are maintained by the organizations holding the easement or license.

There are multi use trails used by walkers, horseback riders, runners, bicyclists, dog walkers, naturalists, cross country skiers, snow shoers and

others. There are currently three ADA accessible trails in Lincoln: Harrington, Minute Man National Historical Park, and Mass Audubon.

Many people from the Greater Boston area take advantage of Lincoln's open space and trail network. The Conservation Department and the Lincoln Land Conservation Trust host a variety of nature walks, talks, and outings on conservation land.

The 2017 Open Space and Recreation Plan goals for the Town of Lincoln are:

1. Identify, acquire, and protect land for agricultural, conservation, habitat protection, and recreation.
2. Steward conservation, agricultural, and recreational lands to promote long-term sustainable production, ecological diversity and resiliency, and community access.
3. Promote appropriate public access to, and use of, open space and recreation lands.
4. Educate residents and local officials about best practices for achieving open space and recreation goals. Coordinate on programs and policies at the local and regional level.

Lincoln Housing Plan 2014

[http://www.lincolntown.org/DocumentCenter/View/6772/03-28-2014\\_HOUSING\\_PLAN?bidId=](http://www.lincolntown.org/DocumentCenter/View/6772/03-28-2014_HOUSING_PLAN?bidId=)

Lincoln's Housing Plan outlines its initiatives, goals, and recommendations:

1. Develop a proactive strategy for planning and developing a diverse housing supply for low and moderate income people and for people with incomes up to 150% of median income.
2. Strengthen Lincoln's capacity to preserve, develop, and manage its affordable housing.
3. Provide ongoing education about housing needs in Lincoln in order to build and maintain community support for local initiatives.

The plan notes that unlike most Massachusetts cities and towns, Lincoln has provided affordable housing entirely through its own local initiatives. Lincoln has achieved in excess of 10% affordable housing goal without the need to issue any Chapter 40B Comprehensive Permits. Lincoln continues to be at the forefront of developing affordable housing and committing to economic, racial, and cultural diversity.

Town of Lincoln Comprehensive Plan 2009

[http://www.lincolntown.org/DocumentCenter/View/203/Lincoln-Comprehensive-Plan\\_Rev-10-14-09?bidId=](http://www.lincolntown.org/DocumentCenter/View/203/Lincoln-Comprehensive-Plan_Rev-10-14-09?bidId=)

Lincoln's transportation goals focus on "increasing the town's investment in maintaining and expanding the roadside paths, exploring ways to increase safety and access for bicyclists, and providing more transportation choices for Lincoln residents, especially those for whom driving is not an option." (Transportation and Circulation p.12) The Goals and Recommendations include:

- Increase the safety of Lincoln's roadways by implementing traffic-calming measures to manage vehicle speeds.
- Encourage the use of both motorized and non-motorized modal alternatives for intra- and inter-town transportation by improving access to Lincoln's pedestrian and bicycle infrastructure and exploring the feasibility of expanding bicycle access to the trail network.
- Encourage ridership on the MBTA commuter rail

Land Use & Zoning Goals include creating a compact, vital, walkable village center in the Lincoln Station area that provides more housing choices near public transportation goods and services for residents, and opportunities for social interaction.

## Determining Deficient Conditions

To determine locations where improvements are necessary or desirable, the Working Group reviewed a series of data. Safety of all road users is a major driver of the prioritization process.

### Safety

To evaluate the level of safety of the roadways, the most recent crash data from 2016-2022 including motor vehicle, bicycle and pedestrian crashes were examined. The crash data was taken from the MassDOT crash data portal and the Lincoln Police crash data.

In the last ten years there have been 28 pedestrian and bicyclist crashes in Lincoln, two of which were fatal. Twenty three crashes caused some level of injury to the pedestrian or bicyclist. All but one of these incidents occurred during daylight hours, on a clear day with dry roads. Additionally, in 2020 and 2021, in two separate incidents, drivers struck children riding bicycles in crosswalks. The two most dangerous intersections in town for bicyclists and pedestrians are Ballfield Road and Lincoln Road, and Bedford Road and Route 2A. This data from the MassDOT portal does not include near misses or any incidents not reported to the police. In addition, there have been 18 vehicle crashes at the intersection of Route 2 and Bedford Road between 2017 and 2019.

Figure 3 shows the locations of Bicycle & Pedestrian crashes.

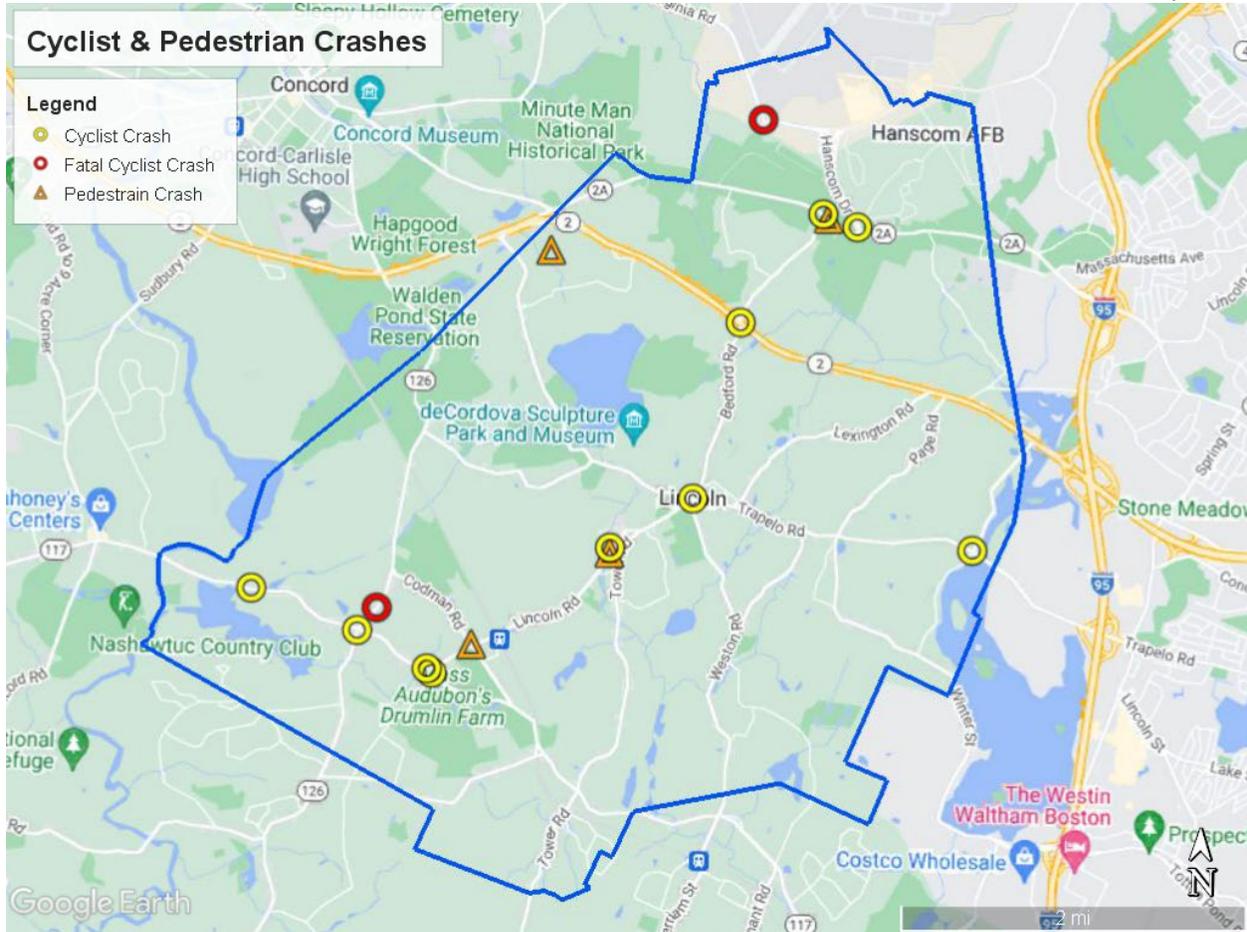


Figure 3

Locations with high crash incidents have a higher priority in this plan.

Table 2 shows bicycle and pedestrian crashes between June 2016-May 2022

Date	Crash severity	Injury Severity	Location	Non-Motorist Type
06/16/2016	Fatal injury	Fatal injury (K)	Concord Road & Hillside Road	Cyclist
08/19/2016	Non-fatal injury	Non-fatal injury - Non-incapacitating	South Great Road & Mt Misery	Cyclist
08/16/2016	Non-fatal injury	Non-fatal injury - Non-incapacitating	Rte 2 & Bedford Road	Cyclist
08/17/2016	Fatal injury	Fatal injury (K)	Virginia Road & Minuteman Commons	Cyclist
08/31/2017	Non-fatal injury	Non-fatal injury - Non-incapacitating	South Great Road & Lincoln Road	Cyclist
05/30/2018	Non-fatal injury	Non-fatal injury - Incapacitating	Rte 2A & Bedford Road	Pedestrian

<b>07/04/2018</b>	Non-fatal injury	Non-fatal injury - Non-incapacitating	Lincoln Road & Ballfield Road	Pedestrian
<b>03/31/2019</b>	Non-fatal injury	Non-fatal injury - Possible	Hanscom Drive prior to 2A	Cyclist
<b>06/19/2019</b>	Non-fatal injury	Suspected Minor Injury (B)	Trapelo & Old County Road	Cyclist
<b>11/13/2019</b>	Non-fatal injury	Possible Injury (C)	Codman Rd & Lincoln Road	Pedestrian
<b>11/14/2019</b>	Non-fatal injury	Suspected Minor Injury (B)	Concord Rd & South Great Road	Cyclist
<b>12/30/2020</b>	Property damage only (none injured)	No Apparent Injury (O)	Five Way	Cyclist
<b>04/14/2021</b>	Property damage only (none injured)	No Apparent Injury (O)	Ballfield Road	Cyclist
<b>10/23/2021</b>	Non-fatal injury	Suspected Minor Injury (B)	Lincoln Road & South Great Road	Cyclist
<b>04/10/2022</b>	Non-fatal injury	Suspected Serious Injury (A)	Rte 2A & Bedford Road	Cyclist
<b>05/05/2022</b>	Non-fatal injury	Possible Injury (C)	Harvest Circle	Pedestrian

Table 2

Posted speed limits are another tool to evaluate safety. Speed limits for roads owned by the Town in Lincoln range from 25 miles per hour to 35 miles per hour. Higher speeds are found on Routes 2 and 2A. See Appendix I for a list of roadways and corresponding speed limits.

## Level of Comfort

The level of comfort people feel as they walk and bike is an important component of evaluating safety. To improve our bicycle and pedestrian transportation network, we must assess both bicycle and pedestrian levels of comfort. Level of comfort was established by public outreach which included a townwide survey and a public forum. This is explained in more detail under the Community Engagement section.

## Assessing Demand

### Points of Interest

The plan considers the question of where do people need or want to go to work, shop, go to school and recreate? Destinations include the many

services and amenities located within the Institutional Corridor including Public Safety, the Village Center, the Lincoln Schools (and future home of the Community Center), the Town Offices, the Council on Aging and Human Services, the Library, and the Wang Field. Points of interests also include popular destinations such as Drumlin Farm, Codman Farm, the Codman Estate, and de Cordova Museum, as well as popular recreation areas such as Mount Misery and Minute Man National Historical Park.

Figure 4 shows some of these locations:

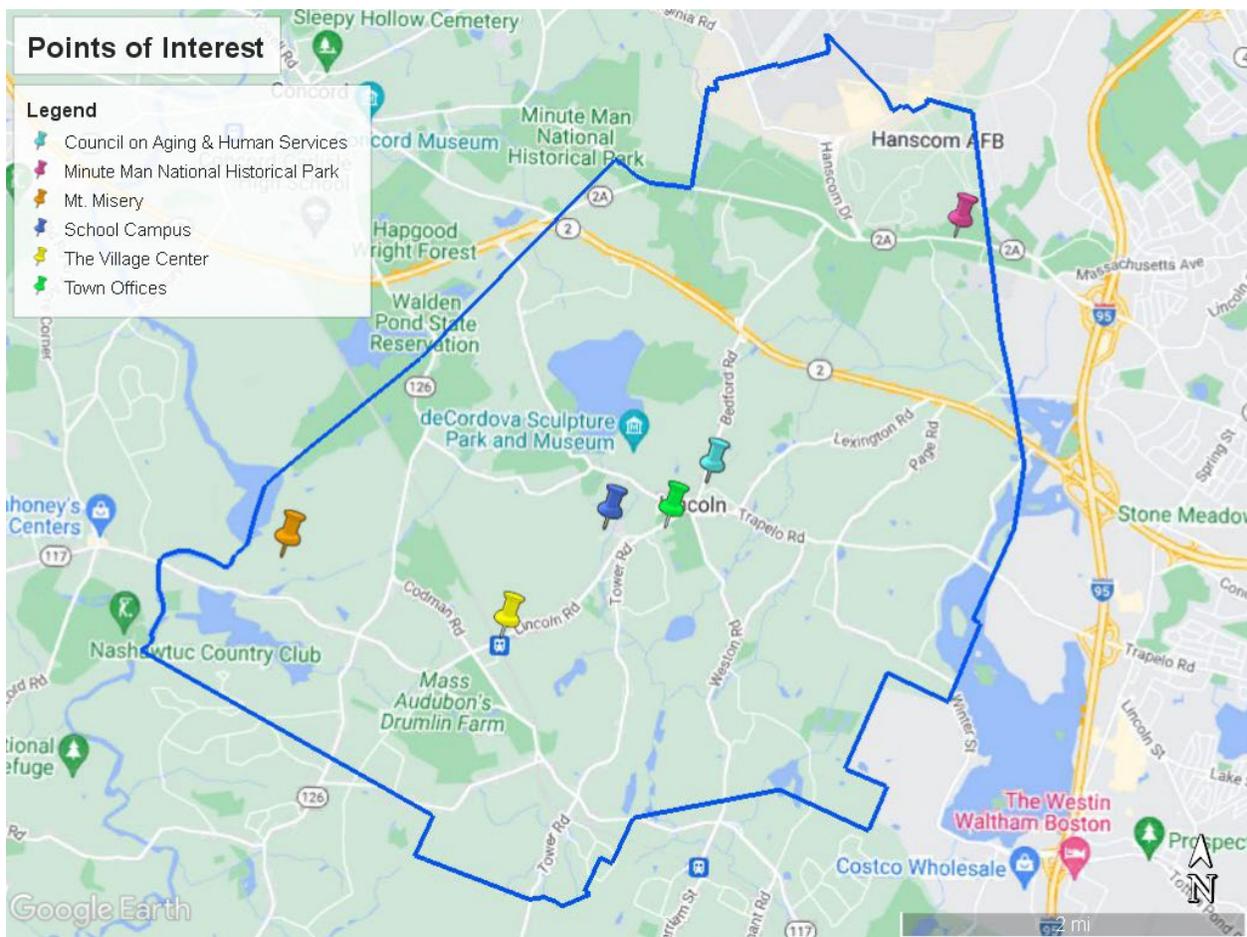


Figure 4

## Latent Demand

In order to assess demand, the working group reviewed data related to latent demand defined as the reasonable distance someone would walk or

bike to a desired destination or point of interest. For purposes of this plan, latent demand for pedestrians is .5 miles and latent demand for bicyclists is 2 miles. Projects that are consistent with the Complete Streets criteria of demand for pedestrians at .25 miles and for bicyclists at 1 mile will have a higher priority.

The following maps show pedestrian and bicycle latent demand as circles around the main services contained in the Institutional Corridor:

- The Village Center: which contains the town's commercial area as well as Codman Farm which sells local produce and meat.
- The Elementary and Middle School Campus: which will also house the future Community Center and Council on Aging and Human Services
- The Town Offices
- Bemis Hall which currently contains the Council on Aging and Human Services
- Minute Man National Historical Park and Mount Misery: which are popular recreational facilities.

Figure 5 shows Pedestrian Latent Demand at the .25 and .5 mile radii

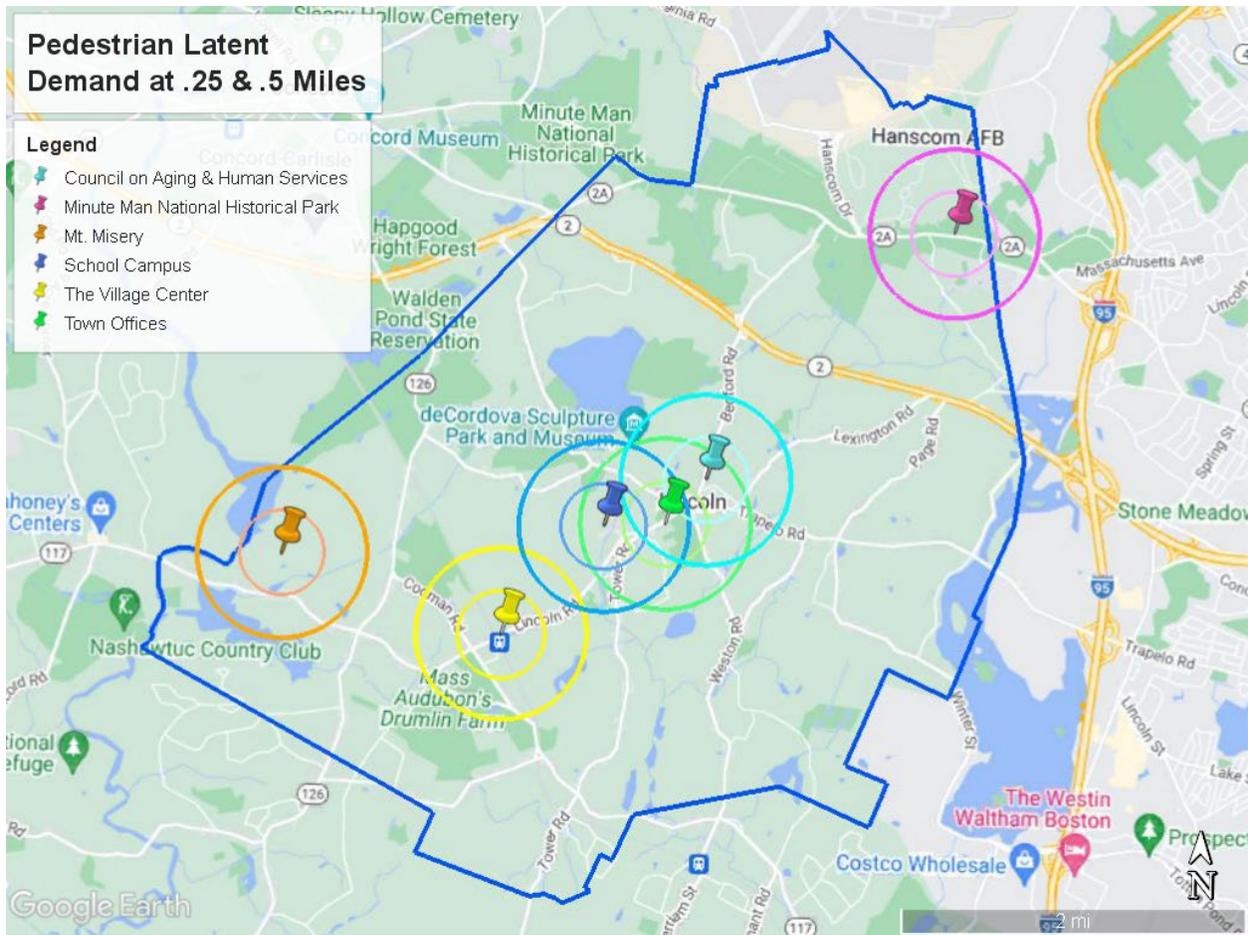


Figure 5

Figure 6 shows Bicycle Latent Demand within a 1 mile radius

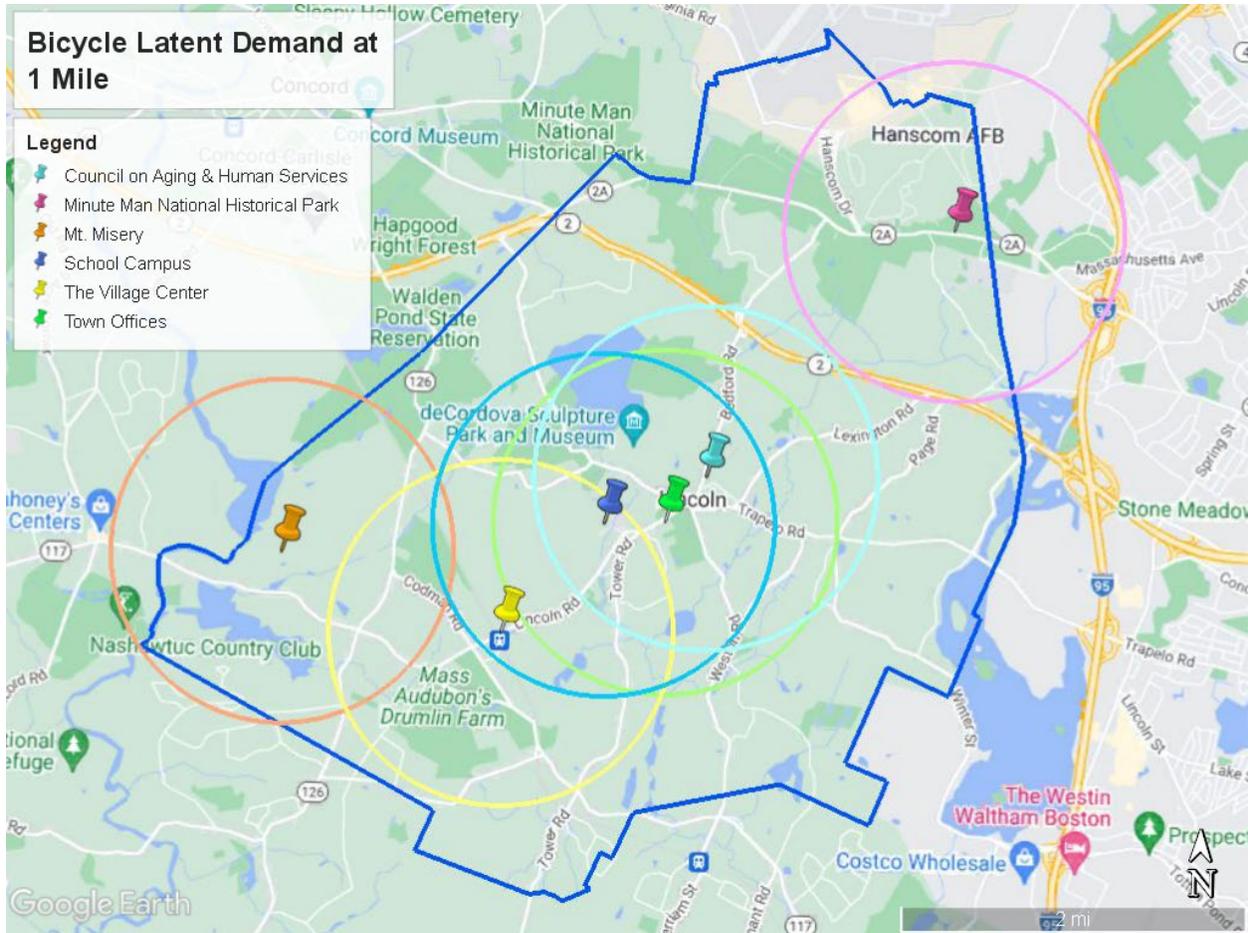


Figure 6

Figure 7 shows Bicycle Latent Demand within a 2 Mile radius

It is self-evident that a two mile radius covers most of the town so that a safe and connected network would allow all residents the option of biking to desired destinations no matter where they live in town.

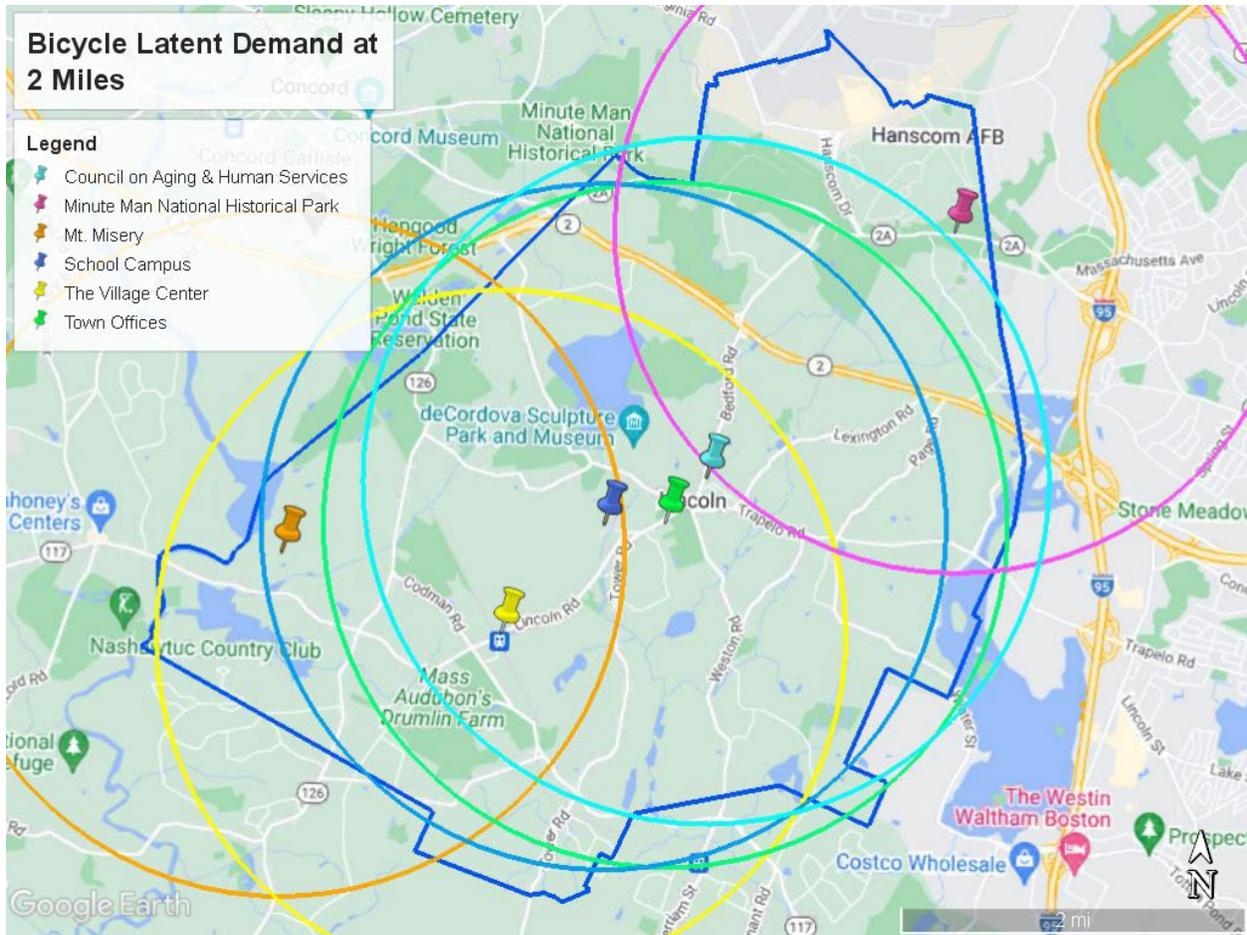


Figure 7

## Equity Assessment

This prioritization plan was created with an equity lens and prioritizes Lincoln's underserved communities. To ensure equitable distribution of resources, residents within environmental justice neighborhoods and those with disabilities were considered. Data from the 2020 Census as well as the American Community Survey 5 year estimates were used to determine

these neighborhoods and communities and to incorporate their feedback and prioritize needs.

### Environmental Justice Communities

There are two state-designated environmental justice populations within Lincoln. Block Group 1 tract 3601 is part of Hanscom Air Force Base. This area has a 31.7% minority population. In 2019, this block group had a population of 1,973 in 554 households equal to 31.7% of Lincoln's total population. Although Hanscom AFB is not subject to Lincoln's land use regulatory authority, its residents live, work, and raise their families in Lincoln. The residents in this census tract are cut off from the Institutional Corridor by Route 2A and Route 2.

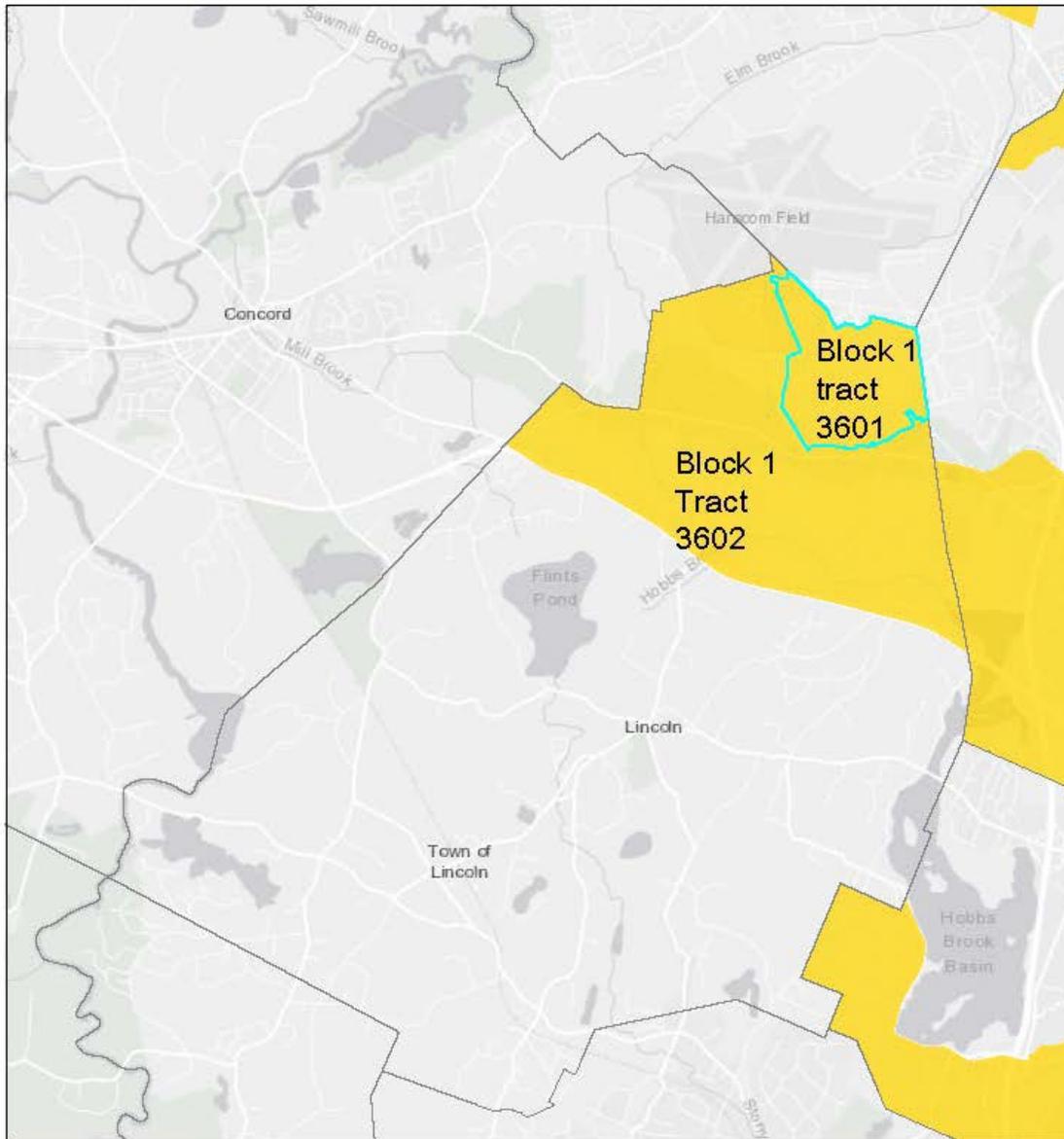
Block Group 1, Census Tract 3602 is also located in north Lincoln. This area is located north of Route 2 and is cut off from the Institutional Corridor by both Route 2 and Route 2A. These residents have a 28.6% minority population with 8.5 % of households having language isolation. In 2020, this block group's population was 747 in 343 households equal to 10.6% of Lincoln's total population.

Figure 8 below shows the locations of the two block groups.

<https://www.mass.gov/info-details/massgis-data-2020-us-census-environmental-justice-populations>

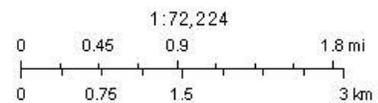
Figure 8

### 2020 Environmental Justice Populations



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MA Municipalities



Esri, HERE, MassGIS, Esri, HERE, Garmin, GeoTechnologies, Inc., USGS, EPA

MA Executive Office of Energy and Environmental Affairs  
MassGIS, Esri, HERE, Garmin, GeoTechnologies, Inc., USGS, EPA | Esri, HERE | EEA GIS |

## Persons with Disabilities

This plan considers persons with disabilities based on American Community Survey (ACS) Five-Year 2020 data, respondents that report any of the following types of disability: vision, hearing, cognitive, ambulatory, self-care, and independent living difficulty. ACS data shows that 11.6% of the population responded as having a disability with 65% of those being over the age of 65. This plan will prioritize projects that connect to or expand pedestrian facilities near locations where people with disabilities, especially the elderly, are expected to travel. All projects will be constructed with compliance to ADA standards as required by the Complete Streets program.

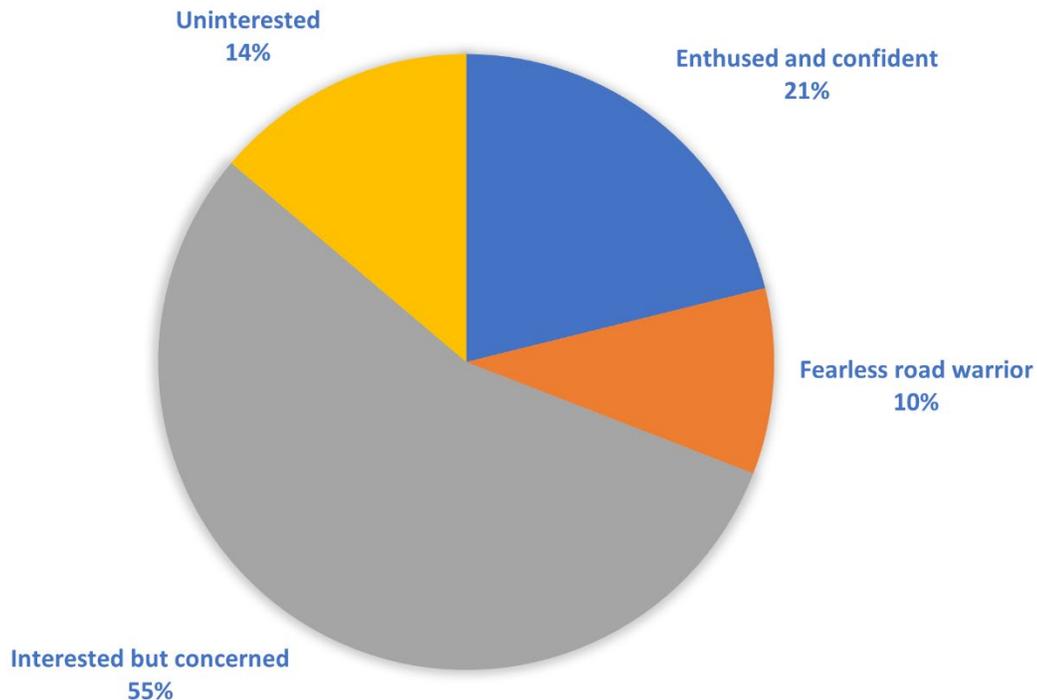
## Community Engagement

As part of public outreach, the Town employed wikimapping, an online portal where people can indicate locations of concern for all modes of transportation and leave explanatory comments. In addition, a short survey was included to assess levels of comfort walking and biking to desired destinations. The portal was open for approximately six weeks and generated over 200 responses with the following results:

1. Most adults expressed an interest in using bicycles as a mode of transportation. Only 14% noted that they were not interested. The majority stated that they were interested but concerned which confirms the premise that focusing on the family cyclist will serve the most people.

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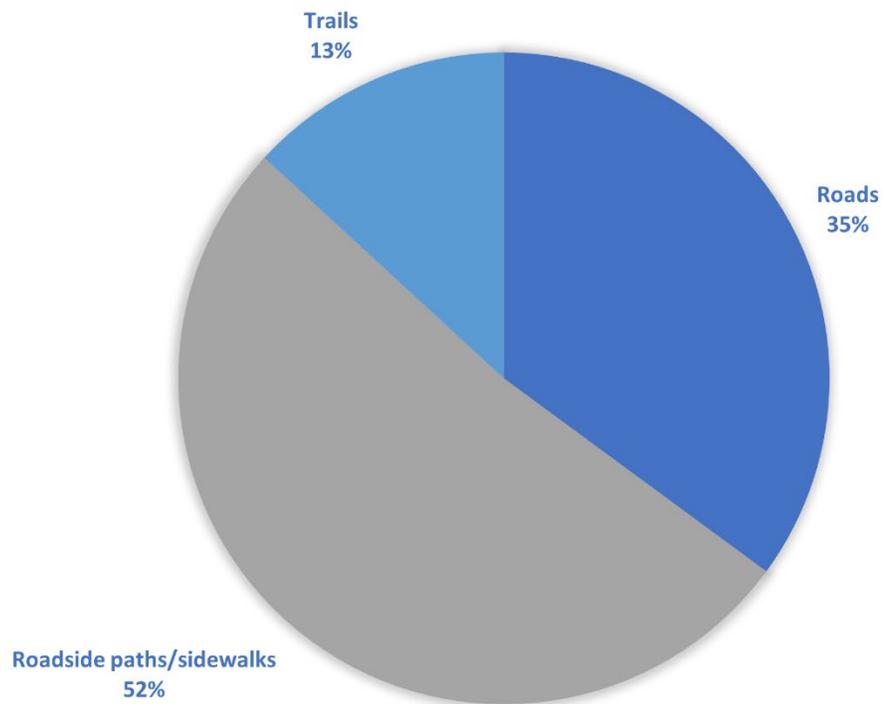
### WHAT IS YOUR COMFORT LEVEL ON A BIKE?



2. While many people indicated comfort riding on either the road or roadside paths, More than half of the respondents prefer riding on roadside paths.

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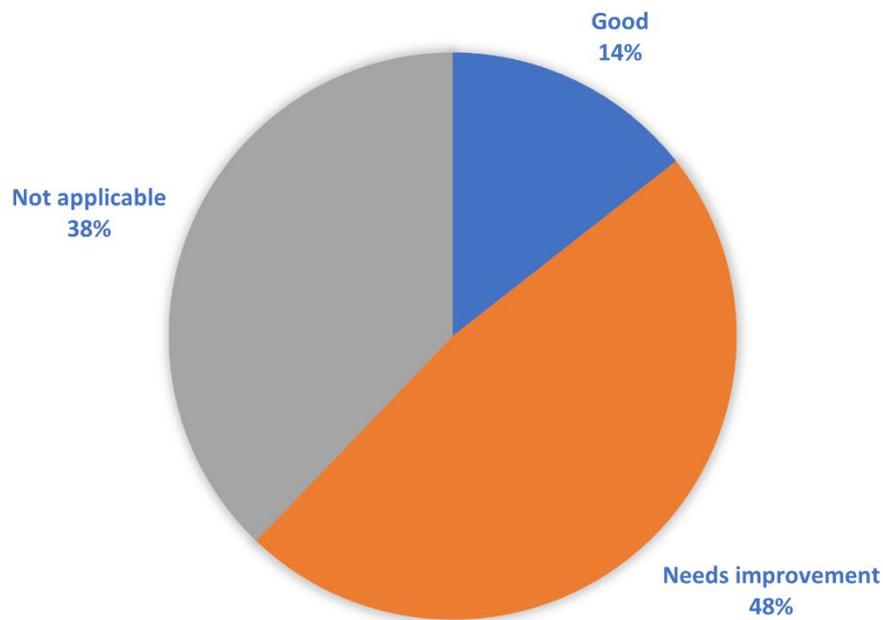
**WHICH OF THE FOLLOWING ARE YOU MOST COMFORTABLE RIDING ON?**



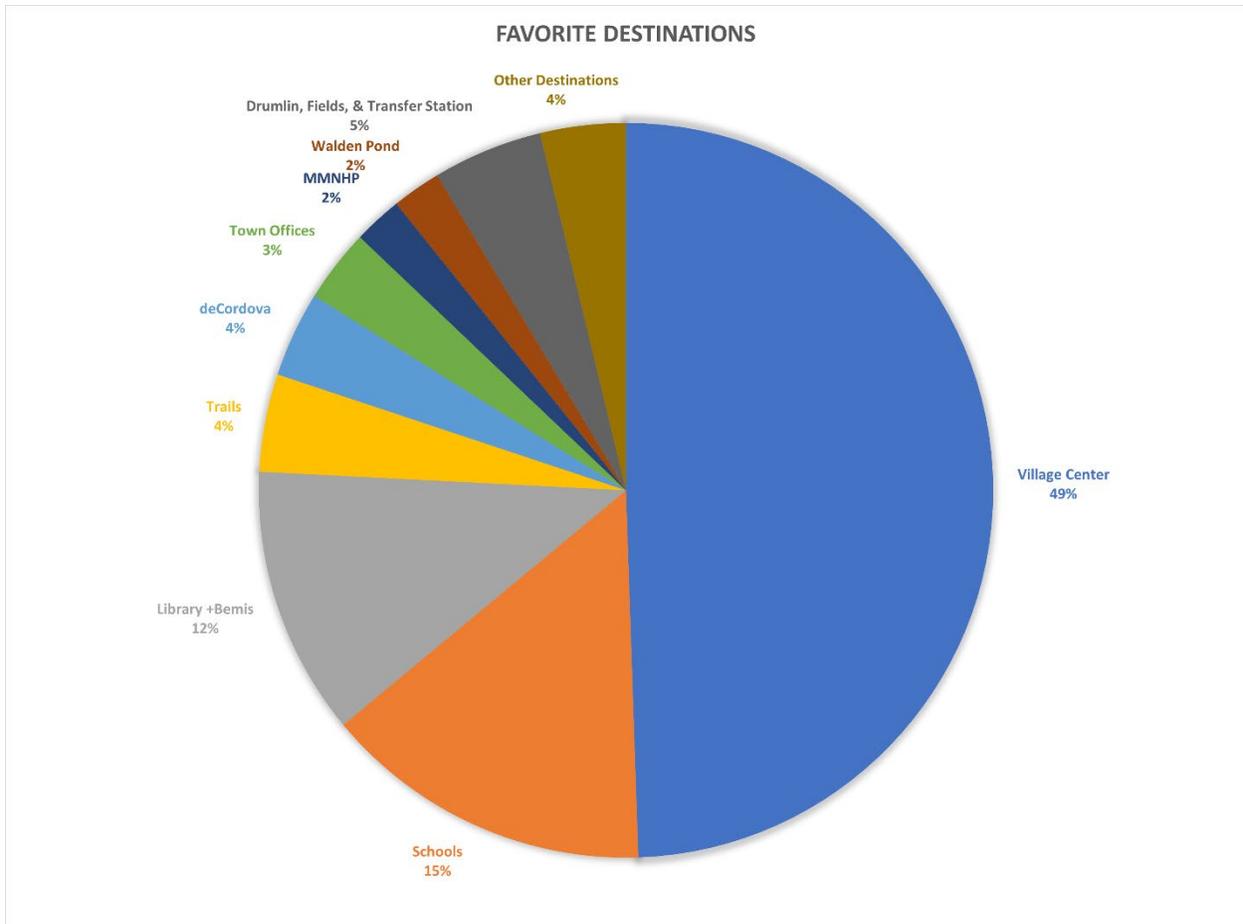
3. When asking how comfortable people felt allowing their children to walk or bike to school, most thought the routes needed improvement.

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**WHAT IS YOUR COMFORT LEVEL WITH YOUR CHILD WALKING/BIKING TO SCHOOL?**



4. The Survey also asked residents to list their favorite destinations. The chart below shows that residents' preferences correspond with our analysis in the Assessing Demand section.



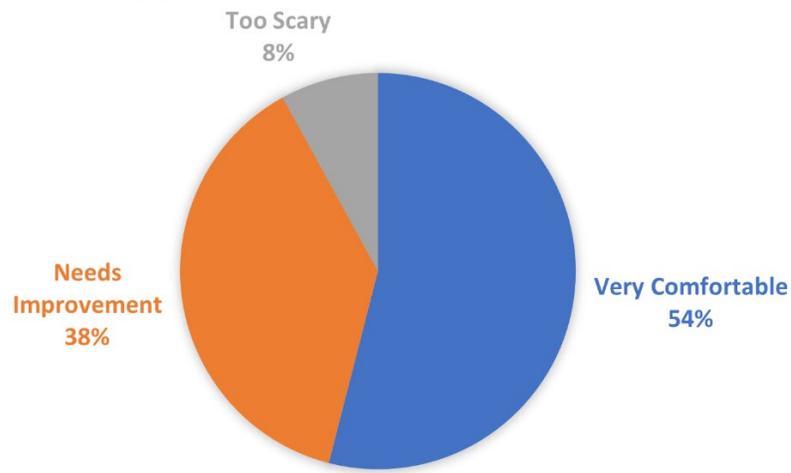
In addition, residents could pinpoint locations where they felt improvements could be made for safer pedestrian, bicycle, vehicle, and public transit infrastructure as well as ADA accessibility. The comments can be found here:

<https://www.lincolntown.org/DocumentCenter/View/78639/Wikimapping-Point-Comments-11072022--FINAL>

A public forum was conducted on October 27, 2022. An overview of the Complete Streets funding program was presented followed by a brief survey of four questions. The questions and answers are charted below.

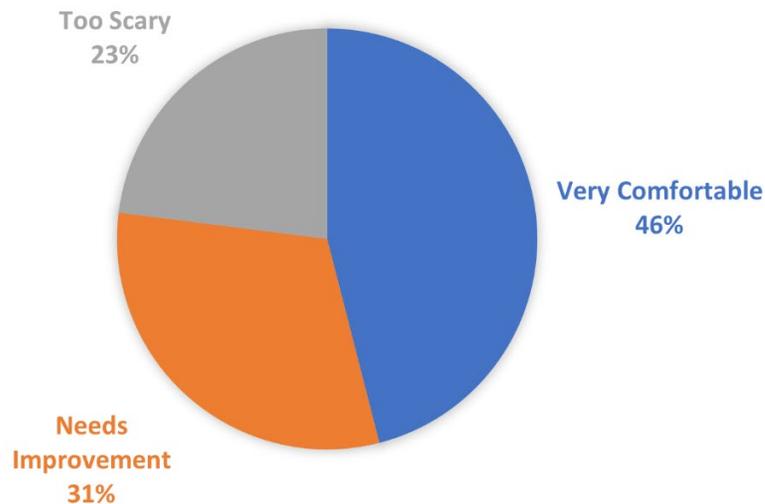
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### WHAT IS YOUR COMFORT LEVEL RUNNING AN ERRAND IN TOWN ON FOOT?

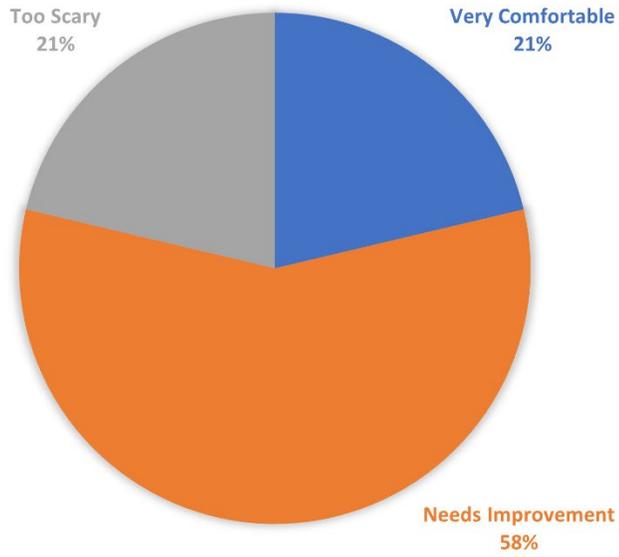


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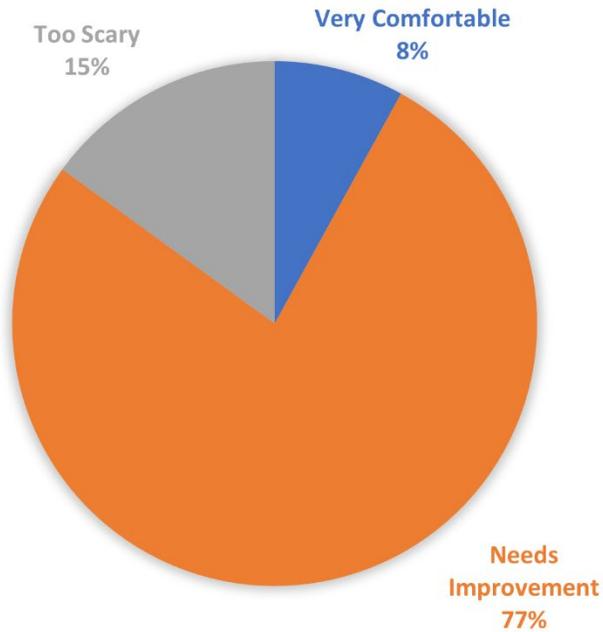
### WHAT IS YOUR COMFORT LEVEL RIDING A BICYCLE FOR ERRANDS IN TOWN?



### WHAT IS YOUR COMFORT LEVEL WITH CHILDREN WALKING TO SCHOOL?



### WHAT IS YOUR COMFORT LEVEL WITH CHILDREN BIKING TO SCHOOL?



The larger group was then broken up into smaller groups to collect residents' ideas, insights, and questions. The smaller groups then reported out to the larger group. The forum thereby emphasized residents' input rather than staff presentation. The reports of the four groups included general considerations such as a preference for roadside paths away from the road, the willingness to remove trees for paths, and the need for expanded wayfinding and education. The reports also included individual projects such as traffic calming and safe circulation in the Village Center and the Lincoln schools, improving or adding roadside paths at specific locations, resolving dangerous intersections such as the five-way intersection, filling roadside path gaps and adding safe crossings to access the Institutional Corridor and other favorite destinations, and providing bicycle amenities. There was also a willingness to explore pilot projects such as edge lane roads and one-way roads to accommodate bicycle lanes and pedestrian sidewalks to provide safe routes to school and other desired destinations.

Results of the public forum, the wikimapping exercise, and the survey indicate widespread interest in walking and biking to desired destinations in Lincoln as well as concern for safety, particularly for children walking and biking to school. The Complete Streets Working Group used the feedback and data from the community engagement as well as previous plans and reports, data, and equity assessment, as its methodology to assess the needs and priorities of the Town. This work has formed the basis of the current prioritization plan and list of projects which will further the goals of Lincoln's Complete Streets Policy and its mission to make Lincoln a safer, greener, and more inclusive place to live.