

---

# SAFE STREETS FOR LAKEWOOD

---

Active Transportation Plan

April 15, 2024



## ACKNOWLEDGEMENTS

### Project Team

David Baas – City of Lakewood Department of Planning and Development  
Lieutenant William Deucher – City of Lakewood Police Department  
Mark Papke – City of Lakewood Department of Public Works  
Neil Shop – Ohio Department of Transportation  
Shawn Leininger – City of Lakewood Department of Planning and Development  
Mark Walter – Lakewood City Schools

### Stakeholder Team

Councilman Kyle Baker	Ian Andrews
Michelle Nocht	Amy Haney
Thom Evans	Sam Bonvissuto
Martha Gubernath	Officer John Winters, LPD
Emmie Hutchinson	Ben Van Lear
Brenna Warrell	Lauren Small
Ben Turin	Samantha Metcalf
Andrew Stahlke	Brian Meng
Jenna Thomas	Sophia Jones
Jacob Van Sickle	Amanda Cramer
Emily Lindberg	

Partners: Ohio Department of Transportation

Consultant Team: Toole Design Group LLC



*Disclaimer: Information contained in this document is for planning purposes and should not be used for final design of any project. All results, recommendations, concept drawings, cost opinions, and commentary contained herein are based on limited data and information and on existing conditions that are subject to change. Further analysis and engineering design are necessary prior to implementing any of the recommendations contained herein. Geographic and mapping information presented in this document is for informational purposes only, and is not suitable for legal, engineering, or surveying purposes. Data products presented herein are based on information collected at the time of preparation. Toole Design Group, LLC makes no warranties, expressed or implied, concerning the accuracy, completeness, or suitability of the underlying source data used in this analysis, or recommendations and conclusions derived therefrom.*

# CONTENTS

<b>Executive Summary</b>	<b>5</b>
Introduction	5
Vision Statement	8
Community Goals	8
Engagement Efforts	9
Existing Conditions	9
Proposed Projects and Programs	9
Community vision statement	12
Community goals	12
<b>Community Engagement</b>	<b>14</b>
Engagement milestones	14
Strategies	15
Key Takeaways From Engagement	18
Safe Routes to School Engagement	19
<b>Existing Conditions</b>	<b>22</b>
Demographic and geographic context	22
Historical context	24
Existing plans, policies, and supportive programs	25
Existing Transportation Network	29
School Travel	35
Analyses	36
<b>Proposed Projects and Programs</b>	<b>54</b>
Infrastructure projects	54
Programs and policies	72
<b>Priority Projects</b>	<b>78</b>
Prioritization Methodology	78
Prioritized infrastructure project list	79
<b>Implementation</b>	<b>89</b>
Roles and responsibilities	89
Funding strategies	90
Maintenance strategies	92
On-going monitoring and evaluation	94

# EXECUTIVE SUMMARY





Figure 1. Cyclists on Detroit Avenue

# EXECUTIVE SUMMARY

## INTRODUCTION

### WHAT IS ACTIVE TRANSPORTATION AND WHY IS IT IMPORTANT?

“Active Transportation” is an umbrella term for all the ways people can get around without using a motorized vehicle – walking or biking, using mobility assistance devices (such as wheelchairs and scooters), skating or skateboarding, and more. In short, active transportation is human-powered travel. Active Transportation represents fundamental transportation modes for many Ohioans to access transit, work, school, retail stores or any number of destinations in urban, suburban, and rural settings. Active transportation can provide many community benefits beyond personal mobility, such as improved public health, economic development, greater quality of life, and enhanced environmental quality.

Active transportation planning involves community engagement specific to the needs of people who walk and bicycle and outlines the vision, goals, and strategies needed to support safe, convenient, and accessible active transportation options. It is important and beneficial to meet the needs of people walking and biking by planning for and directing investments in infrastructure and programs that support active transportation options.

## Benefits of Active Transportation

---

### Physical Health

Increased opportunity for recreation and destination-oriented trips using active modes of travel are key to increasing daily physical activity and reducing the risk for developing preventable, chronic diseases.

### Mental Health

Physical activity reduces depression, can improve the quality of sleep, and has been shown to improve cognitive function for older adults.<sup>1</sup> Active transportation can also improve social conditions in communities, which contributes to positive mental well-being among residents.

### Economic Development

There is broad consensus across the country, and in Ohio, that investing in active transportation produces a positive return on investment for host communities. This is especially true when it comes to trails, which serve as major regional attractions for recreational riders.

### Quality of Life

Comfortable and accessible options for bicycling and walking provide a host of quality of life benefits. They increase the number of travel options for everyone and can lead to greater independence for older residents, young people, and others who cannot or choose not to drive. Providing a high-quality active transportation network is especially important for the mobility of community members who do not have full access to a vehicle.

### Environmental Quality

Shifting to bicycling and walking trips, and concentrating development in dense walkable and bikeable communities can reduce transportation-based emissions and sprawling land use that impacts the natural environment.<sup>2</sup>

*1. U.S. Department of Health and Human Services. 2008 PHYSICAL ACTIVITY GUIDELINES FOR AMERICANS. Washington, DC: U.S. Dept of Health and Human Services; 2008. <http://health.gov/paguidelines/pdf/paguide.pdf>*

*2. Federal Highway Administration, National Bicycling and Walking Study, "Case Study No. 15 The Environmental Benefits Of Bicycling And Walking," 1993 [http://safety.fhwa.dot.gov/ped\\_bike/docs/case15.pdf](http://safety.fhwa.dot.gov/ped_bike/docs/case15.pdf)*

## PROJECT TIMELINE

The ATP was developed in coordination with the Safe Streets for Lakewood Safety Action Plan (Action Plan) to address multimodal safety through a Safety System Approach. Both planning documents were created under the leadership of a project team consisting of staff from City of Lakewood, Lakewood City Schools, and the Ohio Department of Transportation (ODOT) as well as a Stakeholder Committee representing a variety of community interests. The process to develop the ATP began with an assessment of existing conditions and a review of other relevant plans and studies. Public input and technical analyses provided a foundation for proposed projects and prioritization of recommendations. This document summarizes the findings of the planning process and is organized into the following sections:

- » Vision and Goals
- » Community Engagement
- » Existing Conditions
- » Proposed Projects and Programs
- » Priority Projects
- » Implementation

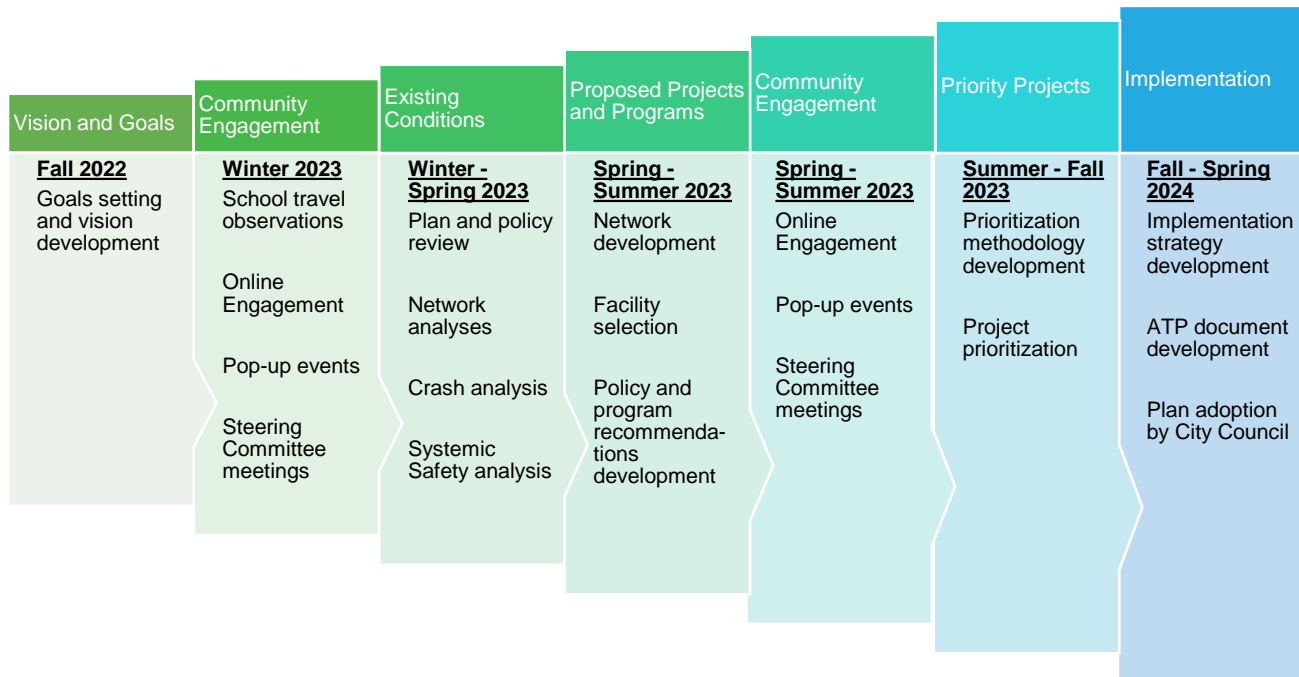


Figure 2. Project Timeline

## VISION STATEMENT

Lakewood envisions a complete and connected network for people walking and biking that provides year-round access to local amenities, resources, and the regional bicycle and pedestrian network. Lakewood envisions a culture of respect for all roadway users, and bicycle and pedestrian infrastructure that is safe and comfortable for people of all ages and people with disabilities.

## COMMUNITY GOALS

- » **Safety** – Eliminate all serious injury and fatal crashes involving people walking and/or biking.
- » **Equity** – Ensure the system accommodates all users, and meets the unique needs of children, youth/teens, older adults, people with disabilities, people in low-income households, and people without access to a vehicle. Ensure that all people have the opportunity to provide input about transportation options.
- » **Connectivity** – Establish a comfortable and continuous bicycle and pedestrian network that connects people to destinations.
- » **Livability** – Improve quality of life and culture of respect between drivers, pedestrians, and cyclists.

# ENGAGEMENT EFFORTS

## KEY TAKEAWAYS

The project team collected community input through several strategies including: an online community survey, online web maps, personal interviews, community pop-ups, and public meetings. Early engagement identified key barriers to walking and biking, which defined areas of focus for the planning process. These focus areas included: safety around schools, safe intersections, and east-west bicycle routes across the City. See the Community Engagement chapter (page 14) for a summary of all engagement efforts.

# EXISTING CONDITIONS

## KEY TAKEAWAYS

Lakewood is an ideal location for active transportation due to its compact development, grid transportation network, local amenities, natural assets, low elevation changes, and robust sidewalk network. It is the densest and most walkable city in Ohio and has the potential to be one of the most bikeable cities as well.

The project team completed an existing conditions analysis to understand the current transportation system and where improvements could be made for people walking and biking. The active transportation demand analysis showed that there is demand for walking and biking across the City of Lakewood, particularly in the downtown area and eastern neighborhoods in the City like Gold Coast and Birdtown.

ODOT's active transportation need dataset the ODOT showed that in addition to demand for walking and biking, there is a need for safer and more affordable transportation options for residents of the southeastern portion of Lakewood. This area includes Birdtown and some surrounding census tracts.

Safety analyses and review of bicycle and pedestrian crash data showed high concentrations of bicycle and pedestrian crashes along Detroit Avenue, Madison Avenue, and 117<sup>th</sup> Street which are primary commercial corridors for multimodal traffic. Other corridors with concentrations of crashes include Clifton Boulevard, Hilliard Road, and Franklin Avenue. All of these corridors are part of the High-Risk Network for Walking and Biking (HRN).

See the Existing Conditions chapter (page 22) for a summary of all analyses and the Action Plan for more information about the HRN.

# PROPOSED PROJECTS AND PROGRAMS

Stakeholder guidance, review of existing conditions, public input, and systemic safety analysis led to the development of a final active transportation network. Infrastructure recommendations include adding:



17 miles  
of on-street  
bikeway



70  
crossing  
improvement



7 miles  
of shared use  
path



The plan also proposes establishing programs and policies to support active transportation. See the Proposed Projects and Programs chapter (page 54) for details on the proposed bicycle and pedestrian projects and supportive programs.

## PRIORITY PROJECTS

A prioritization process that included input from the community identified projects that should be implemented in the short term. Top projects included:

- » Buffered bike lane on Franklin Avenue,
- » Separated bike facilities on West Clifton Boulevard, and
- » A network of bike boulevards on residential roadways including Cohasset Avenue, Cove Avenue, Ridgewood Avenue, and Delaware Avenue.

# VISION AND GOALS





Figure 3. Sidewalks on Detroit Avenue

## VISION STATEMENT

Lakewood envisions a complete and connected network for people walking and biking that provides year-round access to local amenities, resources, and the regional bicycle and pedestrian network. Lakewood envisions a culture of respect for all roadway users, and bicycle and pedestrian infrastructure that is safe and comfortable for people of all ages and people with disabilities.

## COMMUNITY GOALS

- **Safety** – Eliminate all serious injury and fatal crashes involving people walking and/or biking.
- **Equity** – Ensure the system accommodates all users, and meets the unique needs of children, youth/teens, older adults, people with disabilities, people in low-income households, and people without access to a vehicle. Ensure that all people have the opportunity to provide input about transportation options.
- **Connectivity** – Establish a comfortable and continuous bicycle and pedestrian network that connects people to destinations.
- **Livability** – Improve quality of life and culture of respect between drivers, pedestrians, and cyclists.

# COMMUNITY ENGAGEMENT





Figure 4. Pop-up engagement event at Madison Park

# COMMUNITY ENGAGEMENT

Community engagement was an essential tool in the ATP and Action Plan development process. Involving the public builds trust in the Plan and improves the overall quality of the findings. The project team used several strategies to collect public input including a community survey, an online web map, community pop-ups, stakeholder meetings, and interviews. Figure 5 below shows the timeline of engagement activities and milestones. Phase 1 describes efforts focused on understanding existing conditions and barriers to walking, biking, general traffic safety for all modes. Engagement activities in Phase 2 were focused on receiving feedback from the community about draft project, program, and policy recommendations. Phase 3 describes the final rounds of engagement which focused on community and stakeholder review of the draft plans.

## ENGAGEMENT MILESTONES

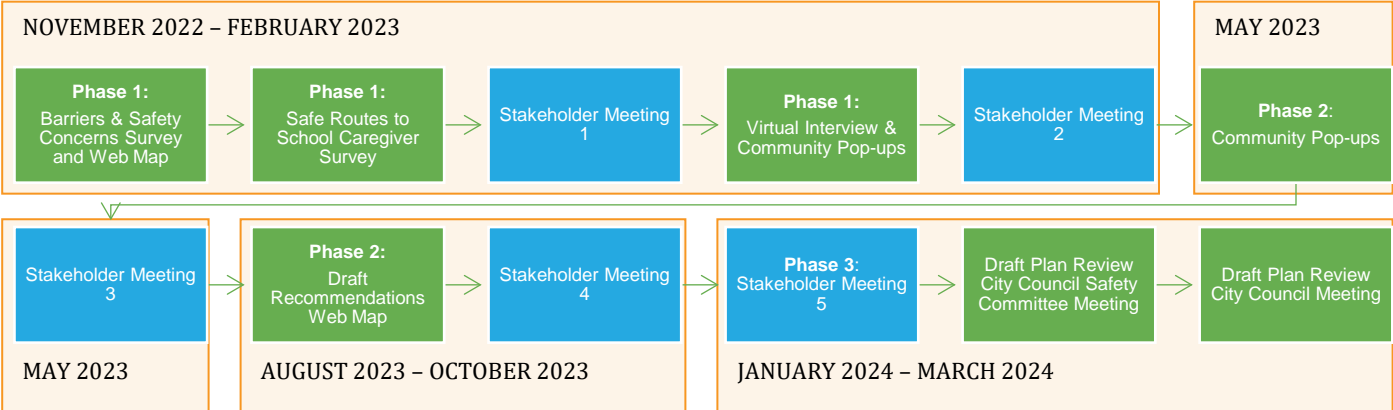


Figure 5. Engagement milestones timeline

# STRATEGIES

## Stakeholder Committee Meetings

The Stakeholder Committee represented various community interests and transportation agencies across Lakewood. This included Lakewood City Schools, Bike Lakewood, Lakewood Catholic Academy, LakewoodAlive, Lakewood Chamber of Commerce, Northeast Ohio Areawide Coordination Agency (NOACA), Lakewood City Council, Bike Cleveland, and various City of Lakewood departments.

Stakeholder Committee input guided the development of the Lakewood ATP at each key phase – visioning and goals, review of existing conditions, systemic safety analysis, program and policy recommendations, and project recommendations. Stakeholder Committee members are listed in the acknowledgments at the beginning of this document.

The Stakeholder Committee met four times over the course of the plan development.

- » **Meeting 1** was held in November 2022 and kicked off the planning process. The first meeting introduced active transportation and why Lakewood would benefit from an ATP. Stakeholders reviewed maps of existing infrastructure for walking and biking and discussed their vision for a safe, walkable, and bikeable Lakewood.
- » **Meeting 2** was held in February 2023 and provided a summary of existing conditions data analysis and the results of the Safe Routes to School caregiver survey. In this meeting systemic safety and the Action Plan component of this process was introduced to stakeholders.
- » **Meeting 3** was held in May 2023. Stakeholders reviewed the results of systemic safety analysis – a High-Risk Network for Walking and Biking in Lakewood (HRN). Discussion then turned to a proposed network of infrastructure for walking and biking and proposed program and policy recommendations.
- » **Meeting 4** was held in August 2023. Stakeholders provided their final comments on the ATP recommendations and reviewed Action Plan components. They gave input on the prioritization methodology and received a high-level overview of the remaining steps in the planning process.
- » **Meeting 5** was held in February 2024 to review and provide comments on the draft plans.

In addition to the Stakeholder Committee meetings, Bike Lakewood led an educational bicycle ride for stakeholders and Lakewood City staff to get a firsthand experience of the challenges and opportunities for active transportation.

## Pop-Up Events

Pop-up events have a broader reach than conventional public meetings. By leveraging popular destinations, the project team reached a wide cross-section of Lakewood community members, particularly older adults, parents of young children, residents with mobility disabilities, and residents of Color.

The project team held pop-up events over the course of a few days in December, February, and in May. Pop-ups were held at Light Up Lakewood, Cove Community Center (Figure 6), Wagar Park, and Madison Park.



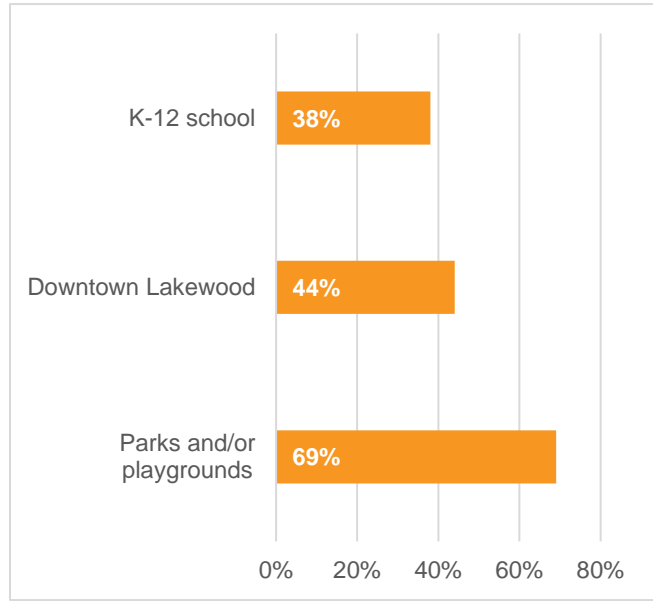
**Figure 6. Pop-up event at Cove Community Center**

### Online Survey and Web Map

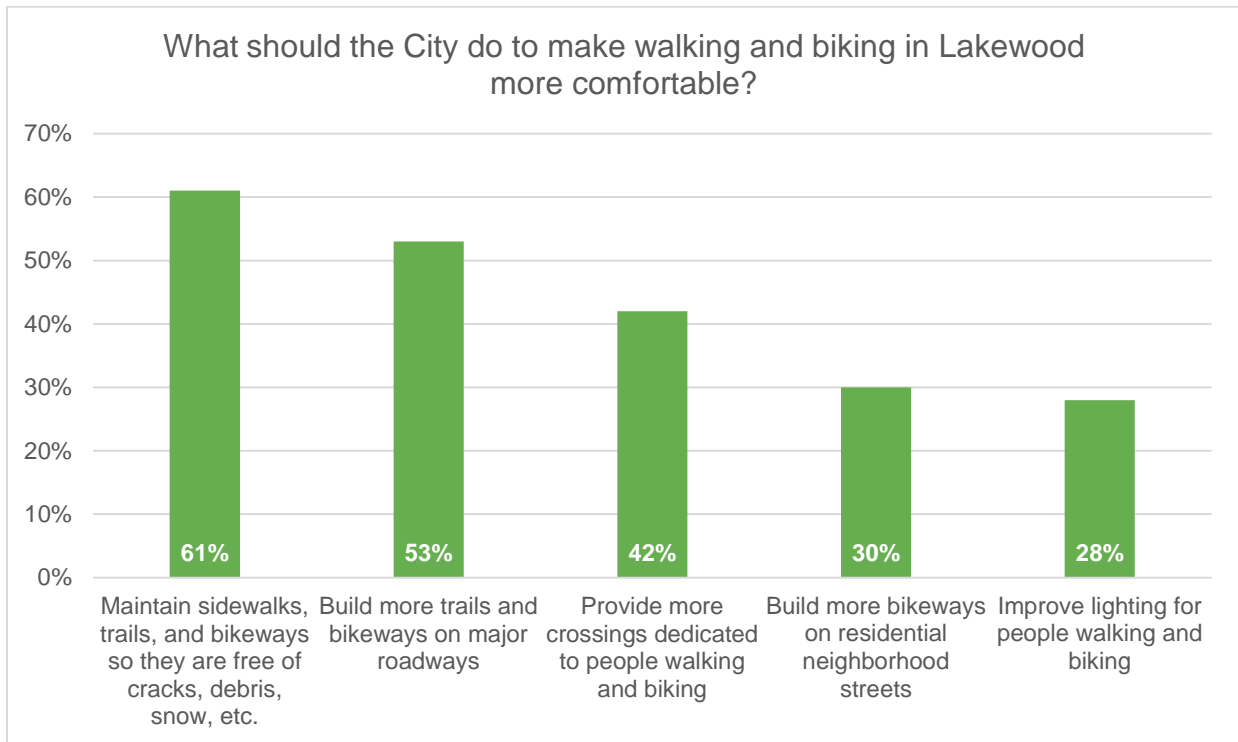
Throughout the planning process, multiple survey tools were used to collect feedback from Lakewood community members and stakeholders. The first was an online survey that asked respondents for information about why they walk and bike in Lakewood, existing challenges for walking and biking in the city, and where new active transportation facilities should be built. This survey also asked respondents about their challenges and concerns around multimodal safety and about the types of traffic safety strategies most needed in Lakewood. See the Action Plan for more information about residents' responses to questions about multimodal safety.

The survey received 745 individual responses between December 2022 and March 2023.

Responses helped the project team understand the priority locations that Lakewood residents would like to be able to access by biking and walking (Figure 7) and their priorities improving walking and biking in Lakewood (Figure 8).



**Figure 7. Places people want to be able to walk or bike to the most.**

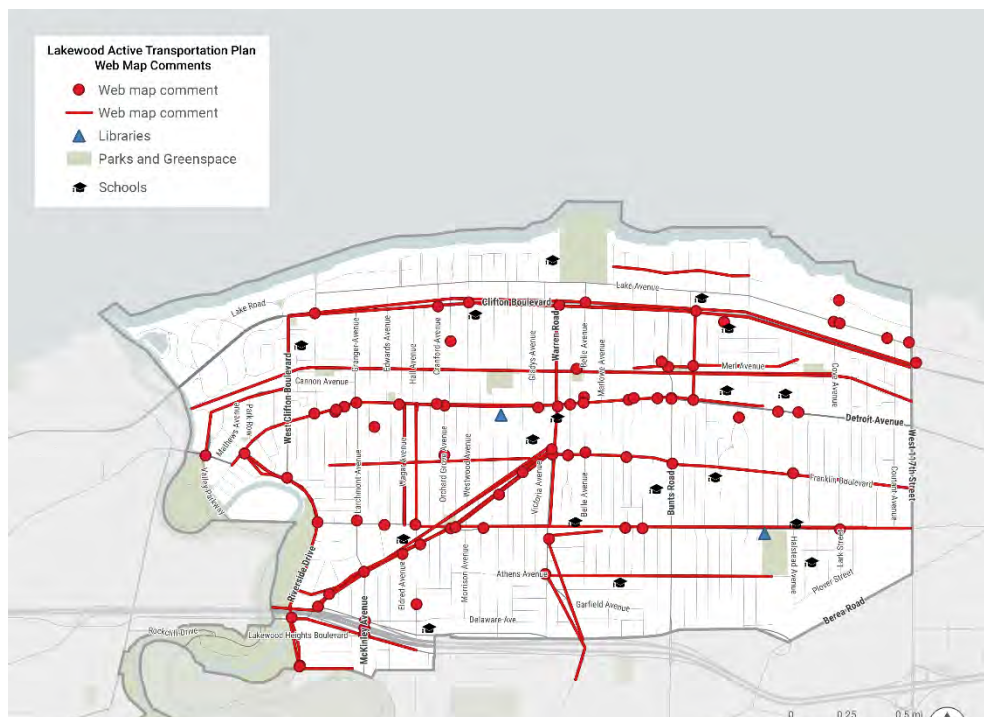


**Figure 8. What the City of Lakewood should do to make walking and biking more comfortable.**

In addition to the online survey, an online web map was distributed during the same time period to allow Lakewood residents an opportunity to give spatial feedback on where there are barriers to walking, biking, and multimodal safety. The online web map received 843 visitors who left 110 individual comments on the map (Figure 9). Major corridors in Lakewood received the most comments about challenges for walking and biking, including Detroit Avenue, Madison Avenue, Hilliard Road, Franklin Boulevard, and Bunts Road.

After the project team developed draft infrastructure recommendations, a second online map was developed to collect community feedback in October 2023. This version of the online map allowed respondents to view the draft recommendations and either vote in support or against the project. A total of 526 responses were received and overall, respondents showed a high level of support for the draft recommendations. There were 470 votes in support of the draft recommendations and 22 votes against projects. The responses from this online map were used to make final revisions to the infrastructure recommendations and incorporated into the final project prioritization. Projects that received the most amount of support included:

- » Crossing improvements at Detroit Avenue & Belle Avenue,
- » Crossing improvements at Detroit Avenue & Westwood Avenue,
- » Crossing improvements at Madison Avenue & Hilliard Road,
- » Crossing improvements at Detroit Avenue & Giel Avenue,
- » East-west shared use path along the railroad,
- » Parking-protected bike lane on Clifton Avenue,
- » Shared use path on Riverside Drive, and
- » Bike boulevard on Delaware Avenue.



**Figure 9. Responses from first online web map**

## Public Meetings

The project team attended a Lakewood Youth Council meeting to provide information about the ATP and Action Plan in May 2023 (Figure 10). An overview of the planning process was provided, along with opportunities for Youth Councilmembers to share their experiences with walking and biking in Lakewood. Youth Councilmembers provided useful feedback about existing conditions – nearly every member shared that they or someone in their life had experienced a crash or near miss while walking or biking in Lakewood.



**Figure 10. Lakewood Youth Council Meeting ATP presentation**

The Youth Councilmembers then gave input on the proposed active transportation network and provided their suggestions for other ways to support active transportation and multimodal safety in Lakewood, including promotional programs and a bike-friendly business program.

At the end of the planning process, the draft ATP was presented at the February Lakewood City Council Safety Committee meeting. Lakewood staff overviewed the ATP and Action Plan processes and collected final comments from Councilmembers and members of the public before the ATP and Safety Action Plan were both adopted on 15 April 2024.

## KEY TAKEAWAYS FROM ENGAGEMENT

### Destinations

The priority destinations that Lakewood residents would like to visit by foot or bike include:

- » Commercial and retail destinations along Detroit Avenue,
- » Commercial and retail destinations along Madison Avenue,
- » Madison Library,
- » Scenic Park Metroparks,
- » Lakewood Park, and
- » Rocky River Reservation.

### Top barriers to walking

- » Dangerous intersections
- » Distracted, speeding and/or aggressive drivers
- » Poor sight lines at intersections
- » Sidewalk maintenance

### Top barriers to biking

- » Lack of signage and wayfinding
- » Lack of physically separated bicycle facilities
- » Distracted, speeding, and aggressive drivers
- » Unsafe road crossings
- » Lack of bicycle facility connectivity

- » Lack of bicycle parking

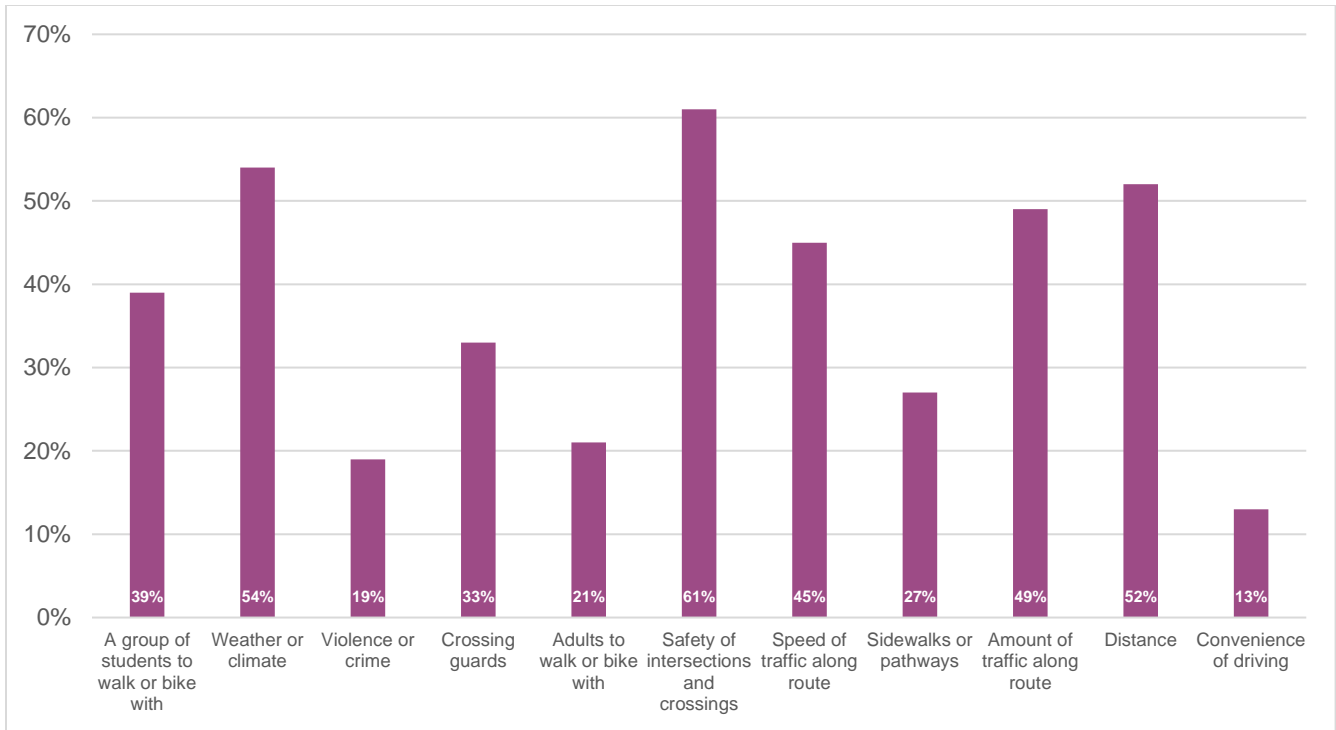
### Streets currently serving as key routes for bicycling/walking

- » Lake Avenue
- » Detroit Avenue
- » Madison Avenue
- » Franklin Boulevard
- » Clifton Boulevard
- » Hilliard Road
- » Warren Road
- » Bunts Road
- » Edgewater Drive

## SAFE ROUTES TO SCHOOL ENGAGEMENT

Lakewood City School District has one of the highest rates of walking and biking to school in Ohio, likely because there is no bussing provided by the district. Input on youth walking and biking was collected through the Stakeholder Committee meetings, pop-up events, and Lakewood Youth Council meeting.

Additionally, input specifically about walking and biking to school was collected through a caregiver survey distributed by Lakewood City School District and Lakewood Catholic Academy in the fall of 2022. The survey was completed by 758 caregivers. 60 percent of survey respondents indicated that their child currently walks or bikes to school sometimes during the school year. According to the caregiver survey results, the top factor impacting the decisions of parents to walk and bike to school is the safety of intersections and crossings; additional factors are shown in Figure 11.



**Figure 11. Key issues impacting caregiver decisions to let child walk or bike to school**

# EXISTING CONDITIONS





Figure 12. Birdtown bike racks at Madison Park

## EXISTING CONDITIONS

This chapter examines several elements of Lakewood’s transportation system. It presents a demographic profile of Lakewood and a plan and policy review summarizing existing active transportation and related efforts to date, framing the current planning process as a logical next step in Lakewood’s active transportation evolution. This chapter also summarizes existing programs that support active transportation. Also included is an overview of analyses that examine the active transportation network from various perspectives – equity, utilization, connectivity, and safety.

## DEMOGRAPHIC AND GEOGRAPHIC CONTEXT

Lakewood is a medium-sized city located in the northwest area of Cuyahoga County. Lakewood is bordered by Lake Erie to the north, the City of Cleveland to the east and the south, and the Rocky River Valley to the west separates Lakewood from the City of Rocky River. Lakewood boasts being Ohio’s most walkable and densest city with a 2021 population estimate of 50,104 people in a land area of 5.5 square miles.<sup>1</sup>

---

<sup>1</sup> U.S. Census Bureau (2021). QuickFacts. Retrieved from <https://www.census.gov/quickfacts/fact/table/lakewoodcityohio/INC110221>

**Table 1. Lakewood Demographics (2021)**

The city’s current population is approximately 87 percent white, 6 percent Black or African American, 2 percent Asian, 5 percent multiracial, and 5 percent Hispanic or Latino. Eight percent of Lakewood residents are foreign-born and approximately 11 percent of residents speak a language other than English at home. <sup>4</sup>

In 2021, Lakewood’s median household income was \$57,588 which is slightly above Cuyahoga County’s median household income of \$55,109.<sup>5</sup>

In 2021, approximately 13 percent of Lakewood residents were living below the federal poverty line. This number jumps to 17 percent when looking at people under the age of 18 or when looking at residents who identify as Black or African American, Asian, Hispanic or Latino, or multiracial.

	Category	Percent
<b>Race</b>	White	85.9%
	Multiracial	4.9%
	Black	6.4%
	Asian	2.3%
	Native American	NC
	Hispanic	4.4%
<b>Age<sup>2</sup></b>	Under the age of 5	4.5%
	Under the age of 18	15.8%
	65 and over	13.7%
<b>Car Ownership by Household</b>	0	4.6%
	1	32.3%
	2	47.9%
	3+	15.25%
<b>Commute Mode Share<sup>3</sup></b>	Drove alone	77%
	Carpooled	6.6%
	Walked	2.52%
	Bicycled	.70%
	Transit	3.4%
	Worked at Home	8.45%
	Other	.84%

In regard to transportation habits, the majority of Lakewood residents in the workforce commute by car. In 2021 approximately 81 percent either drive alone or carpooled, while less than 3 percent of people walked and less than 1 percent of people bicycled. The fastest growing type of commute in Lakewood is working from home – the city saw an increase from 4 percent to nearly 12 percent between 2017 and 2021.<sup>6</sup>

Despite the trend, that is only part of the story. Although not tracked by the United States Census in the same way as work commute data, as part of this planning process many Lakewood residents report walking and biking for their daily errands and activities. Lakewood City Schools do not provide bussing service to students in the district, so walking and biking to school is also very common in Lakewood throughout the entire school year.

<sup>2</sup> “Lakewood City, Ohio” Profile, US Census Bureau QuickFacts

<sup>3</sup> “Lakewood, OH”, The Census Bureau ACS 5-year Estimate, 2020

<sup>4</sup> U.S. Census Bureau (2021). QuickFacts. Retrieved from <https://www.census.gov/quickfacts/fact/table/clevelandcityohio.cuyahogacountyohio.lakewoodcityohio/INC110221>

<sup>5</sup> U.S. Census Bureau (2021). QuickFacts. Retrieved from <https://www.census.gov/quickfacts/fact/table/clevelandcityohio.cuyahogacountyohio.lakewoodcityohio/INC110221>

<sup>6</sup> U.S. Census Bureau, American Community Survey 5-year estimates 2017 – 2021. Table S0801 Commuting Characteristic by Sex. Retrieved from <https://data.census.gov/table?q=lakewood+ohio+commuting+characteristics+2017&y=2021&tid=ACST5Y2021.S0801>

# HISTORICAL CONTEXT

Before the 1800s, the land where Lakewood is now located was home to the Ottawa, Potawatomi, Chippewa, Wyandot, Munsee, Delaware, and Shawnee Nations until they were pushed west by the Treaty of Fort Industry in 1805.<sup>7</sup> European settlers began arriving around 1805 and by 1819 the area was known as Rockport Township. The Treaty of Fort Industry accelerated settlement growth and in 1889, with just 400 residents, the area that had been known as East Rockport evolved to become an independent community known as the Hamlet of Lakewood. Rapid population and economic growth continued, supported by numerous transportation investments in roadways, railroads, and streetcar transit.<sup>8</sup>

Throughout the early 1900s key east-west corridors through Lakewood – including Detroit Avenue, Clifton Boulevard, and Madison Avenue – opened streetcar lines that helped develop neighborhoods and connect residents to areas of work and commerce in Lakewood, Cleveland, and other surrounding communities.<sup>9</sup> During this time, Lakewood’s population was at its highest, peaking in 1930 with a population of just over 70,000 people.



**Figure 13. View of Detroit Ave in 1934 (Source: Cleveland.com)**

The rise of the car led to the removal of streetcar lines in the 1950s and widening of key corridors like Clifton Boulevard to accommodate vehicle traffic. Lakewood maintained a fairly consistent population of 70,000 people until the 1970s, when like nearly every other Rust Belt city, the Cleveland metropolitan area began to experience deindustrialization and population decline. Since then, the city has lost about a third of its population. In 1995, the population was 62,000 and today it is estimated at just over 50,000.<sup>10</sup>

Despite these historical population trends, Lakewood’s diverse immigrant population has been growing since the 1980s which has helped offset some of the population decline. Lakewood is home to significant Eastern European, Arab, South Asian, and Southeast Asian immigrant populations who have added to the city’s population density and vibrancy.<sup>11</sup> In recent years, much of Lakewood’s immigrant population has settled in the Birdtown neighborhood in the southeast area of the city.

---

<sup>7</sup> The Blade. (2003). *1805 Fort Industry treaty entices Toledo historians*. Retrieved from <https://www.toledoblade.com/local/2003/11/16/1805-Fort-Industry-treaty-entices-Toledo-historians/stories/200311160035>

<sup>8</sup> The Lakewood Historical Society – Brief History of Lakewood. Retrieved from <https://www.lakewoodhistory.org/preservation/lhab-heritage-advisory-board/brief-history-of-lakewood>

<sup>9</sup> The Lakewood Historical Society – Brief History of Lakewood. Retrieved from <https://www.lakewoodhistory.org/preservation/lhab-heritage-advisory-board/brief-history-of-lakewood>

<sup>10</sup> “Lakewood”, Encyclopedia of Cleveland History, Case Western Reserve University (2022). Retrieved from <https://case.edu/ech/articles/1/lakewood>

<sup>11</sup> <https://case.edu/ech/articles/1/lakewood>

# EXISTING PLANS, POLICIES, AND SUPPORTIVE PROGRAMS

This plan builds on prior plans and initiatives developed by entities within Lakewood. It looks to these plans for existing conditions data, issue identification, and recommendation support.

**Table 2. Existing Plans and Policies**

Plan/ Policy	Lead Agency	Year Completed	Key Takeaways
<b>City Vision Zero Resolution – Resolution NO. 9063-19</b>	City of Lakewood	2019	The resolution provided a commitment between City government, relevant agencies, and community stakeholders to cooperate and collaborate on Vision Zero efforts throughout Lakewood. The resolution examined traffic fatalities and stated how cities across America have implemented the Vision Zero initiative. The resolution concluded with a call of all for support from Lakewood’s City Council and administration for supporting Vision Zero Action Plan development.
<b>City of Lakewood Safe Routes to Schools Travel Plan</b>	City of Lakewood	2010	The City of Lakewood produced a Safe Routes to School (SRTS) Travel Plan to increase walking and biking efforts amongst the school-age population and to address active transportation barriers for middle schools. SRTS Team – which consisted of principals, police, engineers, and school staff – observed and assessed the traveling behaviors at Lakewood’s Garfield Middle School and Harding Middle School. The SRTS assessed the percentage of the middle school student population that walked and biked to school as well as on-site barriers to the middle schools. Barriers included personal safety, bicycle safety, sidewalk conditions, and snow-covered sidewalks in the winter. The plan concluded with recommendations within the following categories: education, encouragement, enforcement, engineering, and design.
<b>City of Lakewood Bike Master Plan</b>	City of Lakewood	2012	The City of Lakewood Bike Master Plan explored policies, programs, and projects that will help establish biking as one of the most accessible transportation options in Lakewood. The plan reviewed the existing biking infrastructure network in Lakewood, analyzed surveys that examined the population of Lakewood residents that bike, featured design guidelines and standards, and identified methods to improve safety and mobility for cyclists. The plan’s goals were to expand the city’s supply of bike racks, establish a primary bikeway system/network, earn national recognition as one of the most bicycle friendly communities in the country by 2015, and to continue education and outreach efforts.
<b>Lakewood Community Vision</b>	City of Lakewood	Adopted 2012, updated 2017	The City of Lakewood Master Plan - Lakewood Community Vision, lays out the vision for the future of Lakewood pertaining to six key areas – commercial development, housing, community wellness, safety, mobility, education, and culture. In the mobility section, the plan discussed building network connections, enhancing existing infrastructure such as sidewalks and

Plan/ Policy	Lead Agency	Year Completed	Key Takeaways
			streetscapes, reducing the idling of cars around schools and major destinations, improving timing and reliability of the Greater Cleveland Regional Transit Authority (GCRTA), and educating residents on ways to reduce their mobility carbon footprint.
<b>City of Lakewood Bicycle Planning Update</b>	City of Lakewood	2019	The presentation provided an update on the Lakewood Bicycle Master Plan. The first portion of the presentation reviewed bicycle infrastructure improvements. The updates highlighted progress towards planned infrastructure improvements on major roadways and intersections such as bike boxes, route marking, and bike lane widening. This was followed by a discussion of the Cuyahoga County – Cleveland Bike Share expansion which would include a flexible bike share system across the county. The presentation concluded with a discussion of methods to improve and expand education and outreach initiatives.
<b>Cuyahoga Greenways Vision Plan: A Transportation for Livable Communities Initiative Planning Study</b>	NOACA, Cuyahoga County Planning Commission, Cleveland Metroparks	2019	The Cuyahoga Greenways Vision Plan, developed by numerous regional agencies, consultants, and technical teams, envisioned an interconnected system of on-road and off-road bicycle facilities and trails. The plan also reviewed Cuyahoga County’s initiatives, visions, plans, and methods for implementing greenways and urban trail throughout Cuyahoga County. The plan sought to connect public transportation and parks and improve active mobility options. The plan included descriptions of the agency’s history, vision plan planning process, design approaches, and goals. The plan also included information regarding existing conditions, evaluated and identified greenway routes, and identified the necessary steps for implementation. There are several design considerations and facility suggestions such as protected bikeways, raised bikeways, and standard bike lanes. The plan stated that 280,00 residents live within a mile of the current regional system, while a fully built out system can reach over 500,000 of the county’s population. The plan also stated that if completed, the envisioned system will provide access to over 525,000 jobs.
<b>Community Confluence: Connecting the Cities of Lakewood and Rocky River, and the Rocky River Reservation</b>	NOACA, Cuyahoga County Planning Commission, Cleveland Metroparks, City of Lakewood, City of Rocky River	2021	The plan’s objectives were to shorten the perceived distance across the Rocky River Valley, highlight existing connections between neighborhoods and the Rocky River Valley, broaden the awareness of park resources, reinforce connection between cities and Metroparks, serve all populations and modal types, and provide high quality multi-modal connectivity. The plan provided a contextual analysis of the study area and included traffic analysis and identified recommendations, implementation priorities, cost estimates, and funding sources for implementation.

**Table 3. Existing Supportive Programs**

Program Name	Program Lead	Target Audience	Key Takeaways
<b>Transportation Accessibility Program</b>	City of Lakewood; Senior Transportation Connection	Lakewood residents between the ages of 18-59	This program provides Lakewood residents between the ages of 18-59 who are certified by their physician of having a permanent disability by offering them round-trip transportation services twice a month to their routine medical appointments. For those that can't access or use active transportation, this provides them with safe and reliable access to and from medical appointments.
<b>Bike Racks for Business</b>	City of Lakewood	Lakewood business owners	The city provides businesses with bike racks so businesses can install them. For those that bike, this provides them the opportunity to not only park their bike but also check out and learn about businesses in Lakewood.
<b>Bike/Scooter Share Pilot Program</b>	City of Lakewood; Cuyahoga County	Lakewood residents and visitors	This pilot program launched in late 2022 as part of the broader Cuyahoga County program. The pilot program, in partnership with private vendors, placed 90 electronic scooters and e-bikes spread across 12 share stations. This provides people with another active and affordable opportunity to travel throughout Lakewood and Cuyahoga County.
<b>Bike Lakewood Parade Roll for Light Up Lakewood</b>	Bike Lakewood	Lakewood residents and visitors	Led by Bike Lakewood, this annual parade roll, encourages people of all ages and abilities to bike through the Light Up Lakewood event and gain a different view of the holiday lights.
<b>National Bike to Work Day</b>	Bike Lakewood	Lakewood residents and visitors	This global celebration encourages people of all ages and abilities to bike to work and learn about the numerous benefits of biking: helping the environment, improving health and wellness, and more.
<b>Sidewalk Replacement Program</b>	City of Lakewood	Lakewood property owners	This program, part of the city's ten year strategy, seeks to improve the city's 180 miles of sidewalks and keep them among the most pedestrian-friendly in the state. Each year, the city sends inspectors to check the sidewalks for "trip hazards." Residents with identified trip hazards have some options. They can pay to have the sidewalk fixed themselves or participate in a citywide bid with the city's contractor — the idea being to lower the price for property owners.
<b>Cranksgiving</b>	Bike Lakewood	Public	Riders of all ages and skill levels receive a map of local grocery stores and are challenged to ride their bikes and purchase items for the socioeconomically disadvantaged families and senior citizens for the holiday season.
<b>Neighborhood Traffic Calming Program</b>	City of Lakewood	Public	This program promotes and provides guidance and direction for addressing issues with traffic volume and speed in Lakewood's neighborhoods. By slowing down vehicles and making streets safer, this helps preserve Lakewood's unique walkable characteristics and accessibility for pedestrians and bicyclists.
<b>Lakewood Chocolate Walk</b>	Lakewood Alive; Downtown Lakewood Business Alliance (DBLA)	Public	This annual walking event allows people to visit 25 shops and eateries in Downtown Lakewood to try their delicacies and learn about businesses in Lakewood.

<b>Walk with a Doc</b>	Lakewood Health System	Public	Lakewood community members can walk with medical professionals starting at Lakewood hospital's main campus. During the walk, people can ask questions and learn from health care professionals.
<b>Walking with Purpose Bible Study</b>	St James Lakewood	Women of Lakewood	Walking with Purpose encourages women in Lakewood to walk and chat about their spiritual journeys.
<b>GardenWalk Lakewood</b>	GardenWalk Lakewood	Public	This annual event celebrates the hard work of the gardeners in Lakewood by doing walking tours of Lakewood's gardens.
<b>Family Room Walk &amp; Stroll</b>	City of Lakewood	Public; families with children under the age of 8	This summer series encourages families to gather and go for a walk at Lakewood Park.
<b>NOACA Biking Maps</b>	NOACA; City of Lakewood	Public	This Cuyahoga countywide map helps bicyclists navigate the bike network in the county. The maps are free and available at bike shops, libraries, and other tourist information centers.
<b>Kidical Mass Bike Ride</b>	Bike Lakewood and Beat Cycles	Public; families with children of all ages	This monthly, family-friendly, easygoing ride around quiet residential streets includes bicycle safety instruction prior to the ride and story time with refreshments and an opportunity to socialize afterwards

# EXISTING TRANSPORTATION NETWORK

Due to population density as well as historic and recent transportation investments, Lakewood is the most walkable and bikeable city in Ohio, boasting a Walk Score of 70/100 and a Bike Score of 64/100.<sup>12</sup> The project team used GIS data, desk review, and field visits to analyze the existing facilities for walking and biking in the city.

## PEDESTRIAN & CROSSING FACILITIES

The project team conducted a digital inventory of existing sidewalks and bicycle facilities data from the City of Lakewood, NOACA, and ODOT Transportation Information Mapping System (TIMS). The inventory helped the team understand the completeness and connectedness of the current active transportation system.

Lakewood has an extremely robust sidewalk network of over 180 miles that provides pedestrians with access to the entire city.<sup>13</sup> Multiuse paths are not a common facility in Lakewood’s pedestrian network; most of the city’s paths are constrained to local parks or Scenic Park Metropark in the Rocky River Valley area which is part of the regional Emerald Necklace trail network.

Almost every roadway in Lakewood has sidewalk on both sides of the street, including all non-local corridors except for Riverside Drive which only has sidewalk on one side of the roadway due to topographical constraints. The only other roadways with noticeable gaps in the sidewalk network are:

- » Edgewater Drive between Parkside Drive and Nicholson Avenue, and
- » Clifton Boulevard between West Clifton Boulevard and the western border with Rocky River.

As noted in Table 3, Lakewood is entering the final year of a ten-year Sidewalk Replacement Program for improving the city’s pedestrian network. The city sends out inspectors annually to assess sidewalks for cracks and trip hazards. On properties where hazards are identified, property owners may opt into the Sidewalk Replacement Program and receive city support for remedying the issue either through grinding the seams of the sidewalk or replacing the hazardous slab



**Figure 14. Sidewalk chart art in Lakewood (Source: Lakewood Alive)**



**Figure 15. Sidewalk on Cove Avenue**

<sup>12</sup> Walk Score. *Cities in Ohio*. Retrieved from <https://www.walkscore.com/OH/>

<sup>13</sup>Lakewood Community Vision. *Mobility and Connectivity* (2017). Retrieved from <https://vision.lakewoodoh.gov/focus-areas/mobility/>

completely.<sup>14</sup> By the final year of the program, the entire City of Lakewood will have been evaluated for needed sidewalk improvements.

Because of Lakewood’s dense, grid roadway network, there are a high number of intersections within the city. In Ohio, any intersection is a legal crossing for pedestrians. Marking a crosswalk impacts which roadway user is required to yield (i.e., pedestrian vs vehicle). Not all intersections in Lakewood have marked crosswalks, however the majority of intersections on major east-west corridors – including Lake Avenue, Clifton Boulevard, Detroit Avenue, Franklin Boulevard, Madison Avenue – have two crosswalks marked (typically the north and south legs of the intersection). Where there are destinations that generate pedestrian activity (e.g., Lakewood High School on Franklin Boulevard), there are typically crosswalk markings for all four legs of the intersection. Across the City, there are a number of crosswalks that have a stamped brick pattern and red pavement coloring. These types of crosswalks are most prominent on Detroit Avenue.

## BICYCLE FACILITIES

Lakewood’s off-street bicycle facilities are limited to the multiuse path trails noted in the section above. In the Rocky River Valley, the Valley Parkway Trail provides Lakewood residents with access into the regional trail network. It is also part of the State Bike Route system – Route 71.

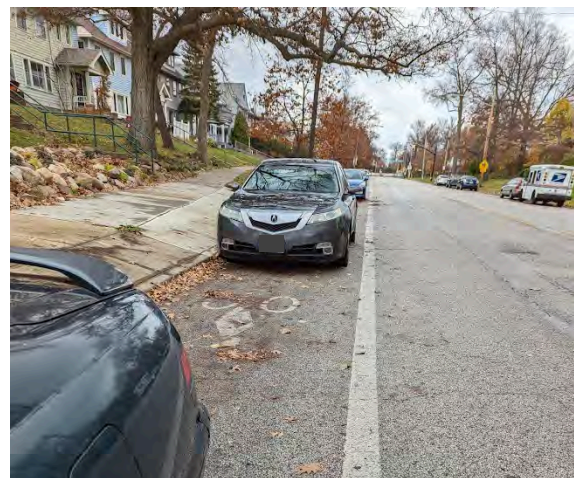
The city’s on-street bicycle network is comprised of traditional bike lanes, buffered bike lanes, a small section of protected bike lane, and shared lane markings. Most of these facilities are located on major corridors which also coincide with business clusters or amenities like parks and schools.

Aside from a small section of protected bike lane on Clifton Boulevard between West Clifton Boulevard and the border with Rocky River to the west, existing bicycle facilities in Lakewood do not provide adequate separation from vehicles. This is a barrier that impacts people’s ability to feel safe traveling by bicycle. An additional barrier for bicycling is the use of bicycle facilities by other modes, for example runners using the bike lane on Lake Avenue or vehicles parking in bikeways as shown in Figure 17.

Noticeably, there are only two on-street bicycle facilities in Lakewood that provide north-south access – a bike lane on Warren Road between Detroit Avenue and Hilliard Road, and a buffered bike lane on Hilliard Road between Franklin Boulevard and Riverside Drive. Although the majority of



**Figure 16. Protected bikeway on Clifton Boulevard**



**Figure 17. Cars parked in the conventional bike lane on West Clifton Boulevard**

<sup>14</sup> City of Lakewood. Sidewalk Replacement Program (2020). Retrieved from [https://www.lakewoodoh.gov/wp-content/uploads/2016/02/SidewalkReplacementPrg\\_rev022020.pdf](https://www.lakewoodoh.gov/wp-content/uploads/2016/02/SidewalkReplacementPrg_rev022020.pdf)

north-south roadways in Lakewood are residential, the lack of identified north-south routes for cyclists creates gap in the network that limit people’s ability to travel by bicycle within the city.

In Lakewood, it is legal for both children and adults to ride a bicycle on the sidewalk. The only exceptions are if sidewalks are congested with pedestrian traffic or bicycles are explicitly prohibited on the sidewalk as indicated by signage. Cyclists under the age of eight are prohibited from riding on Berea Road, Detroit Avenue, Madison Avenue, and Warren Road without adult supervision.<sup>15</sup> When riding on the sidewalk, cyclists are required to abide by all laws relevant to pedestrians. When riding in the roadway they are required to abide by all laws relevant to vehicles.<sup>16</sup>

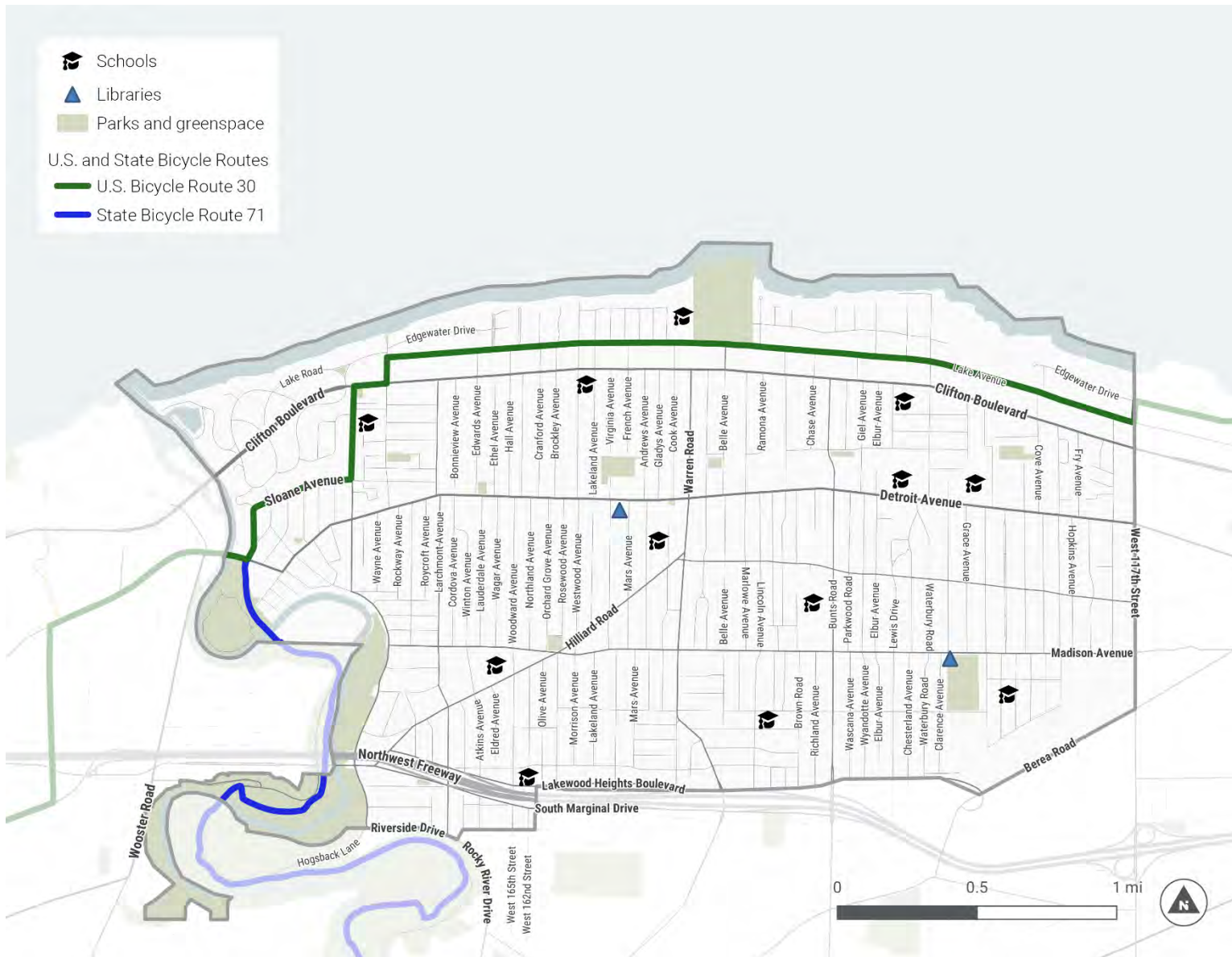
U.S. Bike Route 30 runs approximately 225 miles from Conneaut to Toledo.<sup>17</sup> In Lakewood, the route enters from the east on Lake Avenue and runs the length of the corridor between West 117<sup>th</sup> Street and West Clifton Boulevard as shown in Figure 18. It continues into Rocky River to the west via West Clifton Boulevard, Sloane Avenue, and Detroit Avenue. U.S. Bike Route 30 intersects with State Route 71 at the intersection of Detroit Avenue and Valley Parkway.

---

<sup>15</sup> Knabe Law Firm. *Lakewood, Ohio Bike Ordinances for Sidewalk Riding Explained* (2022). Retrieved from <https://klfohio.com/lakewood-ohio-bike-ordinances-for-sidewalk-riding-explained/>

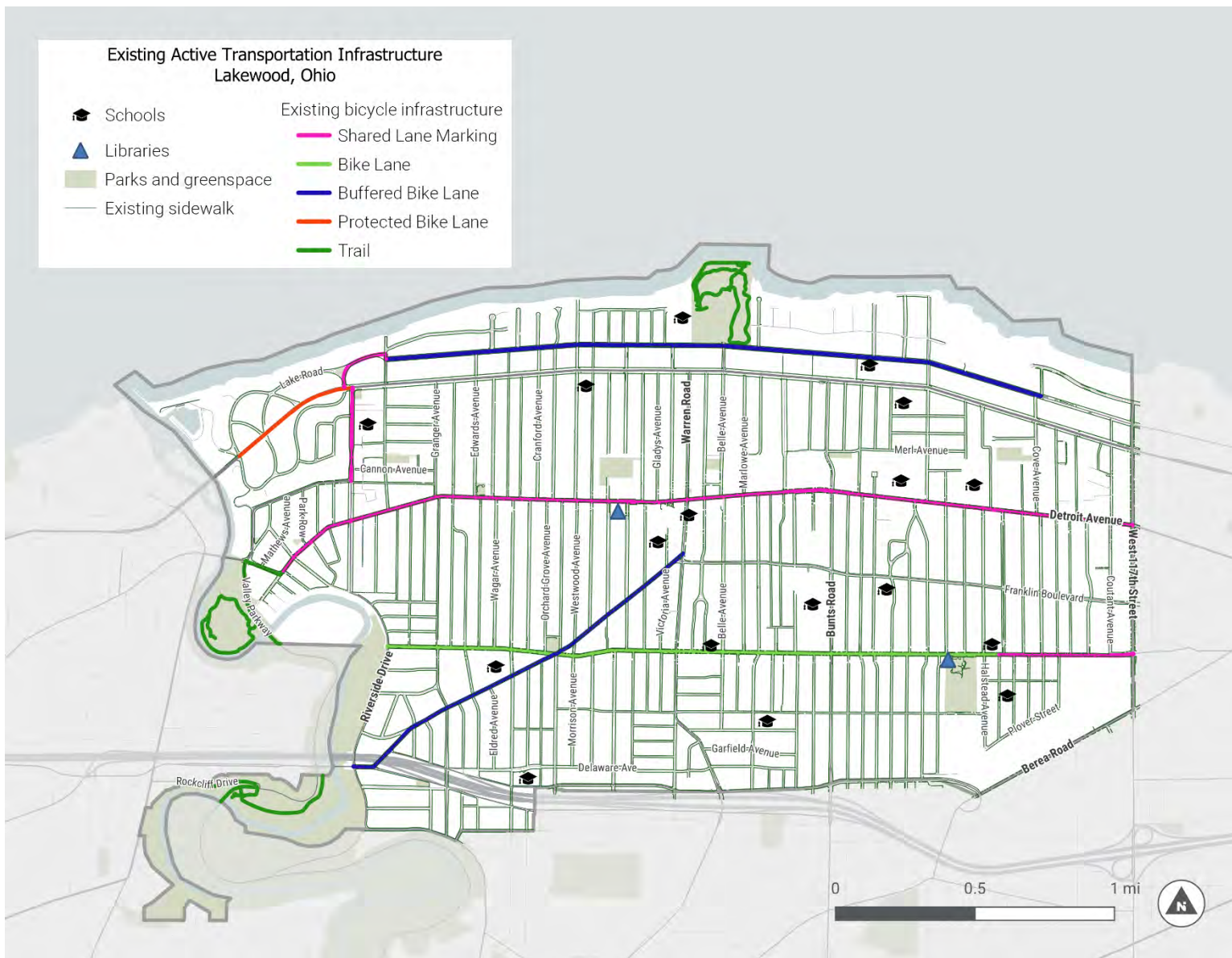
<sup>16</sup> City of Lakewood. Biking Lakewood. Retrieved from <https://www.lakewoodoh.gov/bikinglakewood/>

<sup>17</sup> Adventure Cycling Association. *USBRs maps and route resources*. Retrieved from <https://www.adventurecycling.org/routes-and-maps/us-bicycle-route-system/maps-and-route-resources/?route=ohio30>



**Figure 18. State and US Bike Routes in Lakewood**

*Geographic and mapping information presented in this document is for informational purposes only, and is not suitable for legal, engineering, or surveying purposes. Mapping products presented herein are based on information collected at the time of preparation. Toole Design Group, LLC makes no warranties, expressed or implied, concerning the accuracy, completeness, or suitability of the underlying source data used in this analysis, or recommendations and conclusions derived therefrom.*



**Figure 19. Existing bicycle and pedestrian facilities in Lakewood**

Geographic and mapping information presented in this document is for informational purposes only, and is not suitable for legal, engineering, or surveying purposes. Mapping products presented herein are based on information collected at the time of preparation. Toole Design Group, LLC makes no warranties, expressed or implied, concerning the accuracy, completeness, or suitability of the underlying source data used in this analysis, or recommendations and conclusions derived therefrom.

## PUBLIC TRANSIT SERVICES

Public transportation in Lakewood is provided by the Greater Cleveland Regional Transit Authority (GCRTA). The City's only train station is located on the border with Cleveland at West 117<sup>th</sup> Street and Madison Avenue. Via the Red Line, this station connects residents to downtown Cleveland to the northeast or Cleveland-Hopkins International Airport to the southwest. The Red Line operates 24 hours, seven days a week.<sup>18</sup>

There are eight bus lines that provide access across the city and connect to the adjacent communities of Cleveland and Rocky River:

- » Warren-West 130: Line 83 provides north-south access along Warren Road up to Lakewood Park. It runs from approximately 5 A.M. to 12 A.M. on weekdays, and 5 A.M. to 10 P.M. on weekends with a weekday frequency of 30 minutes.<sup>19</sup>
- » West 117-Puritas: Line 78 also provides north-south access and runs along West 117<sup>th</sup> Street. It runs from approximately 5 A.M. to 1 A.M. every day.<sup>20</sup>
- » Madison Clark: Line 25 runs east-west along the length of Madison Avenue 24 hours a day, seven days a week with a weekday frequency of 30 minutes.<sup>21</sup>
- » Detroit: Lines 26 and 26A both run east-west along the entire Detroit Avenue corridor within Lakewood. They run 24 hours a day, seven days a week with a weekday frequency of 15 minutes.<sup>22</sup>
- » Cleveland State Lines: Lines 55, 55B, and 55C all run on Clifton Boulevard. They run from approximately 4 A.M. to 12 A.M. on weekdays with a frequency of 15 minutes. On weekends, the 55 runs from 4 A.M. to 12 A.M. with reduced frequency of 30 minutes.<sup>23</sup>

The Cleveland State Lines on Clifton Boulevard provide service via a bus and bike only lane during peak hours.

In addition to the public transportation service provided by GCRTA, the City of Lakewood Division of Aging also provides accessible medical and non-medical transportation specifically for seniors. To access this service, eligible seniors may schedule rides ahead of time no later than three business days prior to when transportation is needed.<sup>24</sup>

---

<sup>18</sup> Greater Cleveland Regional Transit Authority. Red Line (2022). Retrieved from [https://www.riderta.com/sites/default/files/schedule-pdfs/RedLine\\_0.pdf](https://www.riderta.com/sites/default/files/schedule-pdfs/RedLine_0.pdf)

<sup>19</sup> Greater Cleveland Regional Transit Authority. 83 Warren-West 130 (2021). Retrieved from <https://www.riderta.com/sites/default/files/schedule-pdfs/83.pdf>

<sup>20</sup> Greater Cleveland Regional Transit Authority. 78 West 117-Puritas (2021). Retrieved from <https://www.riderta.com/sites/default/files/schedule-pdfs/78.pdf>

<sup>21</sup> Greater Cleveland Regional Transit Authority. 25 Madison-Clark (2022). Retrieved from <https://www.riderta.com/sites/default/files/schedule-pdfs/25.pdf>

<sup>22</sup> Greater Cleveland Regional Transit Authority. 26-26A Detroit (2022) Retrieved from <https://www.riderta.com/sites/default/files/schedule-pdfs/26-26A.pdf>

<sup>23</sup> Greater Cleveland Regional Transit Authority. Cleveland State Line (2022) Retrieved from <https://www.riderta.com/sites/default/files/schedule-pdfs/ClevelandStateLine.pdf>

<sup>24</sup> City of Lakewood. Division of Aging Senior Service Flyer. Retrieved from <https://www.lakewoodoh.gov/wp-content/uploads/2019/10/SeniorServicesFlyer.pdf>

## SCHOOL TRAVEL

There are 11 schools in Lakewood City School District including seven elementary schools, two middle schools, one high school, and one center for innovation.

- » Emerson Elementary School
- » Grant Elementary School
- » Harrison Elementary School
- » Hayes Elementary School
- » Horace Mann Elementary School
- » Lincoln Elementary School
- » Roosevelt Elementary School
- » Garfield Middle School
- » Harding Middle School
- » Lakewood High School
- » Taft Center for Innovation

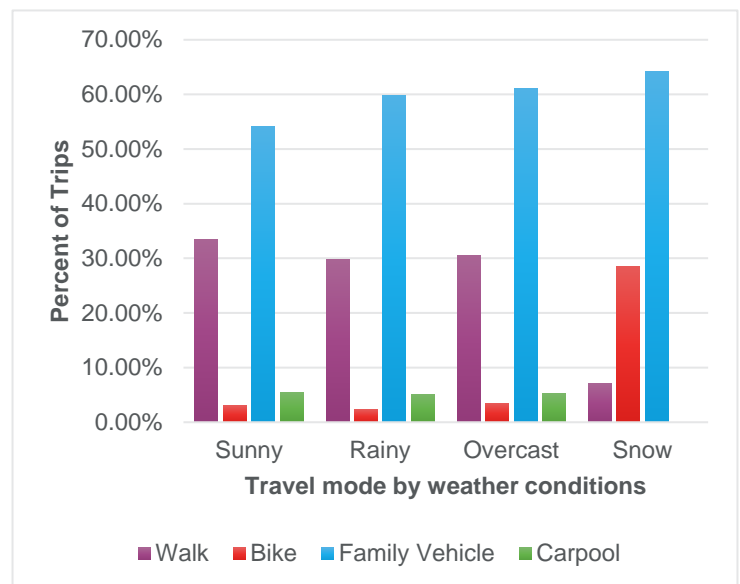


**Figure 20. Bike racks at Lakewood High School in December**

Lakewood City Schools does not offer any bussing to students in the district, resulting in high rates of students either walking and biking to school or being driven by caregivers. In addition to public schools, there are a number of private and charter schools in Lakewood including Lakewood Catholic Academy, St. Edward High School, Lakewood Lutheran School, Padre Pio Academy, and Albert Einstein Academy.

To better understand student travel trends, student travel tallies were conducted by teachers in October 2022 to evaluate rates of walking and biking to school. The analysis included 138 classrooms across Lakewood City Schools (which does not include Lakewood Catholic Academy). Weather conditions during the travel tally collection period ranged from sunny to rainy to snowy (Figure 21).

As noted in the Community Engagement section, a caregiver survey was distributed through Lakewood City Schools and Lakewood Catholic Academy. 60 percent of survey respondents indicated that their child currently walks or bikes to school sometimes during the school year. The survey also showed a 40 percent increase in the number of students who walk or bike home from school in the afternoon, compared to walking or biking to school in the morning. Caregiver survey responses are available in Appendix A: Safe Routs To School Caregiver Survey Results.



**Figure 21. Travel mode to school by weather conditions**

# ANALYSES

After mapping the existing transportation system, the project team performed several analyses to better understand the equity of the network, its connectivity, use of walking and bicycling facilities, safety, and infrastructure conditions. The following section provides a summary of each existing conditions analysis. The full analysis is available in Appendix D: State of Walking, Biking, and Safety Report.

## EQUITY

### Incorporating Equity in Active Transportation Planning

Active transportation options contribute to a more equitable transportation system by reducing barriers for people who do not use a motor vehicle. Many people do not drive because of ability, income, age, or a combination of these factors. The cost of owning and maintaining a vehicle can be a major burden, especially on low-income families. People without a vehicle need to access employment, school, grocery shopping, and a variety of other activities to fully participate in society. Transit, walking, and bicycling play a vital role in the overall transportation system by offering increased mobility, independence, and access to opportunity for people without vehicles.

National statistics point towards the need for equity in active transportation planning and design. Across the country and in Ohio, a disproportionate share of walking and bicycling fatalities occur among communities of color, older adults, and low-income populations.<sup>1</sup> Connected and accessible active transportation infrastructure for these groups results in better access to daily physical activity and improved quality of life.

1. Ohio Department of Transportation. (2020), *Walk.Bike.Ohio Safety Analysis Reports*.  
<https://www.transportation.ohio.gov/wps/portal/gov/odot/programs/walkbikeohio/existing-future-conditions-analysis/safety-analysis-reports>

### Equity analysis

As part of its statewide bicycle and pedestrian plan, [Walk Bike Ohio](#), ODOT performed a statewide analysis of need and demand for active transportation.

The indicators used in the demand analysis include employment density, population density, walk and bike commute mode share, park density, presence of colleges and universities, retail employment density, and number of people below 200% of the federal poverty line. These inputs are used to create a composite score for every census tract in the state.

The need analysis also results in a composite score for every census tract in the state, with the need scores assigned based on the presence of non-white groups, youth, older adults, poverty, low educational attainment, limited English proficiency, and low motor vehicle access. Higher scores correspond to a higher presence of underserved groups and indicate a greater need to increase equitable outcomes.

Areas of high need and high demand should be prioritized for bicycle and pedestrian improvements, because residents in these areas likely rely more heavily on active transportation options for getting around and to make use of investments in active transportation.

Areas with high demand for active transportation in Lakewood include the eastern half of Lakewood between West 117<sup>th</sup> Street and Warren Road; western parts of the city including the residential areas surrounding Edwards Park and Kaufman Park; residential areas near Scenic Park Metropark and the Rocky River Valley; and a small census tract surrounding Lincoln Elementary School.

Areas of high need in Lakewood are located across the southern and eastern parts of the city including Birdtown, the residential areas around Cove Community Center, parts of Downtown Lakewood<sup>25</sup>, and a small census tract east of Edwards Park.

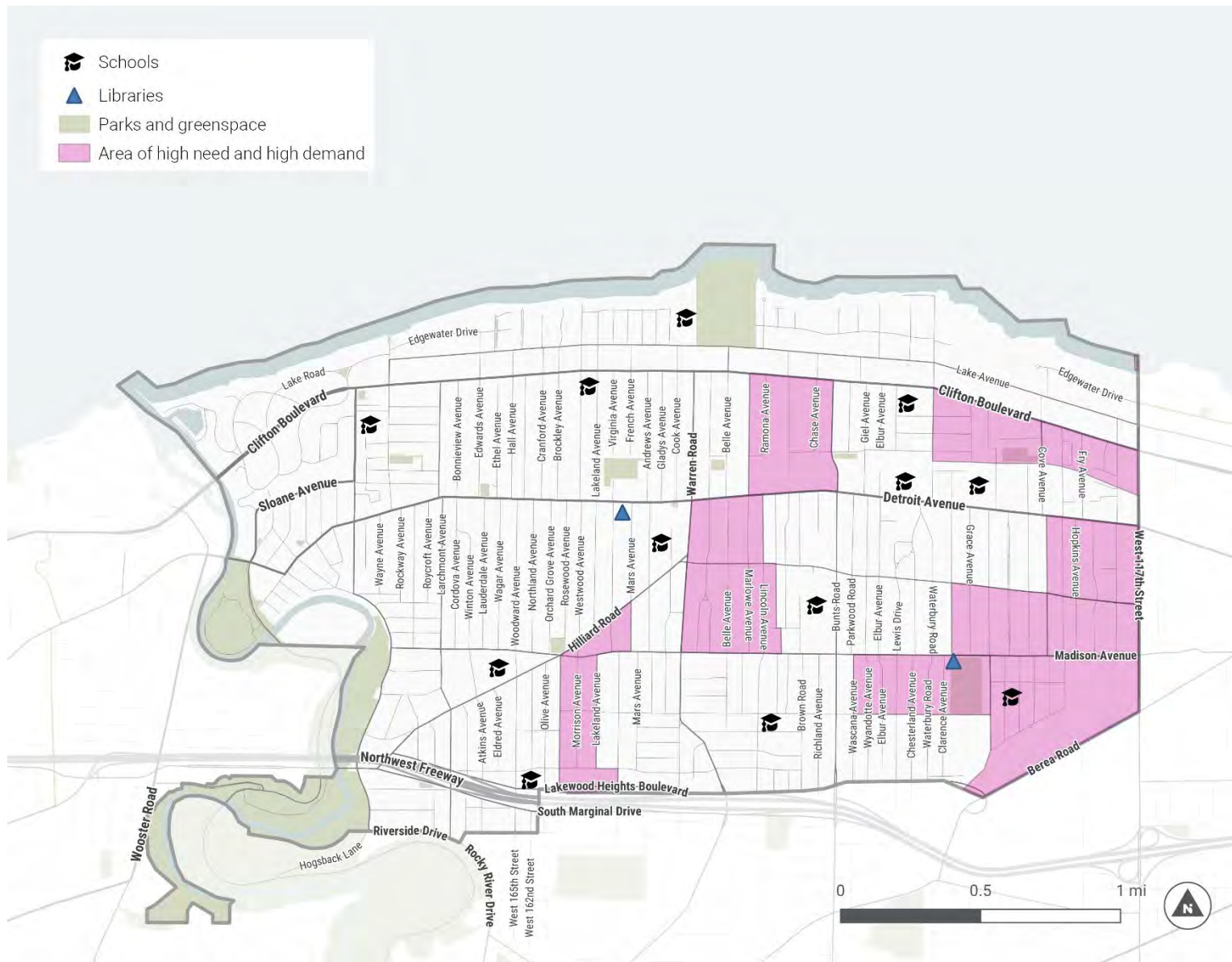
Areas with overlapping high demand and high need are key areas to invest in pedestrian and bicycle infrastructure are shown in Figure 22 and include:

- Birdtown,
- Residential areas around Cove Community Center,
- Eastern parts of Downtown Lakewood and adjacent areas between Madison Avenue and Clifton Boulevard, and
- Residential areas east of Hilliard Road near Wager Park and Harding Middle School.

An additional review of equity-related data was conducted as part of the Action Plan development, using data from the USDOT Historically Disadvantaged Communities dataset. A summary of that analysis is available in the Crash Data and Safety Analysis section of the Action Plan.

---

<sup>25</sup> Downtown Lakewood is defined as the areas along and around Detroit Avenue between Bunts Road to the west and Arthur Avenue to the east, including areas around Warren Road. Map developed by Lakewood Alive available here: <https://www.lakewoodalive.org/wp-content/uploads/2019/09/Downtown-Lakewood-Map-FINAL-web-version.pdf>



**Figure 22. Composite Active Transportation Need and Demand Analysis**

*Geographic and mapping information presented in this document is for informational purposes only, and is not suitable for legal, engineering, or surveying purposes. Mapping products presented herein are based on information collected at the time of preparation. Toole Design Group, LLC makes no warranties, expressed or implied, concerning the accuracy, completeness, or suitability of the underlying source data used in this analysis, or recommendations and conclusions derived therefrom.*

## NETWORK UTILIZATION

### Level of walking and bicycling activity in Lakewood

Network utilization describes who is walking and bicycling, where, and how often. Several factors impact network usage, including land use and development patterns, the presence or absence of active transportation facilities, proximity of destinations, safety concerns, and socioeconomic need. Understanding the level of walking and bicycling activity in Lakewood provides an understanding of where people are already walking and bicycling and where there may be a lack of infrastructure, because there are low levels of walking and bicycling activity.

#### Walking and bicycling activity

The project team used StreetLight to analyze levels of walking and bicycling (Figure 23 and Figure 24) and better understand where and when walking and bicycling activity is occurring within Lakewood.

StreetLight uses crowdsourcing data to understand where people are currently walking and biking. While this data may not be an exact analysis due to the limitations of crowdsourcing data (e.g. StreetLight uses smartphone data, which not all people have access to), the data does give a better understanding of where a greater volume of people are likely walking and biking. Based on the analysis the following areas have high levels of walking and biking:

- » Walking activity
  - Downtown Lakewood,
  - Lakewood Park and surrounding area,
  - Residential neighborhood directly south of Downtown Lakewood between Detroit Avenue and Madison Avenue, and
  - Lakewood High School and surrounding area.
- » Bicycling activity
  - Downtown Lakewood,
  - Lakewood Park and surrounding area, and
  - Residential neighborhoods surrounding Downtown Lakewood to the north (up to Clifton Boulevard) and to the south (down to Madison Avenue).



**Figure 23. Streetlight data of pedestrian trip destinations**

*Geographic and mapping information presented in this document is for informational purposes only, and is not suitable for legal, engineering, or surveying purposes. Mapping products presented herein are based on information collected at the time of preparation. Toole Design Group, LLC makes no warranties, expressed or implied, concerning the accuracy, completeness, or suitability of the underlying source data used in this analysis, or recommendations and conclusions derived therefrom.*



**Figure 24. Streetlight data of bicycle trip destinations**

*Geographic and mapping information presented in this document is for informational purposes only, and is not suitable for legal, engineering, or surveying purposes. Mapping products presented herein are based on information collected at the time of preparation. Toole Design Group, LLC makes no warranties, expressed or implied, concerning the accuracy, completeness, or suitability of the underlying source data used in this analysis, or recommendations and conclusions derived therefrom.*

## NETWORK CONNECTIVITY

### Completeness of active transportation system

Active transportation facilities that connect people to jobs, schools, parks, and other destinations form a complete network. Filling in missing connections expands access and mobility for people walking and bicycling and providing multiple route options accommodates people of all ages and abilities. Evaluating network connectivity provides an understanding of where gaps in the network exist and whether low comfort or high comfort walking and bicycling facilities exist.

### Network Gaps and generators

A review of gap and generators to biking and walking trips helps examine physical breaks in an active transportation network, such as sidewalk gaps or missing connections between bicycle facilities. This type of review also identifies generators to biking and walking trips that may influence project prioritization and implementation. During stakeholder meetings, attendees identified the following gaps and generators:

- » Gaps
  - For cyclists – North-south routes across multimodal roadways on the HRN – Clifton Avenue, Detroit Avenue, Madison Avenue, and Franklin Boulevard.
  - For cyclists – A major low-stress east-west connection across the City.
  - For pedestrians – Edgewater Drive between Parkside Drive and Nicholson Avenue.
  - For pedestrians – Clifton Boulevard between the border with Rocky River and West Clifton Boulevard.
- » Generators for cyclists and pedestrians
  - Schools
  - Business clusters along the western end and downtown area of Detroit Avenue
  - Business clusters along Madison Avenue
  - Lakewood Park
  - Cove Community Center
  - Post Office

The key takeaways are informed by stakeholder and community engagement. Lakewood has a well-connected sidewalk network with minimal gaps but lacks a connected network for bicyclists. Many bicyclists in Lakewood would feel more comfortable riding in the roadway on a low stress facility. However, in current conditions, many cyclists feel more comfortable riding on the sidewalk which can lead to multimodal conflicts as pedestrians and cyclists travel to activity generators across the city.

# SAFETY

## Evaluating crash trends and patterns

Evaluating crash trends and patterns identifies where crashes are currently occurring and provides a better understanding of what factors may be contributing to crashes. Understanding these crashes can lead to projects that have the greatest likelihood of improving safety for pedestrians and bicyclists. These analyses are especially important because Ohio is not trending in the right direction for bicyclist and pedestrian safety.

### Crash analysis

**Table 4. Bicycle and pedestrian crashes near schools**

Five years of bicycle and pedestrian crash data were reviewed and mapped using ODOT’s GIS Crash Analysis Tool; this exercise identified problem locations for people walking and bicycling. During the time period reviewed (2017 -2021), there were 141 crashes involving bicyclists and pedestrians in Lakewood, 21 of which resulted in serious injuries and 1 of which resulted in a fatality. Table 4 shows the percentage of bicycle and pedestrian crashes near schools in Lakewood.

	Pedestrian		Bicyclist	
	Crashes	Fatal or serious injury crashes	Crashes	Fatal or serious injury crashes
Within 1/4 mi. of schools	66%	67%	53%	40%
Within 1/2 mi. of schools	31%	17%	41%	50%
More than 1/2 mi. from schools	3%	17%	7%	10%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Concentrations of pedestrian crashes are located:

- » Along Detroit Avenue, and near the intersection with Warren Road,
- » Along the eastern section of Clifton Boulevard, and near the intersections with Belle Avenue and West 117<sup>th</sup> Street, and
- » Along Madison Avenue, and near the intersections with Hilliard Road and Warren Road.

Concentrations of bicycle crashes are located:

- » Along Sloane Avenue near the Emerald Necklace Arena and Scenic Park Metropark,
- » Along Madison Avenue, and near Harding Middle School, Madison Park, and the intersection with Warren Road,
- » Along Detroit Avenue, near the intersections with Larchmont Avenue, Warren Road, and Bunts Road, and
- » Hilliard Road between Madison Avenue and Warren Road
- » Along Franklin Road.

The following pages visualize the 2017 – 2021 pedestrian and bicycle fatalities in Lakewood (Figure 25 and Figure 26). Additional multimodal crash data analysis is available in the Action Plan.



**Figure 25. Pedestrian crashes in Lakewood (2017- 2021)**

*Geographic and mapping information presented in this document is for informational purposes only, and is not suitable for legal, engineering, or surveying purposes. Mapping products presented herein are based on information collected at the time of preparation. Toole Design Group, LLC makes no warranties, expressed or implied, concerning the accuracy, completeness, or suitability of the underlying source data used in this analysis, or recommendations and conclusions derived therefrom.*



**Figure 26: Bicycle crashes in Lakewood (2017 - 2021)**

*Geographic and mapping information presented in this document is for informational purposes only, and is not suitable for legal, engineering, or surveying purposes. Mapping products presented herein are based on information collected at the time of preparation. Toole Design Group, LLC makes no warranties, expressed or implied, concerning the accuracy, completeness, or suitability of the underlying source data used in this analysis, or recommendations and conclusions derived therefrom.*

## Bicycle Level of Traffic Stress

A Bicycle Level of Traffic Stress (Bike LTS) analysis assesses the comfort level of the existing bicycle network. The analysis provides a score for each roadway based on how stressful it is to ride for an average person who is interested in cycling more but concerned about doing so in traffic. This describes most of the adult population. Bike LTS is based on the premise that a cyclist's level of comfort on a road increases as separation from cars increases and as traffic volumes and/or speeds decrease.

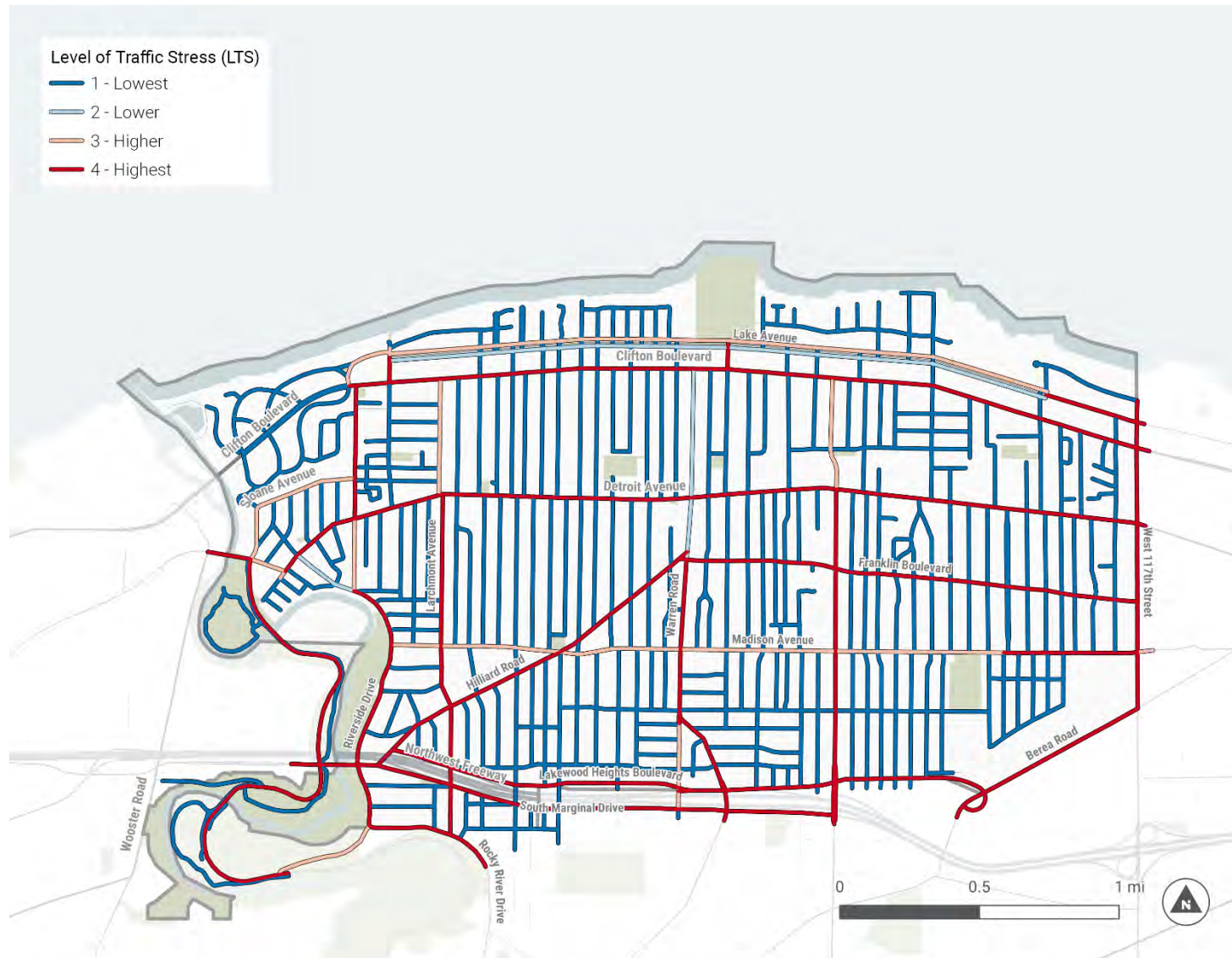
The Bike LTS analysis is useful for identifying roadways that may benefit from upgrading an existing high-stress facility to a lower-stress option or recommending a new bicycle facility where one does not exist. The analysis helps identify appropriate bicycle facilities that are comfortable for people of all ages and people with disabilities. The Bike LTS analysis groups roads into one of four categories:

- » **Bike LTS 1** – A low stress facility suitable for all ages and people with disabilities. These facilities have strong separation from motor vehicle traffic or are well-established on low speed, low volume roads.
- » **Bike LTS 2** – A facility suitable for people who are “interested but concerned” about riding a bicycle, which includes most adults and families. These facilities are separated from moderate speed and multilane roads or are shared lanes on lower speed, lower volume roads.
- » **Bike LTS 3** – A facility suitable for people who are “enthused and confident” about riding a bicycle. These facilities are shared lanes on moderate speed or separated from multilane, medium to high volume, and higher speed roads.
- » **Bike LTS 4** – A high stress facility is uncomfortable for most adults. These facilities are mixed flow on moderate speed or higher volume roads or in close proximity to high speed, high volume, or multilane roads.

Figure 27 illustrates the results of the LTS analysis. The majority of streets in Lakewood are residential with low traffic volumes and speeds that are comfortable for most cyclists. However, nearly all of Lakewood's major corridors (where most amenities and destinations are located) have a score of LTS 3 or LTS 4, indicating the need for low-stress facilities that better connect people to the places they need and want to go. One notable exception is the segment of Clifton Boulevard between West Clifton Boulevard and East Lake Road. Although it is an arterial, there is a protected bike lane which results in a score of LTS 1.

The high stress roads (LTS 4) are primarily the following:

- » Clifton Boulevard
- » Detroit Avenue
- » Riverside Drive
- » Hilliard Road
- » Franklin Boulevard
- » Lakewood Heights Boulevard
- » West 117<sup>th</sup> Street
- » Berea Road



**Figure 27. Bicycle Level of Traffic Stress**

*Geographic and mapping information presented in this document is for informational purposes only, and is not suitable for legal, engineering, or surveying purposes. Mapping products presented herein are based on information collected at the time of preparation. Toole Design Group, LLC makes no warranties, expressed or implied, concerning the accuracy, completeness, or suitability of the underlying source data used in this analysis, or recommendations and conclusions derived therefrom.*

## Pedestrian Crossing Level of Traffic Stress

One of the primary factors influencing the safety and comfort of people walking is the level of stress they experience with crossing paths with cars. This occurs at intersections and driveways. Like the Bike LTS analysis, a Pedestrian Crossing LTS (PxLTS) assesses the comfort level of legal crossings. Except where pedestrians are prohibited, every intersection is a legal crossing for pedestrians whether marked or unmarked.

For this analysis each intersection receives a rating indicating the traffic stress experienced by an average pedestrian. PxLTS is useful for identifying crossings that could be enhanced to improve walkability and accessibility. The PxLTS groups intersections into one of the four categories below.

- » **PxLTS 1** – Segments and crossings are highly comfortable, pedestrian-friendly, and easily navigable for pedestrians of all ages and abilities, including seniors or school-aged children walking unaccompanied to school. PxLTS 1 indicates an ideal “pedestrian-friendly” environment.
- » **PxLTS 2** – Generally comfortable for many pedestrians, but parents may not feel comfortable with children walking alone. Seniors may have concerns about the walking environment and take more caution.
- » **PxLTS 3** – Walking is uncomfortable but possible. Minimal crossing facilities may be present, but barriers are present that make the crossing experience uninviting or uncomfortable.
- » **PxLTS 4** – Crossings have limited or no accommodation for pedestrians.<sup>26</sup>

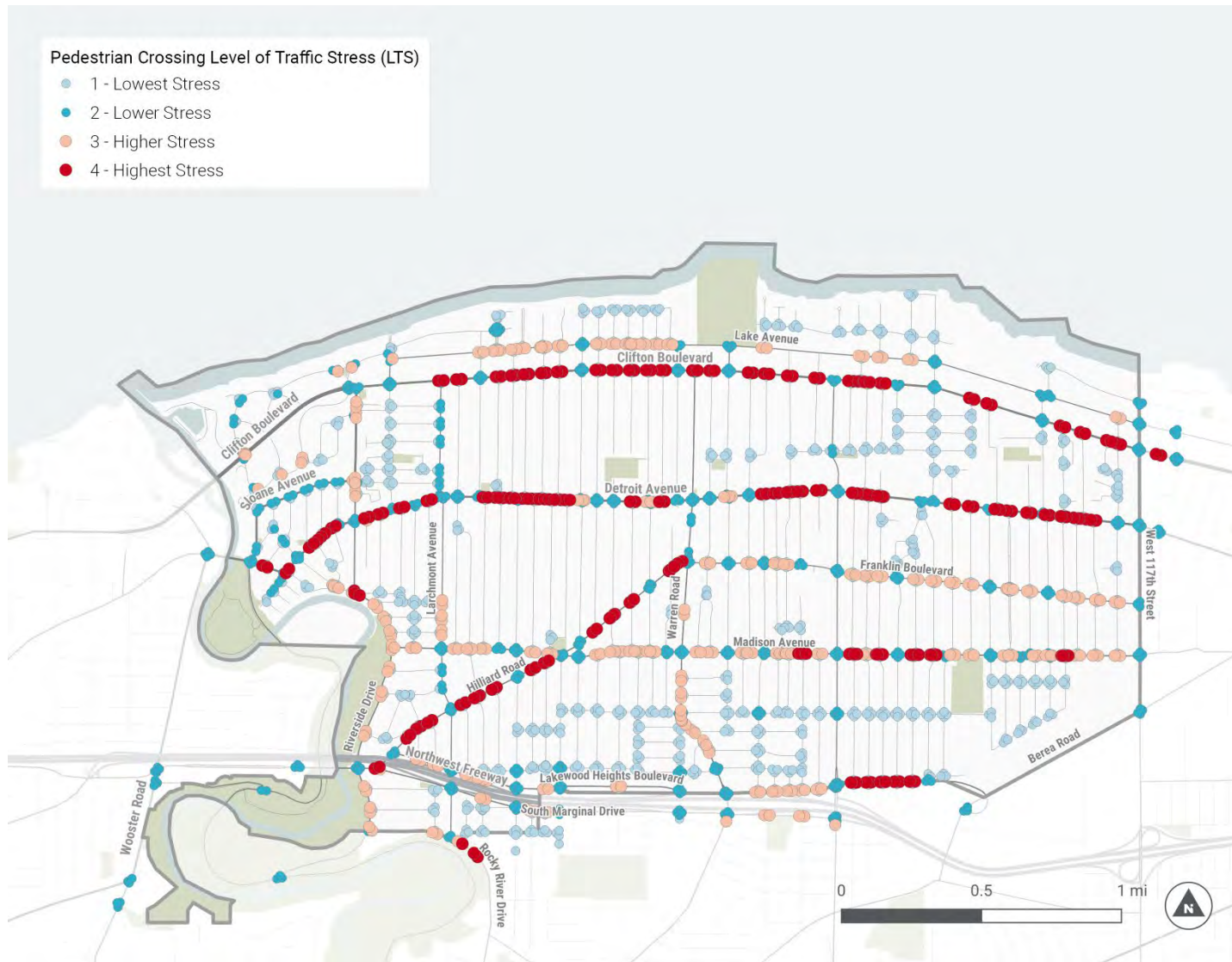
Similar to the results of the Bike LTS, the PxLTS indicates that high-stress conditions are most concentrated on major corridors, particularly east-west corridors. High stress crossings are primarily concentrated on the roadways below:

- » Clifton Boulevard
- » Detroit Avenue
- » Hilliard Road
- » Madison Avenue
- » Franklin Boulevard
- » Lake Avenue just west of Lakewood Park
- » Lakewood Heights Boulevard east of Bunts Road (shared with City of Cleveland)

Some of the roadways listed above have business clusters that generate pedestrian activity (specifically Detroit Avenue and Madison Avenue), and most are roadways with schools, community centers, and/or parks. Improving the comfort level of high-stress crossings is important for improving walkability, particularly near destinations that generate pedestrian activity. The PxLTS results are shown in Figure 28. Figure 29 shows the distance to the nearest low stress crossing for all non-residential streets in Lakewood. This data reveals where people would need to walk 250 feet or more out of their way to find a low stress crossing and therefore where there may be need to prioritize crossing improvements.

---

<sup>26</sup> *Low-Stress Walk and Bike Network Plan*. City of Boulder, Colorado (2021). <https://bouldercolorado.gov/sites/default/files/2021-07/low-stress-walk-and-bike-network-plan-updated-63021.pdf>



**Figure 28. Pedestrian Crossing Level of Traffic Stress**

*Geographic and mapping information presented in this document is for informational purposes only, and is not suitable for legal, engineering, or surveying purposes. Mapping products presented herein are based on information collected at the time of preparation. Toole Design Group, LLC makes no warranties, expressed or implied, concerning the accuracy, completeness, or suitability of the underlying source data used in this analysis, or recommendations and conclusions derived therefrom.*



## High-Risk Network for Walking and Biking

As part of the Action Plan, a High-Risk Network for Walking and Biking (HRN) was developed for the City of Lakewood. The development of the HRN was informed by two analyses, described in Table 5. The outcome is a visualization of the corridors with the highest potential risk for bicycle and pedestrian crashes to occur in the future informed by both historical crash data and a statistical model based on roadway characteristics. Figure 30 shows the High-Risk Network for Lakewood.

Corridors on the HRN include:

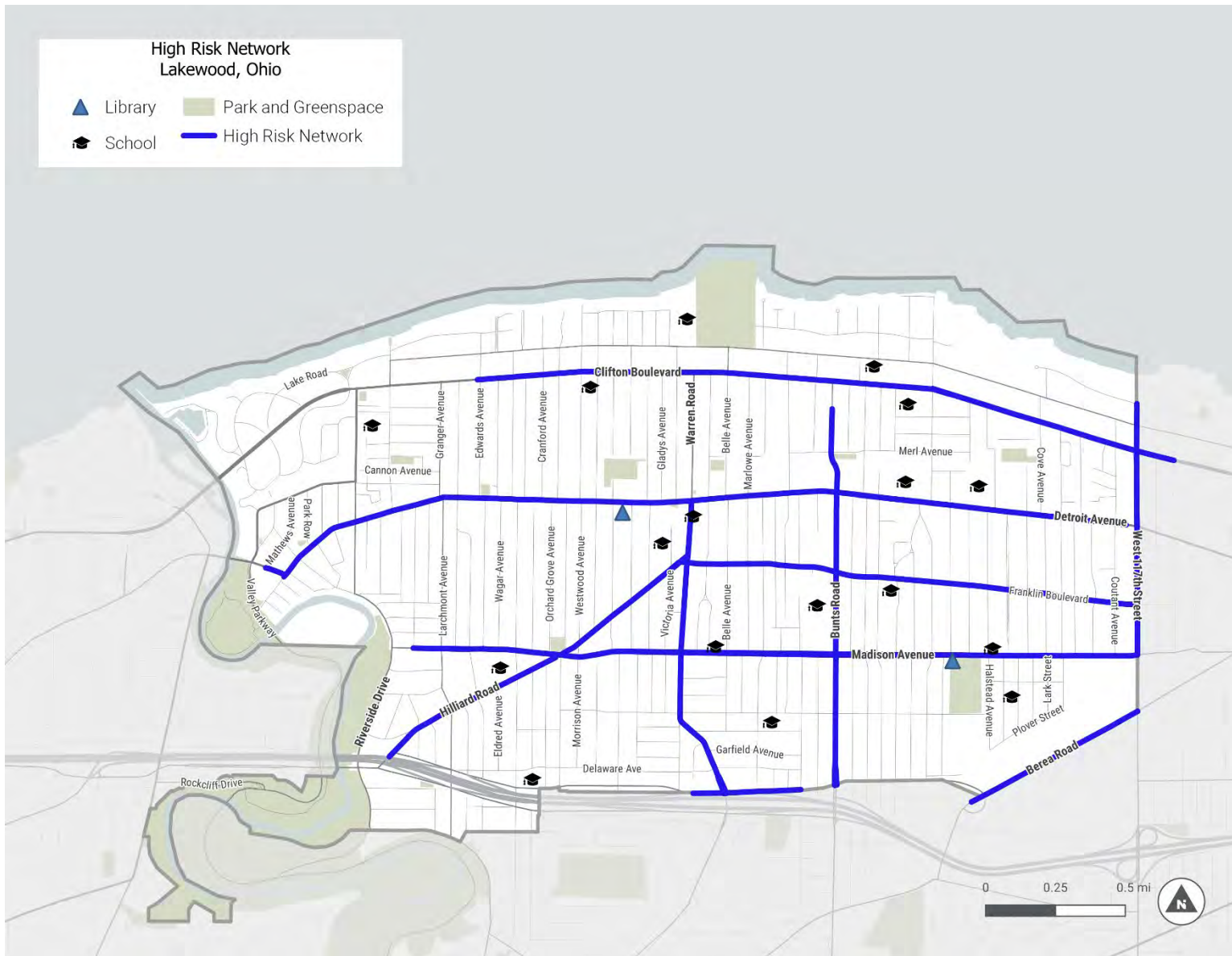
- » Clifton Boulevard
- » Bunts Road
- » Detroit Avenue
- » Franklin Boulevard
- » Madison Avenue
- » Hilliard Road
- » Warren Rad
- » West 117<sup>th</sup> Street
- » Berea Road
- » Lakewood Heights Boulevard

For more information about the HRN, its inputs, and safety recommendations to address crashes on the HRN, see the Action Plan.

**Table 5. Description of High-Risk Network for Walking and Biking inputs**

High Risk Network Input	What it tells us	Outputs included in High-Risk Network
Safe Streets Priority Finder (SSPF) <sup>27</sup>	Identifies segments with the highest estimated crash risk (and crash costs) based on statistical modeling that uses roadway characteristics information (functional roadway classification).	Roadway segments that scored “Highest Risk” from SSPF analysis
Severity-weighted Sliding Window Analysis	Identifies segments with the highest crash density, weighted by crash severity (all modes) based on historical data (2017-2021). Fatal crashes are given the highest weight, followed by serious injury crashes.	Roadway segments that scored “High Risk” from the SSPF tool <u>and</u> had a severity-weighted sliding window analysis score higher than one standard deviation.

<sup>27</sup> The SSPF was developed by Toole Design in collaboration with the City of New Orleans, University of New Orleans Transportation Institute, and New Orleans Regional Transit Authority. It is a free, interactive open-source resource available at the national scale. <https://www.saferstreetspriorityfinder.com/>



**Figure 30. High Risk Network for Walking and Biking**

*Geographic and mapping information presented in this document is for informational purposes only, and is not suitable for legal, engineering, or surveying purposes. Mapping products presented herein are based on information collected at the time of preparation. Toole Design Group, LLC makes no warranties, expressed or implied, concerning the accuracy, completeness, or suitability of the underlying source data used in this analysis, or recommendations and conclusions derived therefrom.*

# PROPOSED PROJECTS AND PROGRAMS





Figure 31. Cyclist in Birdtown

## PROPOSED PROJECTS AND PROGRAMS

This plan makes recommendations that will promote and support active transportation through a combination of infrastructure projects, policies, and programs. Infrastructure recommendations refer to physical, built projects that will change how roadways are configured to provide space for all users. Policy and program recommendations aim to re-prioritize walking and bicycling and to change the culture around active transportation and help increase its use through engagement, education, encouragement, enforcement, and evaluation.

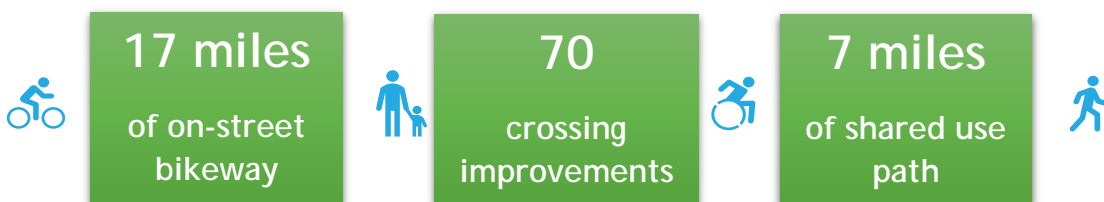
### INFRASTRUCTURE PROJECTS

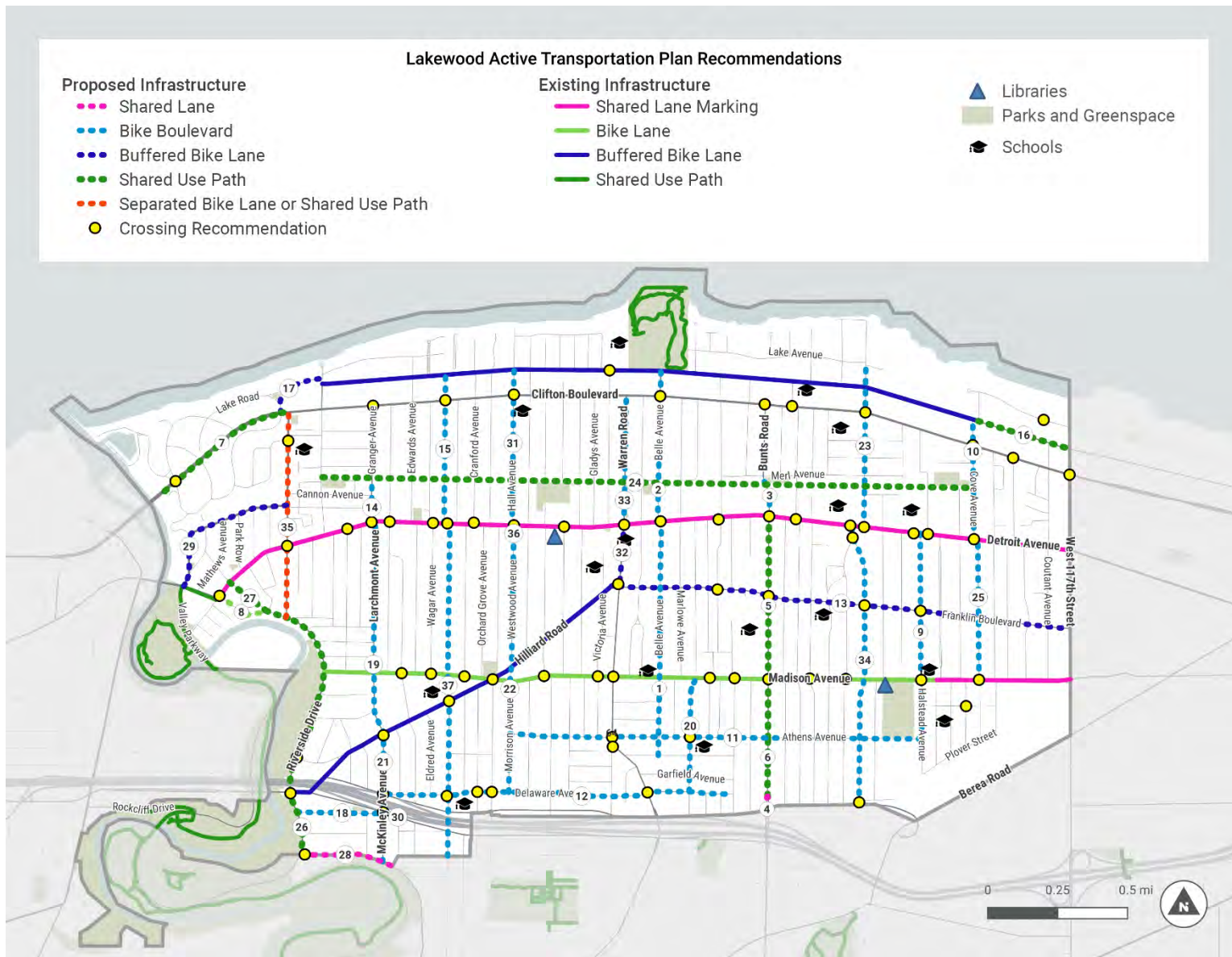
The final network is based on the existing conditions analysis, Stakeholder Committee meetings, and public input. The recommendations include new shared use paths and on-street bikeways to fill gaps between existing facilities and create a connected network. See Figure 32 and Figure 33 for network recommendations maps and Table 6 and Table 7 for a complete list of all proposed projects with descriptions.

Select main roadways (Lake, Clifton, Detroit, Madison) have two categories of recommendations presented:

- » Current recommendations based on feasibility considerations of existing conditions (including right-of-way, cost, and political support)
- » Longer-term, vision-based recommendations (pg. 65) to be considered during project implementation. This recommendation may require additional funding, political support, right-of-way, or the construction of other ATP recommendations before it is appropriate to implement.

Some projects' base recommendations will require further study to determine the appropriate bikeway facility. For those projects, multiple bikeway recommendations options are listed with the preferred facility listed first.





**Figure 32. Active Transportation Network Recommendations - Route projects**

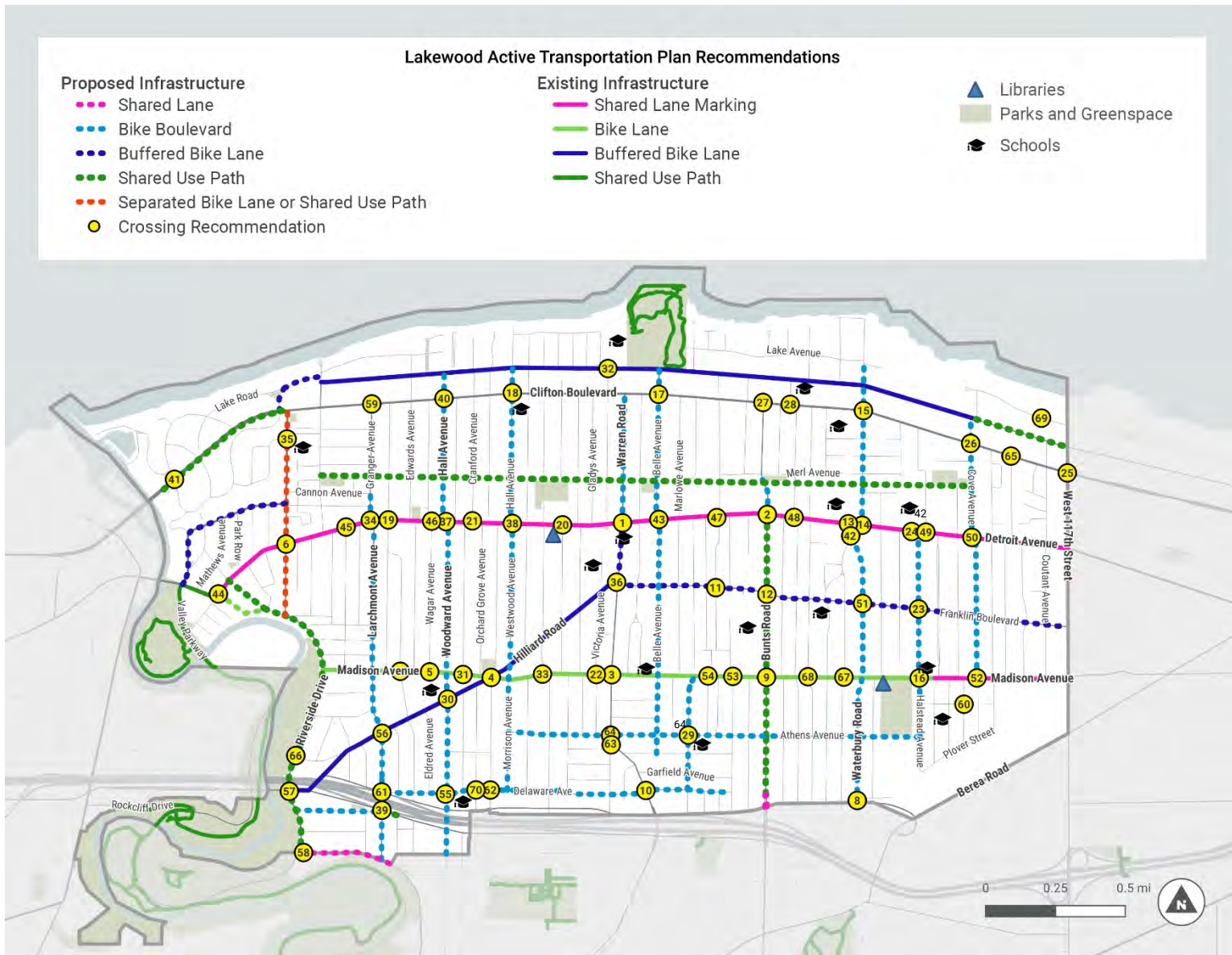
*Geographic and mapping information presented in this document is for informational purposes only, and is not suitable for legal, engineering, or surveying purposes. Mapping products presented herein are based on information collected at the time of preparation. Toole Design Group, LLC makes no warranties, expressed or implied, concerning the accuracy, completeness, or suitability of the underlying source data used in this analysis, or recommendations and conclusions derived therefrom.*

**Table 6. Route project ATP recommendations**

Project ID	Roadway	Recommendation	Project Extents
1	Belle Ave	Bike boulevard	Detroit Ave to Bayes Ave
2	Belle Ave	Bike boulevard	Lake Ave to Detroit Ave
3	Bunts Rd	Bike boulevard	Detroit Ave to Merl Avenue
4	Bunts Rd	Shared lane	To Lakewood Heights Boulevard
5	Bunts Rd	Shared use path	Detroit Ave to Madison Ave
6	Bunts Rd	Shared use path	Madison Ave to Lakewood Heights Blvd
7	Clifton Blvd	Shared use path	West Clifton Blvd to jurisdictional boundary
8	Graber Dr	Counterflow bike lane	Riverside Drive to Detroit Ave
9	Cohassett Ave / Halstead Ave	Bike boulevard	Detroit Ave to Athens Ave
10	Cove Ave	Bike boulevard	Lake Rd to Detroit Ave
11	Athens Ave	Bike boulevard	Morrison Ave to Halstead Ave
12	Delaware Ave	Bike boulevard	Glenbury Ave to Brown Rd
13	Franklin Ave	Buffered bike lane	Hilliard Rd to West 117th St
14	Granger Ave	Bike boulevard	Detroit Ave to proposed railroad path (route project 24)
15	Hall Ave	Bike boulevard	Lake Rd to Detroit Ave
16	Lake Rd	Shared use path	Cove Ave to West 117th St
17	Lake Rd	Buffered bike lane or bike boulevard	Clifton Blvd to Webb Rd
18	Lakewood Heights Blvd	Bike boulevard	Riverside Drive to McKinley Ave
19	Larchmont Ave	Bike boulevard	Detroit Ave to Madison Ave
20	Lincoln Ave	Bike boulevard	Madison Ave to Delaware Ave
21	McKinley Ave	Bike boulevard	Madison Ave to Rocky River Dr
22	Morrison Ave	Bike boulevard	Madison Ave to Delaware Ave
23	Nicholson Ave	Bike boulevard	Edgewater Rd to Detroit Ave
24	Railroad Path	Shared use path	Cove Ave to Webb Rd
25	Ridgewood Ave	Bike boulevard	Detroit Ave to Madison Ave
26	Riverside Dr	Shared use path or buffered bike lane	Hilliard Blvd to Rocky River Dr
27	Riverside Dr	Shared use path or buffered bike lane	Hilliard Blvd to Detroit Ave
28	Rocky River Dr	Shared lane	Riverside Drive to Ogontz Ave
29	Sloane Ave	Buffered bike lane or bike lane	West Clifton Blvd to Detroit Ave
30	South Marginal Dr	Shared use path	McKinley Ave to Ogontz Ave
31	Summit Ave	Bike boulevard	Lake Road to Detroit Ave
32	Warren Rd	Buffered bike lane or bike lane	Detroit Ave to Franklin Blvd
33	Warren Rd	Bike boulevard	Clifton Blvd to Detroit Ave
34	Waterbury Rd	Bike boulevard	Detroit Ave to Lakewood Heights Blvd
35	West Clifton Blvd	Separated bike lane or shared use path	Clifton Blvd to Riverside Dr

Project ID	Roadway	Recommendation	Project Extents
36	Westwood Ave	Bike boulevard	Detroit Ave to Madison Ave
37	Woodward Ave	Bike boulevard	Detroit Ave to Fischer Ave





**Figure 33 Active Transportation Network Recommendations - Intersections and Crossings**

*Geographic and mapping information presented in this document is for informational purposes only, and is not suitable for legal, engineering, or surveying purposes. Mapping products presented herein are based on information collected at the time of preparation. Toole Design Group, LLC makes no warranties, expressed or implied, concerning the accuracy, completeness, or suitability of the underlying source data used in this analysis, or recommendations and conclusions derived therefrom.*

**Table 7. Intersection and crossing project ATP recommendations**

Project ID	Recommendation	Street 1	Street 2
1	Install high-visibility crosswalk markings across Detroit Avenue. Consider installation of Leading Pedestrian Interval (LPI) and bicycle detection to support recommended bicycle boulevard project on Warren Road and access to Albert Einstein Academy. Consider installation of curb extensions or pedestrian refuge island.	Detroit Ave	Warren Rd
2	Install high-visibility crosswalk markings across Detroit Avenue. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Bunts Road and access to nearby schools. Consider installation of curb extensions or pedestrian refuge island.	Detroit Ave	Bunts Rd
3	Install high-visibility crosswalk markings across Madison Avenue. Consider installation of LPI and curb extensions to improve access to bus stop and nearby private school.	Madison Ave	Warren Rd
4	Install high-visibility crosswalks at all approaches. Consider installation of curb extensions and/or pedestrian refuge islands. Consider installation of LPI and bicycle detection to support existing buffered bike lane on Hilliard Road.	Madison Ave	Hilliard Rd
5	Install high-visibility crosswalk markings across Madison Avenue to improve access to bus stop and Harding Middle School. Consider installation of curb extension, pedestrian refuge island, or raised crosswalk.	Madison Ave	Wagar Ave
6	Install high-visibility crosswalk markings across Detroit Avenue. Consider installation of LPI and bicycle detection to support recommended bicycle facility on West Clifton Blvd and access to Horace Mann. Consider installation of curb extensions.	Detroit Ave	West Clifton Blvd
7	Install high-visibility crosswalk markings and ADA curb ramps to cross Madison Avenue and improve access to Harding Middle School. Consider installation of Rectangular Rapid-Flashing Beacon (RRFB) or Pedestrian Hybrid Beacon (PHB) or raised crossing.	Madison Ave	Atkins Ave
8	Install high-visibility crosswalk markings across Waterbury Rd and across Bramley Avenue. Reconstruct intersection with Bramley Avenue to reduce curb radii, incorporating mountable truck aprons to accommodate high levels of truck traffic.	Lakewood Heights Blvd	Waterbury Rd
9	Install high-visibility crosswalk markings across Madison Avenue. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Bunts Road and access to Lakewood High School. Consider installation of curb extensions.	Madison Ave	Bunts Rd
10	Install high-visibility crosswalk markings at all approaches to improve access to nearby transit stops.	Warren Rd	Delaware Ave
11	Install high-visibility crosswalk markings across Franklin Boulevard to improve access to bus stop and Lakewood High School. Consider installation of curb extension, pedestrian refuge island, or raised crosswalk.	Franklin Blvd	Blossom Park Ave
12	Install high-visibility crosswalk markings across Franklin Boulevard. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Bunts Road and access to Lakewood High School. Consider installation of curb extensions or pedestrian refuge island.	Franklin Blvd	Bunts Rd

13	Install high-visibility crosswalk markings across Detroit Avenue. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Nicholson Avenue and access to Lakewood High School. Consider installation of curb extensions, pedestrian refuge island, or raised crosswalk.	Detroit Ave	Nicholson Ave
14	Install high-visibility crosswalk markings and ADA curb ramps to cross Detroit Avenue and improving access to nearby schools. Consider installation of raised crosswalk.	Detroit Ave	Waterbury Rd
15	Install high-visibility crosswalk markings across Clifton Boulevard and consider raised crosswalks (east-west). Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Nicholson Avenue and access to Emerson Elementary School.	Clifton Blvd	Nicholson Ave
16	Install high-visibility crosswalk markings across Madison Avenue. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Cohasset Avenue and access to nearby schools.	Madison Ave	Cohasset Ave
17	Install high-visibility crosswalk markings across Clifton Boulevard. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Belle Avenue. Evaluate if increased crossing time is needed.	Clifton Blvd	Belle Ave
18	Install high-visibility crosswalk markings across Clifton Boulevard and consider raised crosswalks (east-west). Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Summit Avenue and access to Lincoln Elementary School.	Clifton Blvd	Summit Ave
19	Install high-visibility crosswalk markings across Detroit Avenue.	Detroit Ave	Cordova Ave
20	Install high-visibility crosswalk markings across Detroit Avenue. Consider installation of curb extensions and parking restrictions on crosswalk approach.	Detroit Ave	Mars Ave
21	Install high-visibility crosswalk markings and ADA curb ramps to Detroit Avenue and improve access to bus stop. Consider parking restrictions on crosswalk approach.	Detroit Ave	Cranford Ave
22	Install high-visibility crosswalk markings across Madison Avenue. Consider parking restrictions at crosswalk approach or curb extensions.	Madison Ave	Victoria Ave
23	Install high-visibility crosswalk markings across Franklin Boulevard. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Cohasset Avenue and access to nearby schools. Consider installation of curb extensions or pedestrian refuge island.	Franklin Blvd	Cohasset Ave
24	Install high-visibility crosswalk markings across Detroit Avenue. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Cohasset Avenue and access to Garfield Middle School. Consider installation of curb extensions and raised crosswalk	Detroit Ave	Cohasset Ave
25	Install high-visibility crosswalk markings at all approaches. Consider curb extensions and/or pedestrian refuge island.	Clifton Blvd	West 117th St

26	Install high-visibility crosswalk markings across Clifton Boulevard. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Cove Avenue. Evaluate if increased crossing time is needed.	Clifton Blvd	Cove Ave
27	Install high-visibility crosswalk markings across Clifton Boulevard. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Bunts Road and access to bus stop.	Clifton Blvd	Bunts Rd
28	Install pedestrian-activated crossing - consider PHB - high-visibility crosswalk markings, and ADA curb ramps to support access to Taft Center for Innovation.	Clifton Blvd	Whippoorwill Ave
29	Install high-visibility crosswalk markings across Athens Avenue and consider raised crosswalks (east-west) or raised intersection. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Athens Avenue and access to Roosevelt Elementary School.	Athens Ave	Lincoln Ave
30	Install high-visibility crosswalk markings across Madison Avenue to improve access to Harding Middle School. Consider installation of curb extensions and raised crosswalk	Hilliard Rd	Woodward Ave
31	Install high-visibility crosswalk marking and ADA curb ramps to cross Madison Avenue and improve access to Harding Middle School. Consider installation of curb extensions.	Madison Ave	Northland Ave
32	Install high-visibility crosswalk markings across Lake Avenue to improve access to Lakewood Catholic Academy. Consider installation of LPI and raised crosswalk	Lake Ave	Cook Ave
33	Install high-visibility crosswalk marking and ADA curb ramps to cross Madison Avenue. Consider installation of curb extensions.	Madison Ave	Arthur Ave
34	Install high-visibility crosswalk markings across Detroit Avenue. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Granger Avenue. Consider installation of curb extensions.	Detroit Ave	Granger Ave
35	Install high-visibility crosswalk markings across West Clifton Boulevard and consider raised crosswalk to improve access to Horace Mann Elementary School and nearby transit stops.	West Clifton Blvd	Arlington Rd
36	Install high-visibility crosswalk markings and consider raised crosswalk and additional safety improvements for vehicles such as hardened centerlines.	Franklin Blvd	Warren Rd
37	Install high-visibility crosswalk markings across Detroit Avenue. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Woodward Avenue. Consider installation of curb extensions.	Detroit Ave	Woodward Ave
38	Install high-visibility crosswalk markings across Detroit Avenue. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Westwood Avenue. Consider installation of curb extensions or pedestrian refuge island.	Detroit Ave	Westwood Ave
39	Install high-visibility crosswalk marking and LPI across South Marginal Drive. Consider installation of curb extensions.	South Marginal Dr	McKinley Ave

40	Install pedestrian-activated crossing - consider - high-visibility crosswalk markings, and ADA curb ramps to support recommended bicycle boulevard project on Hall Avenue.	Clifton Blvd	Hall Ave
41	Install roundabout in accordance with recommendations from Lake Road-Clifton Boulevard Corridor Improvement Study.	Clifton Blvd	Lake Rd
42	Consider installation of a mini roundabout to address multimodal conflicts.	Lewis Dr	Waterbury Rd
43	Install high-visibility crosswalk markings across Detroit Avenue. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Belle Avenue Consider installation of curb extensions or pedestrian refuge island.	Detroit Ave	Belle Ave
44	Consider installation of bicycle detection to improve access to nearby regional trail.	Detroit Ave	Graber Dr
45	Install high-visibility crosswalk markings and ADA curb ramps to cross Detroit Avenue. Evaluate signal timing.	Detroit Ave	Spring Garden Ave
46	Install high-visibility crosswalk markings and ADA curb ramps to cross Detroit Avenue and improve access to bus stop.	Detroit Ave	Wagar Ave
47	Consider installation of curb ramps to improve pedestrian visibility. Incorporate signage for bicycle use of HAWK beacon.	Detroit Ave	Blossom Park Ave
48	Install high-visibility crosswalk markings and ADA curb ramps to cross Detroit Avenue. Consider installation of in-street pedestrian crossing sign.	Detroit Ave	Giel Ave
49	Install high-visibility crosswalk markings and ADA curb ramps to cross Detroit Avenue. Consider installation of curb extensions and raised crosswalk	Detroit Ave	Thoreau Rd
50	Install high-visibility crosswalk markings across Detroit Avenue. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Cove Avenue. Consider installation of curb extensions and/or pedestrian refuge island.	Detroit Ave	Cove Ave
51	Install high-visibility crosswalk markings across Franklin Boulevard to support recommended bicycle boulevard project on Waterbury Road. Consider installation of curb extensions or pedestrian refuge island.	Franklin Blvd	Waterbury Rd
52	Install high-visibility crosswalk markings across Madison Avenue. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Ridgewood Avenue.	Madison Ave	Ridgewood Ave
53	Install high-visibility crosswalk marking and ADA curb ramps to cross Madison Avenue and improve access to Lakewood High School. Consider installation of curb extensions and parking restrictions at crosswalk approach and/or raised crossing.	Madison Ave	Brown Rd

54	Install high-visibility crosswalk marking and ADA curb ramps to cross Madison Avenue. Consider installation of curb extensions.	Madison Ave	Baxterly Ave
55	Install high-visibility crosswalk markings across Delaware Avenue. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Delaware Avenue and access to Hayes Elementary School. Consider installation of curb extension, pedestrian refuge island, and raised crosswalk	Delaware Ave	Woodward Ave
56	Install high-visibility crosswalk markings at all approaches. Consider installation of curb extensions.	Hilliard Rd	McKinley Ave
57	Install high-visibility crosswalk markings and crossing improvements identified in Community Confluence Plan.	Hilliard Blvd	Riverside Dr
58	Install high-visibility crosswalk markings and crossing improvements identified in Community Confluence Plan.	Rocky River Dr	Riverside Dr
59	Install a midblock crossing across Clifton Avenue with high-visibility crosswalk markings and RRFB or PHB to improve access to nearby transit stops. Consider curb extensions.	Clifton Blvd	Granger Ave
60	Install high-visibility crosswalk markings and ADA curb ramps to cross Thrush Street and improve access to Harrison Elementary School. Consider installation of curb extensions and raised crosswalk.	Thrush St	Robin St
61	Install high-visibility crosswalk marking and LPI across North Marginal Drive. Consider installation of curb extensions.	North Marginal Dr	McKinley Ave
62	Install high-visibility crosswalk markings across Delaware Avenue to improve access to Hayes Elementary School. Consider installation of curb extension, pedestrian refuge island, and raised crosswalk.	Delaware Ave	Carabel Ave
63	Install high-visibility crosswalk markings across Athens Avenue. Consider LPI and bicycle detection to support recommended bicycle boulevard project on Athens Avenue.	Athens Ave	Warren Rd
64	Install high-visibility crosswalk markings at all approaches. Consider curb extensions.	Arden Ave	Alger Rd
65	Install a midblock crossing across Clifton Avenue with high-visibility crosswalk markings and RRFB or PHB to improve access to nearby transit stops. Consider curb extensions.	Clifton Blvd	Fry Ave
66	Install high-visibility crosswalk markings across Riverside Drive. Consider installation of RRFB in coordination with recommended shared use path or buffered bike lane on Riverside Drive (route recommendation 27) to improve access to transit stop.	Riverside Dr	Indianola Ave
67	Install high-visibility crosswalk markings at all approaches. Install ADA curb ramps for crossing across Madison Avenue to improve access to transit stops.	Madison Ave	Chesterland Ave

<b>68</b>	Install high-visibility crosswalk markings at all approaches. Install ADA curb ramps for crossing across Madison Avenue to improve access to transit stops.	Madison Ave	Elbur Ave
<b>69</b>	Install midblock crossing with high-visibility crosswalk markings and ADA ramps across Edgewater Drive to improve access to transit stops.	Edgewater Dr	Berkshire Condominium driveways
<b>70</b>	Install high-visibility crosswalk markings at all approaches. Consider installation of curb extensions, raised crossing, or raised intersection to support access to Hayes Elementary School.	Delaware Ave	Olive Ave



## SELECT LONGER-TERM VISION-BASED RECOMMENDATIONS

The future projects listed below are documentation of longer-term, visionary projects that the City of Lakewood will consider in the next ATP update or if the appropriate opportunity arises. These longer-term projects include new infrastructure as well as improvements to existing infrastructure to improve level of comfort for cyclists.

Longer-term projects are considered separately to the ATP recommendations on page 54 due to existing concerns about feasibility. The projects listed below may require additional funding, political support, right-of-way acquisition, and/or the construction of other ATP recommendations before they are ready for further study and implementation.

Roadway	Longer-term recommendation	Project extents
Lake Avenue	Separated bike lane or shared use path	Webb Rd to Cove Ave
Clifton Boulevard*	Shared use path or separated bike lane	West Clifton Blvd to W 117th St
Detroit Avenue	Buffered bike lane	Graber Ave to W 117th St
Madison Avenue	Parking protected bike lane	Riverside Dr to Dowd Ave

\*Note any changes to Clifton Boulevard will be planned and made in coordination with GCRTA and FTA.

## ACTIVE TRANSPORTATION NETWORK RATIONALE

A primary goal of this plan is to increase the safety and convenience of walking and biking and to that end, recommendations include a variety of route options and facility types to accommodate the majority of community members. The ATP recommendations add over 17 miles of on-street bikeways and 7 miles of shared use paths to the transportation system, and 70 intersection or crossing improvements. The following section goes into more detail on how and why facilities in the network were selected.

### Pedestrian Facilities

Pedestrian infrastructure is primarily provided in the form of crossing improvements and shared use path recommendations. The incorporation of low stress bicycle facilities will also help address conflicts between bicyclists and pedestrians on the currently robust network of sidewalks across the city.

These improvements can improve people’s bicycling and walking experience, encourage more walking, and decrease the number of crashes that occur. Crossing improvements proposed in this plan include high-visibility crosswalk markings, ADA curb ramps, and considerations for pedestrian refuge islands, curb extensions, and Leading Pedestrian Intervals. In addition, while not specifically detailed in this plan, the use of high visibility markings and/or signage should also be considered where appropriate along the Detroit and Madison commercial corridor sidewalks where alleys, drive entries/exits, and other potential vehicle-pedestrian conflict zones exist or could exist as a result of development.



## Facility Selection Methodology

Pedestrian crossings should be safe, intuitive, and accessible to people with mobility and/or vision disabilities. Both pedestrian and vehicular conditions factor into the design of pedestrian crossings. For example, in areas of high active transportation demand or high need where there is potential for more pedestrian activity, crosswalks and pedestrian queuing areas need enough space to accommodate users. Or in areas with higher traffic volumes and wider roadways, additional countermeasures are needed to assist pedestrians using longer crossings.

Countermeasures such as high-visibility crosswalks or pedestrian refuge islands can help address safety issues like drivers not yielding to crossing pedestrians or inadequate visibility. Figure 34 from the [Federal Highway Administration \(FHWA\) Guide for Improving Pedestrian Safety at Uncontrolled Crossings](#) depicts other safety issues that can be addressed with pedestrian crash countermeasures. This report along with resources like the [ODOT Multimodal Design Guide \(MDG\)](#), and the [National Cooperative at Unsignalized Crossings Appendix A](#) practices for multimodal transportation design standards. See these full resources for further detail on intersection countermeasure selection.

Pedestrian Crash Countermeasure for Uncontrolled Crossings	Safety Issue Addressed				
	Conflicts at crossing locations	Excessive vehicle speed	Inadequate conspicuity/visibility	Drivers not yielding to pedestrians in crosswalks	Insufficient separation from traffic
Crosswalk visibility enhancement	🚶	🚶	🚶	🚶	🚶
High-visibility crosswalk markings*	🚶		🚶	🚶	
Parking restriction on crosswalk approach*	🚶		🚶	🚶	
Improved nighttime lighting*	🚶		🚶		
Advance Yield Here To (Stop Here For) Pedestrians sign and yield (stop) line*	🚶		🚶	🚶	🚶
In-Street Pedestrian Crossing sign*	🚶	🚶	🚶	🚶	
Curb extension*	🚶	🚶	🚶		🚶
Raised crosswalk	🚶	🚶	🚶	🚶	
Pedestrian refuge island	🚶	🚶	🚶		🚶
Pedestrian Hybrid Beacon	🚶	🚶	🚶	🚶	
Road Diet	🚶	🚶	🚶		🚶
Rectangular Rapid-Flashing Beacon	🚶		🚶	🚶	🚶

\*These countermeasures make up the STEP countermeasure "crosswalk visibility enhancements." Multiple countermeasures may be implemented at a location as part of crosswalk visibility enhancements.

**Figure 34. Safety issues addressed per countermeasure (FHWA Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations Table 2)**

## Bicycle Facilities

Local infrastructure and routes will help riders of varying abilities access their daily destinations such as schools, grocery stores, parks, and work. There are several important factors to consider during bicycle facility selection, such as design users and roadway conditions. This section describes the different types of bicyclists, highly confident, somewhat confident, and interested but concerned, who make up the majority of the population. It also provides an introduction to the FHWA bicycle facility selection matrix that identifies what type of facility is appropriate for majority of bicyclists based on speed, volume, and context.

## Design Users

Understanding which types of bicyclists feel comfortable using a given facility is key to building a safe, convenient, and well-used network.

### Design User Profiles

#### Highly Confident Bicyclist (~4-7%)

- » Smallest group.
- » Prefer direct routes and will operate in mixed traffic, even on roadways with higher motor vehicle operating speeds and volumes.
- » Many also enjoy separated bikeways.
- » May avoid bikeways perceived to be less safe, too crowded with slower moving users, or requiring deviation from their preferred route.

#### Somewhat Confident Bicyclist (~5-9%)

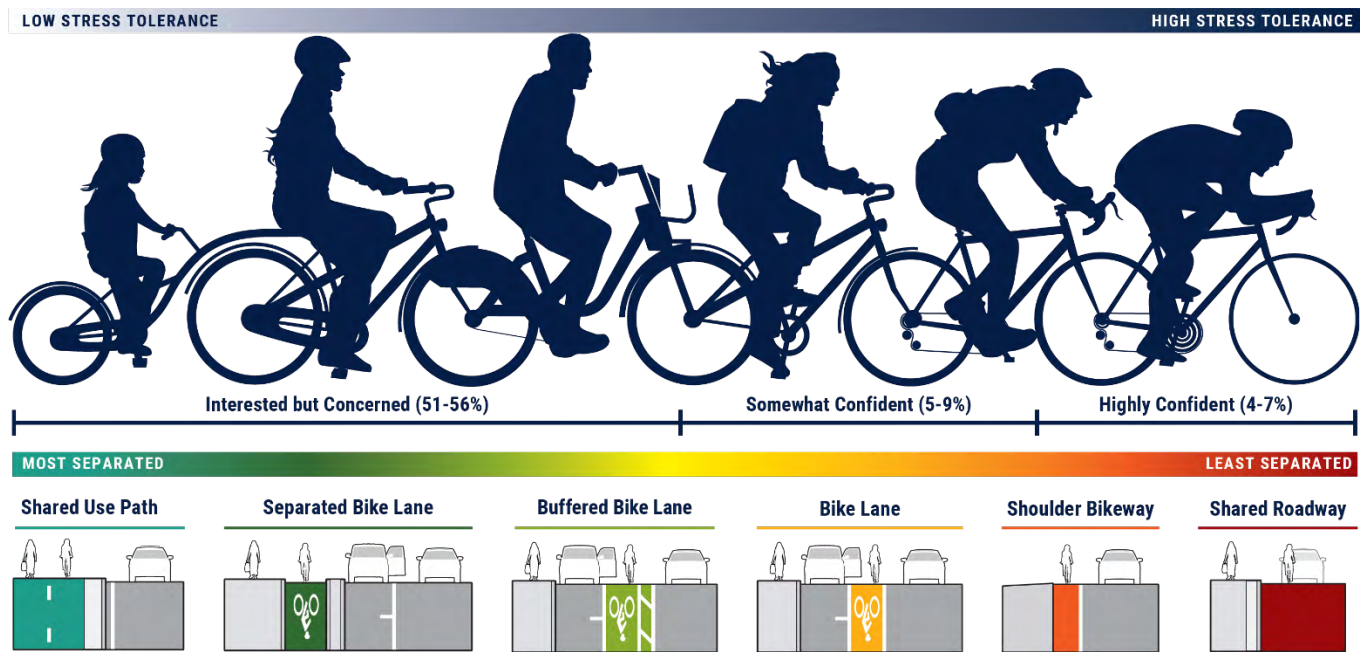
- » Comfortable on most types of facilities.
- » Lower tolerance for traffic stress, prefer striped or separated bike lanes on major streets and low-volume residential streets.
- » Willing to tolerate higher levels of traffic stress for short distances.

#### Interested but Concerned Bicyclist (~51-56%)

- » Largest group.
- » Lowest tolerance for traffic stress.
- » Avoid bicycling except with access to networks of separated bikeways or very low-volume streets with safe roadway crossings.
- » Tend to bicycle for recreation but not transportation.
- » Generally, the recommended design user profile to maximize potential for bicycling.

Bicyclists are most commonly classified according to their comfort level, bicycling skill and experience, age, and trip purpose. These characteristics can be used to develop generalized profiles of various bicycle users and trips, also known as “design users,” which inform bicycle facility design. Comfort, skill, and age may affect bicyclist behavior and preference for different types of bicycle facilities. Selecting a design user profile is often the first step in assessing a street’s compatibility for bicycling. The design user profile should be used to select a preferred type of bikeway treatment for different contexts (Figure 35 and Figure 36). People who bicycle are influenced by their relative comfort operating with or near motor vehicle traffic. To accommodate the majority of the population, the “Interested but Concerned” rider should be the primary user type that facilities are designed for. In some contexts, such as rural roadways where less people may be expected to be traveling by bike, the Somewhat Confident or Highly Confident rider is the most relevant design user.

**Figure 35: Types of Bicyclists (Source: Toole Design)**

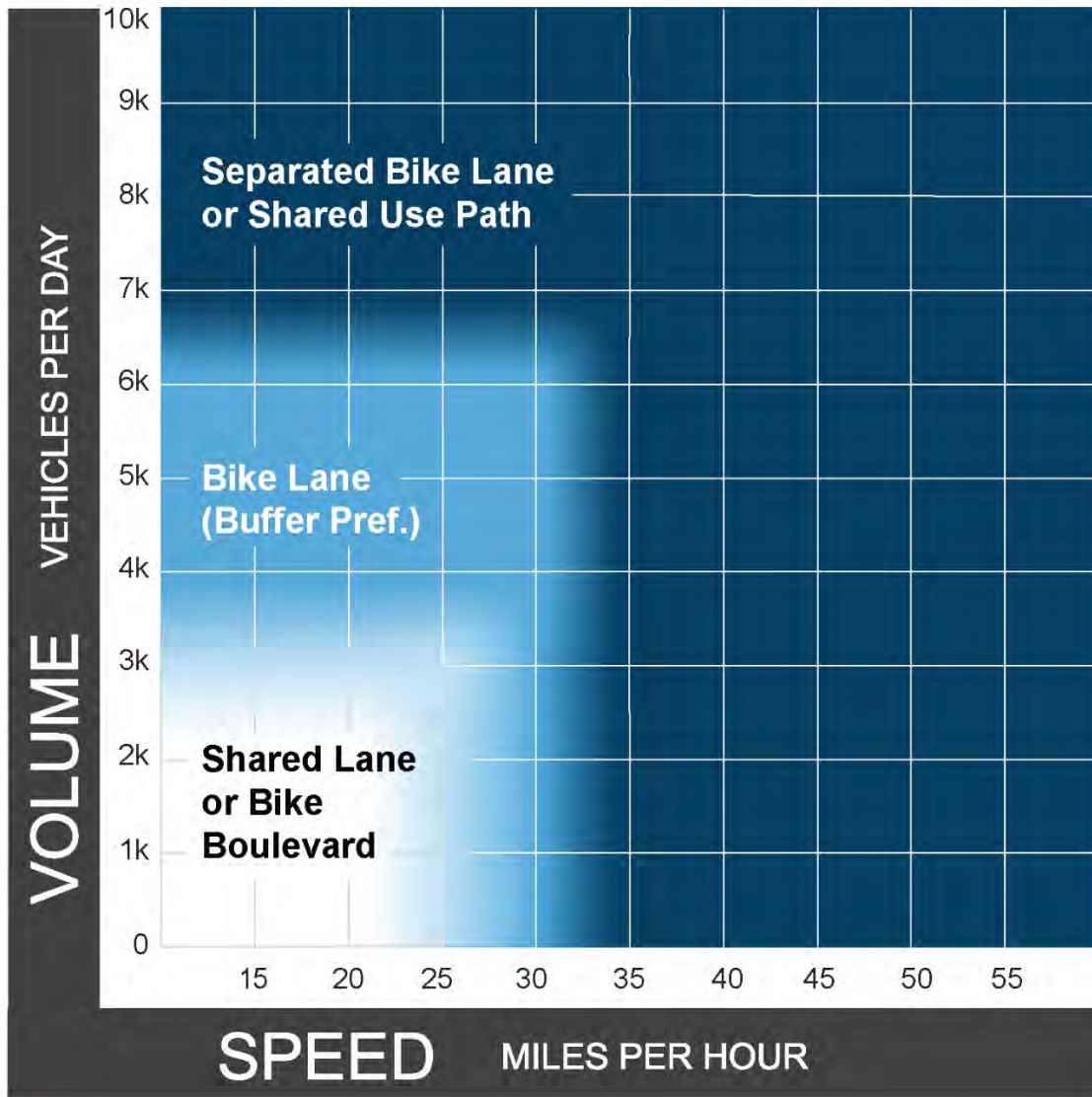


### Facility Selection Methodology

Bicycle networks should be continuous, connect seamlessly across jurisdictional boundaries, and provide access to destinations. Anywhere a person would want to drive to for utilitarian purposes, such as commuting or running errands, is a potential destination for bicycling. As such, planning connected low-stress bicycle networks is not achieved by simply avoiding motor vehicle traffic. Rather, planners should identify solutions for lowering stress along higher traffic corridors so that bicycling can be a viable transportation option for the majority of the population.

Before projects can be implemented the type of on-street bicycle facility will need to be defined. The [Federal Highway Administration \(FHWA\)'s Bikeway Selection Guide](#)'s facility selection matrices (Figure 36) can be used to help determine the best facility for the roadway based on context, speed, and volume as well as the relevant design user type. See the full guide for further detail on facility selection.

**Figure 36: FHWA Bikeway Facility Matrix: Preferred Bikeway Type for Urban, Urban Core, Suburban and Rural Town Contexts (Design User: Interested but Concerned)**



**Notes**

- 1 Chart assumes operating speeds are similar to posted speeds. If they differ, use operating speed rather than posted speed.
- 2 Advisory bike lanes may be an option where traffic volume is <3K ADT.
- 3 See page 32 for a discussion of alternatives if the preferred bikeway type is not feasible.

## Facility Toolkit

There are numerous facility types which accommodate people of varying abilities and in different environments. Research shows that the provision of low stress, connected bicycle networks improves bicyclist safety and encourages bicycling for a broader range of user types.<sup>28</sup> Pedestrian infrastructure is primarily provided in the form of sidewalks, shared-use paths, and crossing treatments.

### *Sidewalks*

Sidewalks are intended to be used by people walking. They are adjacent to but separated from the roadway by a curb and/or buffer, such as a tree lawn. As roadway speeds and volumes increase, more separation is needed to maintain a safe and comfortable walking environment for pedestrians. Common in urban areas, they may also be necessary in rural areas with pedestrian generators, such as schools and businesses. For further guidance on pedestrian design, refer to [ODOT's Multimodal Design Guide, Chapter 4 -Pedestrian Facilities.](#)

### *Crossing Improvements*

A variety of solutions can be employed to make intersections and mid-block crossings safer and more convenient for people walking. These treatments range from painted facilities, such as high-visibility crosswalks, to signs, lights, and signals. Painted crosswalks delineate the safest pathway for pedestrians, and rectangular rapid flashing beacons (RRFBs) enhance user safety and convenience at crossing points when full signalization is not warranted. For further guidance on pedestrian design, refer to [ODOT's Multimodal Design Guide \(MDG\) Chapter 4 -Pedestrian Facilities, MDG Chapter 8 – Signals, Beacons, and Signs, and FHWA's Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations.](#)

### *Bicycle Facilities*

As part of the existing conditions assessment, the project team conducted a Level of Traffic Stress (LTS) analysis (Figure 27), which uses broadly available road characteristics to classify the experience of riding a bicycle on different streets. The LTS analysis grouped roads into one of four categories:

- » LTS 1 – A low stress facility suitable for all ages and abilities.
- » LTS 2 – A facility suitable for people who are “interested but concerned” about riding a bicycle, which includes most adults and families.



**Figure 37. Sidewalk (Toole Design)**



**Figure 38. Crossing Improvement (Toole Design)**



**Figure 39. Floating bus stop along parking protected bike lane (Toole Design)**



<sup>28</sup> AASHTO (2021). Guide to Bicycle Facilities, 4<sup>th</sup> Edition, 2.2. Why Planning for Bicycling is Important.

- » LTS 3 – A facility suitable for people who are “enthused and confident” about riding a bicycle.
- » LTS 4 – A high stress facility is uncomfortable for most adults.

Table 8 defines the appropriate bicycle facility or facilities based on the roadway’s LTS score. For further guidance on bicycle infrastructure design, refer the following ODOT Multimodal Design Guide chapters:

- » [Chapter 5 – Shared Use Paths](#)
- » [Chapter 6 – On-Road Bicycle Facilities](#)
- » [Chapter 7 – Motor Vehicle Facilities Supporting Multimodal Accommodation](#)
- » [Chapter 9 – Multimodal Accommodations at Interchanges & Alternative Intersections](#)

**Table 8. Bicycle Facility Toolkit**

Level of Traffic Stress (LTS)	Type of Facility	Description
LTS 1	<p><b>Bicycle Boulevard</b></p> 	Where traffic volumes and speeds are low, many bicyclists can comfortably share lanes with motor vehicles. Shared lane markings and signs are added to inform people driving that bicyclists may operate in the lane and where to expect bicyclists. Wayfinding signage, traffic calming, and intersection treatments need to be incorporated into bicycle boulevards to increase user comfort and prioritize bicycle travel.
LTS 2	<p><b>Bike Lane / Buffered Bike Lane</b></p> 	Bike lanes and buffered bike lanes are one-way facilities within the roadway demarcated with painted lane lines. Standard bike lanes provide some improvements to bicyclist safety, and can be enhanced with painted buffers, bike lane extensions through intersections, green colored pavement, and regulatory signs.
LTS 3 and LTS 4	<p><b>Separated Bike Lane</b></p> 	A separated bike lane is a one- or two-way facility within the roadway and physically separated from adjacent travel lanes with vertical elements such as a curb, flex posts or on-street parking. Such facilities reduce the risk of injury and can increase bicycle ridership due to increased safety and comfort. Separated bike lanes and/or parking protected bike lanes can accommodate bicyclists on multimodal corridors through improvements such as floating bus stops (see Figure 39).
LTS 4	<p><b>Shared Use Paths</b></p> 	Typically designed as two-way facilities physically separated from motor vehicle traffic and used by bicyclists, pedestrians, and other non-motorized users, shared use paths provide a low-stress and comfortable travel environment for users of all confidence levels. They are used for recreational opportunities in addition to transportation and can be located along roadways or completely separated from the road network, sometimes along rivers or old railroad corridors.

# PROGRAMS AND POLICIES

Establishing safe and convenient active transportation infrastructure is critical to improving walking and bicycling conditions. But without programs and policies in place to support active transportation, infrastructure projects can only go so far. A variety of non-infrastructure tools can increase pedestrians' and bicyclists' safety by establishing a culture of walking and biking and creating a friendly regulatory and political environment for active transportation.

Programs and policies can typically be implemented relatively quickly and inexpensively. Programs can be easily scaled to a wide audience, such as elementary school students, transit riders, or business owners or they can target specific groups for programming, like speeding motorists in school zones. Individual programs can increase walking and bicycling in specific circumstances and locations but should be coordinated with policy development to ensure lasting change. of the following pages describe proposed programs and policies for the City of Lakewood. These proposed programs and policies aim to accomplish the following goals:

- » **Foster culture change:** shift community members mindset so that walking and bicycling is normal and expected.
- » **Maintain momentum:** help maintain momentum and excitement around active transportation while infrastructure projects are in development.
- » **Build support:** encourage new people to try active transportation and help community partners recognize the value of increased active transportation options.
- » **Support efficient operations and maintenance:** help institutionalize best practices in active transportation operations and maintenance.

The timeframes outlined in the recommendations are defined as follows:

- » **Short-term:** One year
- » **Medium-term:** Two to three years
- » **Long-term:** Three years or more

The status of programs and policies should be assessed and updated each time the overall plan is updated. Status is defined as:

- » **New:** A program or policy that is proposed in this Plan.
- » **Ongoing:** An existing program or policy that will be continued.
- » **On-hold:** A program or policy that has been stalled or deferred.
- » **Completed:** When regularly updating the plan, update the program or policy status to complete when applicable to help track progress.

## SAFE ROUTES TO SCHOOL RECOMMENDATIONS

### **1: Establish an annual Walking School Bus & Bike to School Day**

*Lead Implementor: Lakewood City Schools*

*Time frame: Short-term*

*Status: Ongoing*

Establish an annual Walk/Bike to School Day program with support from Bike Lakewood and the City of Lakewood. Walking school buses and special events like Bike to School Day are a way for families to break their routines and try something new. They also highlight school travel issues to local leaders and build political support for SRTS funding.

### **2: Update student travel and arrival/dismissal policies**

*Lead Implementor: Lakewood City Schools*

*Time frame: Medium-term*

*Status: New*

Develop policies to ensure the safety of students who travel to school via active transportation. These policies may establish guidance for early student entry, inclement weather policies, idling policies, and/or crossing guard placement. Work with crossing guards, teachers, parents, students, and other school community members to develop and implement the policy.

### **3: Establish a Safe Routes to School Program**

*Lead Implementors: Lakewood City Schools and City of Lakewood*

*Time frame: Short-term*

*Status: New*

Establish a funding source for Safe Routes to School programming, education, planning, and infrastructure projects. Lead implementors of this strategy should coordinate to apply for grant funding to keep Lakewood's School Travel Plan requirements up to date. Program funds can be used to implement other strategies listed in the ATP that are relevant to SRTS efforts.

### **4: Provide free helmets and educational materials to elementary students**

*Lead Implementor: City of Lakewood and Lakewood City Schools*

*Time frame: Medium-term*

*Status: Ongoing*

The Lakewood Safety Town summer program is open to children entering kindergarten in the fall and educates children on how to navigate streets and towns via a real town setup consisting of stop signs, crosswalks, stop signs and traffic signals. In partnership with this program, Lakewood can provide helmets to all public school elementary students and provide educational materials and lesson plans on safe cycling practices for students pre-k through middle school.



**Figure 40. Students participating in Bike to School Day (Toole Design)**

## ATP RECOMMENDATIONS

### **1: Review and update city maintenance practices for walking and biking facilities**

*Lead Implementor: City of Lakewood*

*Time frame: Short-term*

*Status: New*

Compile, review, and update existing relevant maintenance practices for walking and biking facilities, such as routine maintenance and snow removal. Ensure alignment with the City of Lakewood’s Snow Removal Plan.

### **2: Establish a Complete Streets policy**

*Lead Implementor: City of Lakewood*

*Time frame: Medium-term*

*Status: New*

Develop a Complete Streets policy that includes the 10 Elements of a Complete Streets policy as identified by Smart Growth America and establishes a process for selecting and reviewing projects. The policy will ensure that considerations for all types of roadway users – including pedestrians, bicyclists, and motorists – have access to safe, comfortable, and convenient mobility.

### **3: Implement strategies to improve equitable processes and transportation outcomes**

*Lead Implementor: City of Lakewood*

*Time frame: Long-term*

*Status: New*

In coordination with the City of Lakewood Community Relations Committee, implement the following strategies to improve equitable processes and outcomes related to transportation:

- » Ensure equitable distribution of transportation spending and funds – Conduct a thorough review of transportation spending, complaint response (and non-response) and outreach to better understand who transportation projects are currently serving, especially if there are projects that improve transportation infrastructure in the County’s Equity Zones. The equitable distribution of funds will allow Lakewood to proactively address disparities. The projects should seek to be reviewed by the Community Relations Committee and if applicable, Anti-Racism Task Force.
- » Improve project outreach and public participation – Require that every major active transportation project implements an outreach plan that includes receiving feedback from the public, especially those from underserved populations (older adults, children, low-income residents, People of Color). When looking to better understand and address the active transportation needs of historically marginalized communities, formalize community engagement practices that partner with Black, Indigenous, and People of Color (BIPOC) community organizations. Consider engaging with civil liberty, racial equity, and economic justice organizations.

#### 4: Create a Barrier-free and Inclusive Design Plan

Lead Implementor: City of Lakewood and ADA Transition Task Force

Time frame: Long-term

Status: Ongoing

This plan will outline a strategy contingent upon the recommendations in the 2023 Lakewood Self-Evaluation and ADA Transition Plan, the feedback received from the ADA survey, and issues covered in the City's ADA Task Force meetings. The plan will examine all sidewalks, curb ramps, and crosswalks to ensure they comply with Americans with Disabilities Act (ADA) standards. This plan should prioritize locations according to input from the community based on their access to schools, parks, medical facilities, business districts, and places with high concentrations of older adults.

#### 5: Establish a Bicycle-Friendly Business Program

Lead Implementor: City of Lakewood

Time frame: Medium-term

Status: Ongoing

Establish a Bicycle Friendly Business program to encourage active transportation to local businesses and build support amongst business programs. Incentivize business owners to participate by providing bike racks (as Lakewood already does), repair stations, hosting bicycle events at their businesses, and highlighting Bicycle Friendly Businesses on signage and the City's website. Businesses participating in bicycle friendly businesses often display a sign provided by the program that states they are a bicycle friendly business.

#### 6: Establish a Bike Library Program

Lead Implementor: City of Lakewood

Time frame: Long-term

Status: New

Many people lack access to bikes. Work with bike shops, hospitals, and charities to provide free or affordable bicycles, e-bikes, cargo bikes, and trikes or other adaptive devices. Explore developing a bike library where bikes can be checked out or a bike and gear giveaway program for low-income community members, to foster a culture of safe riding practices.

#### 7: Implement active transportation encouragement and education programs

Lead Implementor: City of Lakewood and Bike Lakewood

Time frame: Medium-term

Status: New

Support public education and outreach initiatives aimed at giving Lakewood residents the information, skills, and practical experience to take advantage of existing and future active transportation infrastructure. Recommended strategies for Lakewood include:

- Work with local media to support and highlight existing community-led activities such as the Lakewood Garden Walk.



Figure 41. Example Bike-Friendly Business program logo (Bike Portland)

- Develop a Transportation Buddy Program in partnership with Bike Lakewood that provides community members with individualized assistance for transit, bicycle, or multimodal trip planning. Transportation Buddies may also provide training rides for first-time bicycle commuters.
- Include Bike Rodeo Programming at local events (e.g., Lakewood Community Festival) to teach parents and kids about bike safety and build biking confidence. Coordinate with the Lakewood Human Services Department to provide bike rodeo programming.

**8: Implement monthly or quarterly walking and biking events for older adults**

*Lead Implementor: City of Lakewood and Bike Lakewood*

*Time frame: Medium-term*

*Status: New*

Host organized events focused on using active transportation. This could include events, such as themed walking tours to encourage walking in different parts of the city, how we roll rides, and bike month events. Events could highlight city history, local businesses, or local parks. Consider coordinating with Cove Community Center and other local agencies that provide support to older adults.

**9: Coordinate increased enforcement of motorists that unlawfully park, load, or unload in bikeways**

*Lead Implementor: City of Lakewood Department of Police*

*Time frame: Short-term*

*Status: Ongoing*

Coordinate with law enforcement to increase monitoring, enforcement, and ticketing of motorists that obstruct bikeways by parking, loading, or unloading illegally. Provide increase penalties for repeat offenders. Ensure increased enforcement efforts are implemented equitably across the city, with special attention to not contribute to over-policing of neighborhoods with high populations of vulnerable citizens.



# PRIORITY PROJECTS





Figure 42. Cyclist riding in Lakewood (Source: [Dale Scherfling Flickr](#))

## PRIORITY PROJECTS

The infrastructure recommendations in the previous chapter are conceptual routes, meant to show the potential of a comprehensive active transportation system Lakewood. The recommendations are planning level in scope and are not necessarily constrained by existing challenges. Funding, land use, property rights, terrain, and other project specific factors may make certain recommendations less practicable than others. Project prioritization uses measurable data to determine which projects are both feasible, given real-world constraints, and align with stakeholders’ priorities.

## PRIORITIZATION METHODOLOGY

Table 9 summarizes the method that was used to prioritize the identified projects for implementation. The full methodology can be found in Appendix E: Prioritization Methodology.

Eleven project recommendations were added to this ATP in February 2024 based on stakeholder and public input received at the Stakeholder Meeting #5 and City Council Safety Committee Meeting. Since these projects were added after prioritization had been conducted, they are not included in the prioritization below. This includes route project 8 and spot projects 8, 10, 35, 59, and 65 – 70.

**Table 9. Project Prioritization Methodology**

Category	Weight	Description	Variables
<b>Proximity to point of interest</b>	20	Considers if a project is close to points of interests that generate active transportation activity.	Schools
			Libraries
			Parks
			Business clusters
<b>Equity</b>	20	Considers if a project is in a historically disadvantaged community.	USDOT SS4A Historically Disadvantaged Communities
<b>Safety &amp; Comfort</b>	20	Weighted safety and comfort scores among the street segments which make up a project.	2017-2021 bicycle and pedestrian crash history

Category	Weight	Description	Variables
Plan & Project Synergy	15	Considers if a project was previously identified by Lakewood in an existing planning effort.	High-Risk Network
			Level of Traffic Stress (BLTS of PxLTS)
			Community Confluence Plan, Lake Road-Clifton Boulevard Corridor Improvements Study, and ODOT District Work Plan
			Lakewood Capital Improvement Budget
Network Connectivity	10	Considers if a project expands or connects the active transportation network within Lakewood or to the greater region.	Pavement condition rating
			To existing bicycle facilities
			To other jurisdictions
Community Input	10	Factors in stakeholder input and public feedback from the online map.	Stakeholder engagement
			Public engagement
Cost	5	Relative cost of facility recommendation	Relative cost (high, medium, low)

## PRIORITIZED INFRASTRUCTURE PROJECT LIST

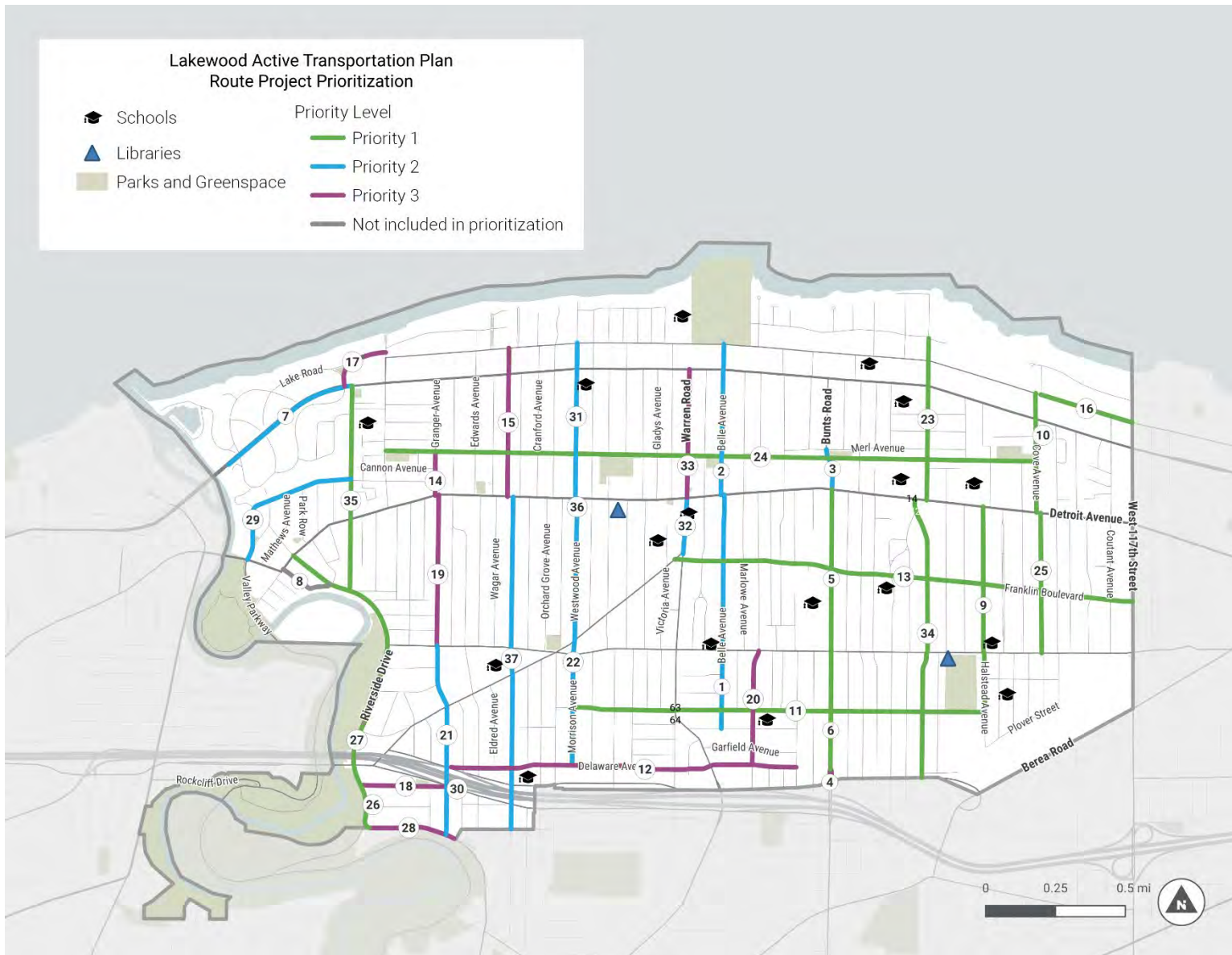
Implementing this plan will take time and significant effort. The following tables identify Priority 1, Priority 2 and Priority 3 level projects. Implementation will require working with a larger number of partners, as well as building public support for priority projects. Whenever possible, recommendations in this plan should be incorporated into other roadway projects. Every year Lakewood should re-evaluate the priority list to track which projects have been implemented and to make adjustments as needed.

Prioritization for route projects and intersection projects was assessed separately. Figure 43 and Figure 44 and Table 10 and Table 11 show the prioritized active transportation projects.

**Table 10. Prioritized Infrastructure Project List - Routes**

Project ID	Roadway	Project Extents	Facility Type	Priority Level
13	Franklin Ave	Hilliard Rd to West 117th St	Buffered bike lane	Priority 1
24	Railroad Path	Cove Ave to Webb Rd	Shared use path	Priority 1
9	Cohasset Ave / Halstead Ave	Detroit Ave to Athens Ave	Bike boulevard	Priority 1
5	Bunts Rd	Detroit Ave to Madison Ave	Shared use path	Priority 1
10	Cove Ave	Lake Rd to Detroit Ave	Bike boulevard	Priority 1
25	Ridgewood Ave	Detroit Ave to Madison Ave	Bike boulevard	Priority 1
34	Waterbury Rd	Detroit Ave to Lakewood Heights Blvd	Bike boulevard	Priority 1
23	Nicholson Ave	Edgewater Rd to Detroit Ave	Bike boulevard	Priority 1

Project ID	Roadway	Project Extents	Facility Type	Priority Level
26	Riverside Dr	Hilliard Blvd to Rocky River Dr	Shared use path or buffered bike lane	Priority 1
6	Bunts Rd	Madison Ave to ~Lakewood Heights Blvd	Shared use path	Priority 1
11	Delaware Ave	Morrison Ave to Halstead Ave	Bike boulevard	Priority 1
16	Lake Rd	Cove Ave to West 117th St	Shared use path	Priority 1
27	Riverside Dr	Hilliard Blvd to Detroit Ave	Shared use path or buffered bike lane	Priority 1
35	West Clifton Blvd	Clifton Blvd to Riverside Dr	Separated bike lane or shared use path	Priority 1
29	Sloane Ave	West Clifton Blvd to Detroit Ave	Buffered bike lane or bike lane	Priority 2
37	Woodward Ave	Detroit Ave to Fischer Ave	Bike boulevard	Priority 2
32	Warren Rd	Detroit Ave to Franklin Blvd	Buffered bike lane or bike lane	Priority 2
31	Summit Ave	Lake Road to Detroit Ave	Bike boulevard	Priority 2
1	Belle Ave	Detroit Ave to Bayes Ave	Bike boulevard	Priority 2
7	Clifton Blvd	West Clifton Blvd to jurisdictional boundary	Shared use path	Priority 2
3	Bunts Rd	Detroit Ave to Merl Ave	Bike boulevard	Priority 2
2	Belle Ave	Lake Rd to Detroit Ave	Bike boulevard	Priority 2
21	McKinley Ave	Madison Ave to Rocky River Dr	Bike boulevard	Priority 2
22	Morrison Ave	Madison Ave to Delaware Ave	Bike boulevard	Priority 2
30	South Marginal Dr	McKinley Ave to Ogontz Ave	Shared use path	Priority 2
36	Westwood Ave	Detroit Ave to Madison Ave	Bike boulevard	Priority 2
4	Bunts Rd	To Lakewood Heights Boulevard	Shared lane	Priority 3
20	Lincoln Ave	Madison Ave to Delaware Ave	Bike boulevard	Priority 3
28	Rocky River Dr	Riverside Drive to Ogontz Ave	Shared lane	Priority 3
33	Warren Rd	Clifton Blvd to Detroit Ave	Bike boulevard	Priority 3
14	Granger Ave	Detroit Ave to proposed railroad path (route project 24)	Bike boulevard	Priority 3
15	Hall Ave	Lake Rd to Detroit Ave	Bike boulevard	Priority 3
17	Lake Rd	Clifton Blvd to Webb Rd	Buffered bike lane or bike boulevard	Priority 3
12	Delaware Ave	Glenbury Ave to Brown Rd	Bike boulevard	Priority 3
19	Larchmont Ave	Detroit Ave to Madison Ave	Bike boulevard	Priority 3
18	Lakewood Heights Blvd	Riverside Drive to McKinley Ave	Bike boulevard	Priority 3



**Figure 43. Priority Active Transportation Projects - Routes**

*Geographic and mapping information presented in this document is for informational purposes only, and is not suitable for legal, engineering, or surveying purposes. Mapping products presented herein are based on information collected at the time of preparation. Toole Design Group, LLC makes no warranties, expressed or implied, concerning the accuracy, completeness, or suitability of the underlying source data used in this analysis, or recommendations and conclusions derived therefrom.*

**Table 11. Prioritized Infrastructure Project List – Intersections and Crossings**

Project ID	Street 1	Street 2	Recommendation	Priority Level
50	Detroit Ave	Cove Ave	Install high-visibility crosswalk markings across Detroit Avenue. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Cove Avenue. Consider installation of curb extensions and/or pedestrian refuge island.	Priority 1
52	Madison Ave	Ridgewood Ave	Install high-visibility crosswalk markings across Madison Avenue. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Ridgewood Avenue.	Priority 1
49	Detroit Ave	Thoreau Rd	Install high-visibility crosswalk markings and ADA curb ramps to cross Detroit Avenue. Consider installation of curb extensions.	Priority 1
1	Detroit Ave	Warren Rd	Install high-visibility crosswalk markings across Detroit Avenue. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Warren Road and access to Albert Einstein Academy. Consider installation of curb extensions or pedestrian refuge island.	Priority 1
24	Detroit Ave	Cohasset Ave	Install high-visibility crosswalk markings across Detroit Avenue. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Cohasset Avenue and access to Garfield Middle School. Consider installation of curb extensions.	Priority 1
20	Detroit Ave	Mars Ave	Install high-visibility crosswalk markings across Detroit Avenue. Consider installation of curb extensions and parking restrictions on crosswalk approach.	Priority 1
23	Franklin Blvd	Cohasset Ave	Install high-visibility crosswalk markings across Franklin Boulevard. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Cohasset Avenue and access to nearby schools. Consider installation of curb extensions or pedestrian refuge island.	Priority 1
15	Clifton Blvd	Nicholson Ave	Install high-visibility crosswalk markings across Clifton Boulevard. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Nicholson Avenue and access to Emerson Elementary School.	Priority 1
37	Detroit Ave	Woodward Ave	Install high-visibility crosswalk markings across Detroit Avenue. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Woodward Avenue. Consider installation of curb extensions.	Priority 1
38	Detroit Ave	Westwood Ave	Install high-visibility crosswalk markings across Detroit Avenue. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Westwood Avenue. Consider installation of curb extensions or pedestrian refuge island.	Priority 1

43	Detroit Ave	Belle Ave	Install high-visibility crosswalk markings across Detroit Avenue. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Belle Avenue. Consider installation of curb extensions or pedestrian refuge island.	Priority 1
46	Detroit Ave	Wagar Ave	Install high-visibility crosswalk markings and ADA curb ramps to cross Detroit Avenue and improve access to bus stop.	Priority 1
60	Thrush St	Robin St	Install high-visibility crosswalk markings and ADA curb ramps to cross Thrush Street and improve access to Harrison Elementary School. Consider installation of curb extensions and raised crosswalk.	Priority 1
31	Madison Ave	Northland Ave	Install high-visibility crosswalk marking and ADA curb ramps to cross Madison Avenue and improve access to Harding Middle School. Consider installation of curb extensions.	Priority 1
36	Franklin Blvd	Warren Rd	Install high-visibility crosswalk markings and consider additional safety improvements for vehicles such as hardened centerlines.	Priority 1
4	Madison Ave	Hilliard Rd	Install high-visibility crosswalks at all approaches. Consider installation of curb extensions and/or pedestrian refuge islands. Consider installation of LPI and bicycle detection to support existing buffered bike lane on Hilliard Road.	Priority 1
16	Madison Ave	Cohasset Ave	Install high-visibility crosswalk markings across Madison Avenue. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Cohasset Avenue and access to nearby schools.	Priority 1
51	Franklin Blvd	Waterbury Rd	Install high-visibility crosswalk markings across Franklin Boulevard to support recommended bicycle boulevard project on Waterbury Road. Consider installation of curb extensions or pedestrian refuge island.	Priority 1
19	Detroit Ave	Cordova Ave	Install high-visibility crosswalk markings across Detroit Avenue.	Priority 1
33	Madison Ave	Arthur Ave	Install high-visibility crosswalk marking and ADA curb ramps to cross Madison Avenue. Consider installation of curb extensions.	Priority 1
53	Madison Ave	Brown Rd	Install high-visibility crosswalk marking and ADA curb ramps to cross Madison Avenue and improve access to Lakewood High School. Consider installation of curb extensions and parking restrictions at crosswalk approach and/or raised crossing.	Priority 1
54	Madison Ave	Baxterly Ave	Install high-visibility crosswalk marking and ADA curb ramps to cross Madison Avenue. Consider installation of curb extensions.	Priority 1
3	Madison Ave	Warren Rd	Install high-visibility crosswalk markings across Madison Avenue. Consider installation of LPI and curb extensions to improve access to bus stop and nearby private school.	Priority 2
21	Detroit Ave	Cranford Ave	Install high-visibility crosswalk markings and ADA curb ramps to Detroit Avenue and improve access to bus stop. Consider parking restrictions on crosswalk approach.	Priority 2

30	Hilliard Rd	Woodward Ave	Install high-visibility crosswalk markings across Madison Avenue to improve access to Harding Middle School. Consider installation of curb extensions.	Priority 2
48	Detroit Ave	Giel Ave	Install high-visibility crosswalk markings and ADA curb ramps to cross Detroit Avenue. Consider installation of in-street pedestrian crossing sign.	Priority 2
2	Detroit Ave	Bunts Rd	Install high-visibility crosswalk markings across Detroit Avenue. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Bunts Road and access to nearby schools. Consider installation of curb extensions or pedestrian refuge island.	Priority 2
7	Madison Ave	Atkins Ave	Install high-visibility crosswalk markings and ADA curb ramps to cross Madison Avenue and improve access to Harding Middle School. Consider installation of Rectangular Rapid-Flashing Beacon (RRFB) or Pedestrian Hybrid Beacon (PHB) and raised crossing.	Priority 2
9	Madison Ave	Bunts Rd	Install high-visibility crosswalk markings across Madison Avenue. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Bunts Road and access to Lakewood High School. Consider installation of curb extensions.	Priority 2
11	Franklin Blvd	Blossom Park Ave	Install high-visibility crosswalk markings across Franklin Boulevard to improve access to bus stop and Lakewood High School. Consider installation of curb extension or pedestrian refuge island.	Priority 2
34	Detroit Ave	Granger Ave	Install high-visibility crosswalk markings across Detroit Avenue. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Granger Avenue. Consider installation of curb extensions.	Priority 2
41	Clifton Blvd	Lake Rd	Install roundabout in accordance with recommendations from Lake Road-Clifton Boulevard Corridor Improvement Study.	Priority 2
63	Athens Ave	Warren Rd	Install high-visibility crosswalk markings across Athens Avenue. Consider LPI and bicycle detection to support recommended bicycle boulevard project on Athens Avenue.	Priority 2
5	Madison Ave	Wagar Ave	Install high-visibility crosswalk markings across Madison Avenue to improve access to bus stop and Harding Middle School. Consider installation of curb extension or pedestrian refuge island.	Priority 2
45	Detroit Ave	Spring Garden Ave	Install high-visibility crosswalk markings and ADA curb ramps to cross Detroit Avenue. Evaluate signal timing.	Priority 2
6	Detroit Ave	West Clifton Blvd	Install high-visibility crosswalk markings across Detroit Avenue. Consider installation of LPI and bicycle detection to support recommended bicycle facility on West Clifton Blvd and access to Horace Mann. Consider installation of curb extensions.	Priority 2
13	Detroit Ave	Nicholson Ave	Install high-visibility crosswalk markings across Detroit Avenue. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Nicholson Avenue and access to Lakewood High School. Consider installation of curb extensions or pedestrian refuge island.	Priority 2

14	Detroit Ave	Waterbury Rd	Install high-visibility crosswalk markings and ADA curb ramps to cross Detroit Avenue and improving access to nearby schools.	Priority 2
22	Madison Ave	Victoria Ave	Install high-visibility crosswalk markings across Madison Avenue. Consider parking restrictions at crosswalk approach or curb extensions.	Priority 2
25	Clifton Blvd	West 117th St	Install high-visibility crosswalk markings at all approaches. Consider curb extensions and/or pedestrian refuge island.	Priority 2
47	Detroit Ave	Blossom Park Ave	Consider installation of curb ramps to improve pedestrian visibility. Incorporate signage for bicycle use of HAWK beacon.	Priority 2
58	Rocky River Dr	Riverside Dr	Install high-visibility crosswalk markings and crossing improvements identified in Community Confluence Plan.	Priority 2
12	Franklin Blvd	Bunts Rd	Install high-visibility crosswalk markings across Franklin Boulevard. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Bunts Road and access to Lakewood High School. Consider installation of curb extensions or pedestrian refuge island.	Priority 2
17	Clifton Blvd	Belle Ave	Install high-visibility crosswalk markings across Clifton Boulevard. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Belle Avenue. Evaluate if increased crossing time is needed.	Priority 2
28	Clifton Blvd	Whippoorwill Ave	Install pedestrian-activated crossing - consider PHB - high-visibility crosswalk markings, and ADA curb ramps to support access to Taft Center for Innovation.	Priority 2
32	Lake Rd	Cook Ave	Install high-visibility crosswalk markings across Franklin Boulevard to improve access to Lakewood Catholic Academy. Consider installation of LPI.	Priority 2
44	Detroit Ave	Graber Dr	Consider installation of bicycle detection to improve access to nearby regional trail.	Priority 2
56	Hilliard Rd	McKinley Ave	Install high-visibility crosswalk markings at all approaches. Consider installation of curb extensions.	Priority 2
57	Hilliard Blvd	Riverside Dr	Install high-visibility crosswalk markings and crossing improvements identified in Community Confluence Plan.	Priority 2
64	Arden Ave	Alger Rd	Install high-visibility crosswalk markings at all approaches. Consider curb extensions.	Priority 2
26	Clifton Blvd	Cove Ave	Install high-visibility crosswalk markings across Clifton Boulevard. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Cove Avenue. Evaluate if increased crossing time is needed.	Priority 3
27	Clifton Blvd	Bunts Rd	Install high-visibility crosswalk markings across Clifton Boulevard. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Bunts Road and access to bus stop.	Priority 3

18	Clifton Blvd	Summit Ave	Install high-visibility crosswalk markings across Clifton Boulevard. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Summit Avenue and access to Lincoln Elementary School.	Priority 3
39	South Marginal Dr	McKinley Ave	Install high-visibility crosswalk marking across South Marginal Drive. Consider installation of curb extensions.	Priority 3
61	North Marginal Dr	McKinley Ave	Install high-visibility crosswalk marking across North Marginal Drive. Consider installation of curb extensions.	Priority 3
40	Clifton Blvd	Hall Ave	Install pedestrian-activated crossing - consider - high-visibility crosswalk markings, and ADA curb ramps to support recommended bicycle boulevard project on Hall Avenue.	Priority 3
55	Delaware Ave	Woodward Ave	Install high-visibility crosswalk markings across Delaware Avenue. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Delaware Avenue and access to Hayes Elementary School. Consider installation of curb extension and pedestrian refuge island.	Priority 3
62	Delaware Ave	Carabel Ave	Install high-visibility crosswalk markings across Delaware Avenue to improve access to Hayes Elementary School. Consider installation of curb extension and pedestrian refuge island.	Priority 3
42	Lewis Dr	Waterbury Rd	Consider installation of a mini roundabout to address multimodal conflicts.	Priority 3
29	Athens Ave	Lincoln Ave	Install high-visibility crosswalk markings across Athens Avenue. Consider installation of LPI and bicycle detection to support recommended bicycle boulevard project on Athens Avenue and access to Roosevelt Elementary School.	Priority 3



# IMPLEMENTATION





**Figure 45. Cyclist on Lake Avenue bike lane**

# IMPLEMENTATION

## ROLES AND RESPONSIBILITIES

Collaboration is the first step towards successful implementation of the Lakewood ATP. Stakeholders involved in the planning process will be collectively responsible for the design, funding, construction, maintenance, monitoring, and/or evaluation of the network. See Table 12 for a list of responsibilities.

**Table 12. Implementation Responsibilities**

Agency	Responsibility	Description
City of Lakewood	City-owned facilities	Adopt and publish the ATP and Action Plan
		Evaluate and submit applications for new bicycle and pedestrian facilities (NOACA funding / SRTS / HSIP / SS4A etc.).
		Evaluate and submit applications for bicycle and pedestrian non-infrastructure projects (SRTS / NOACA funding / etc.).
		Design, build, and maintain recommended bicycle and pedestrian facilities on City-owned roadways.
		Implement recommended policies and programs within Lakewood City Schools and across the City.
		Collaborate with adjacent jurisdictions and relevant agencies (City of Cleveland, City of Rocky River, Cuyahoga County, NOACA, ODOT) to ensure a continuous system for users.
ODOT	State-owned facilities	Incorporate bicycle and pedestrian facilities and intersection improvements into state and U.S. highways. Support implementation of local projects through technical resources and funding.
Bike Lakewood and Lakewood City Schools	N/A	Support implementation of recommended policies and programs through technical assistance and staff/volunteer time.

# FUNDING STRATEGIES

Active transportation projects comprise a fraction of overall transportation network construction and maintenance. While pedestrian and bicycle infrastructure generally does not serve as many users as highways, bridges, and other critical infrastructure, it can have a substantial positive effect on local economies. Additionally, providing opportunities for active living promotes public health and may reduce the burden on tax-payer funded healthcare systems over time. In this light, active transportation infrastructure is a critical component of a complete transportation network and results in a positive return on investment for communities that fund such projects.

Several state and federal funding sources can be used to supplement local funding sources to build out the active transportation network and fund related programming efforts. Table 13 lists the primary funding sources for active transportation projects in Ohio; click on the name of each funding source to access web pages with further information. Communities may use this tool to search for additional potential funding sources to support infrastructure and non-infrastructure projects that advance walking and bicycling. As part of the statewide Walk.Bike.Ohio Plan, ODOT published a [Funding Overview Report](#) that provides more details on types of funding available, schedules, and eligibility requirements. For information on funding for public transit, visit the [ODOT Office of Transit’s website](#).

**Table 13. Primary Active Transportation Funds in Ohio**

Funding Source	Distributed by	Eligible Project Examples	Eligible Project Sponsor
<a href="#">Transportation Alternatives</a>	NOACA	Bicycle & pedestrian facilities Safe routes for non-drivers Conversion & use of abandoned railroad facilities Overlooks & viewing areas	Local governments
<a href="#">Safe Routes to School</a>	ODOT	Infrastructure Non-Infrastructure School Travel Plan assistance	Local governments (infrastructure) Local governments, school or health district, or non-profit (non-infrastructure)
<a href="#">Highway Safety Improvement Program</a>	ODOT (Coordinate with local ODOT District to submit a safety study)	Signalization Turn lanes Pavement markings Traffic signals Pedestrian signals/crosswalks Bike lanes Road diets	Local governments
<a href="#">Recreational Trails Program</a>	Ohio Department of Natural Resources (ODNR)	New recreational trail construction Trail maintenance/restoration Trailside and trailhead facilities Purchase/lease of construction & maintenance equipment Acquisition of easements Educational programs	Local governments State and federal agencies Park districts Conservancy districts Soil and water conservation districts Non-profits
<a href="#">Clean Ohio Trails Fund</a>	ODNR	New trail construction Land acquisition for a trail Trail planning/engineering and design (must include construction)	Local governments Park districts Conservancy districts Soil and water conservation districts

			Non-profits
<a href="#"><u>Clean Ohio Green Space Conservation Program</u></a>	Ohio Public Works Commission (OPWC)	Open space acquisition including easements Bike racks Kiosks/Signs Hiking/Biking trails Pedestrian bridges Boardwalks	Local governments Park districts Conservancy districts Soil and water conservation districts Non-profits



# MAINTENANCE STRATEGIES

The long-term performance of bicycle and pedestrian networks depends on both the construction of new facilities and an investment in continued maintenance. Maintaining bicycle and pedestrian facilities is critical to ensuring those facilities are accessible, safe, and functional.

## FREQUENCY

The first step to approaching maintenance is to understand how often maintenance should be performed. Many activities, such as signage updates or replacements, are performed as needed, while other tasks such as snow removal are seasonal (Table 14). Creating a winter maintenance approach is important to encourage year-round travel by walking and biking. One key component of this approach should be identifying priority routes for snow removal. More information on winter maintenance such as types of equipment needed for different facility types and how to consider snow removal in the design of facilities can be found in [Toole Design's Winter Maintenance Resource Guide](#).

**Table 14: Maintenance Activity Frequency**

Frequency	Facility Type	Maintenance Activity
As Needed	Shared Use Paths	Tree/brush clearing and mowing
		Replace/repair trail support amenities (parking lots, benches, restrooms, etc.)
		Map/signage updates
		Trash removal/litter clean-up
		Repair flood damage: silt clean-up, culvert clean-out, etc.
	Patching/minor regrading	
Shared Use Paths/ Separated Bike Lanes / Paved Shoulders/ Bike lanes	Sweeping	
Bicycle Boulevards	Sign replacement	
Sidewalks	Concrete panel replacement	
Seasonal	All	Snow and Ice control
	Shared Use Paths	Planting/pruning/beautification
		Culvert/drainage cleaning and repair
		Installation/removal of seasonal signage
Yearly	Shared Use Paths/ Sidewalks	Evaluate support services to determine need for repair/replacement
		Perform walk audits to assess ADA compliance of facilities
	Separated Bike Lanes / Paved Shoulders/ Bike lanes	Surface evaluation to determine need for patching/regrading/re-stripping of bicycle facilities
5-year	Shared Use Paths	Repaint or repair trash receptacles, benches, signs, and other trail amenities, if necessary
		Sealcoat asphalt shared use paths

Frequency	Facility Type	Maintenance Activity
10-year	Shared Use Paths	Resurface/regrade/re-stripe shared use paths
20-year	Shared Use Paths/ Sidewalks	Assess and replace/reconstruct shared use paths/ sidewalks

## PLAN FOR MAINTENANCE

Creating a strong maintenance program begins in the design phase. The agency that will eventually own the completed project should collaborate with partners to determine the infrastructure placement, final design, and life cycle maintenance cost. Maintenance staff should help identify typical maintenance issues, such as areas with poor drainage or frequent public complaints. They may have suggestions for design elements that can mitigate these issues or facilitate maintenance activities and can provide estimates for ongoing maintenance costs for existing and proposed facilities.

## COORDINATION & RESPONSIBILITY BETWEEN AGENCIES

Many jurisdictions struggle with confusion around which entity – city, village, township, county, or state – is responsible for the maintenance of trails and other active transportation facilities. Frequently there is no documentation showing who is responsible for maintenance of existing facilities, which can prolong unsafe conditions for trail users. Coordination between the government agencies is key for effective maintenance programs. Intergovernmental agreements (IGAs) are used to codify the roles and responsibilities of each agency regarding ongoing maintenance. For example, a local government may agree to conduct plowing, mowing, and other maintenance activities on trails in its jurisdiction that were built by another agency. Clarifying who is responsible for maintenance costs and operations ensures that maintenance problems are resolved in a timely manner.

## MAINTENANCE ACTIVITIES

Different facility types require different types of strategies to be maintained. Table 15 breaks down maintenance activities and strategies for each by facility type.

**Table 15: Maintenance Strategy Recommendations**

Facility Type	Maintenance Activity	Strategy
Shared Use Paths/ Separated Bike Lanes	Pavement Preservation	Develop and implement a comprehensive pavement management system for the shared use path network.
	Snow and Ice Control	Design shared-use paths to accommodate existing maintenance vehicles.
	Drainage Cleaning/Repairs	Clear debris from all drainage devices to keep drainage features functioning as intended and minimize trail erosion and environmental damage.
		Check and repair any damage to trails due to drainage issues.
	Sweeping	Implement a routine sweeping schedule to clear shared-use paths of debris.
		Provide trail etiquette guidance and trash receptacles to reduce the need for sweeping.
Vegetation Management	Implement a routine vegetation management schedule to ensure user safety.	

		Trim or remove diseased and hazardous trees along trails.
		Preserve and protect vegetation that is colorful and varied, screens adjacent land uses, provides wildlife habitats, and contains prairie, wetland and woodland remnants.
	ADA Requirements	Conduct walk and bike audits to assess accessibility of new, proposed, and existing shared-use paths.
		Ensure that ADA compliance is incorporated into the design process for new facilities.
Paved Shoulders/ Bike Lanes	Pavement Markings	Explore approaches to routinely inspect pavement markings for bicycle infrastructure and replace as needed.
		Consider preformed thermoplastic or polymer tape on priority bikeways (identified in this Plan) adjacent to high-volume motor vehicle routes (preformed thermoplastic or polymer tape are more durable than paint and requires less maintenance).
	Snow and Ice Control	Clear all signed or marked shoulder bicycle facilities after snowfall on all state-owned facilities that do not have a maintenance agreement with a local governmental unit in place.
	Sweeping	Implement a routine sweeping schedule to clear high-volume routes of debris.
Bicycle Boulevards	Sign Replacement	Repair or replace damaged or missing signs as soon as possible.
Sidewalks	Pavement Preservation and Repair	Conduct routine inspections of high-volume sidewalks and apply temporary measures to maintain functionality (patching, grinding, mud jacking).
		Consider using public agency staff or hiring contractors for sidewalk repairs, rather than placing responsibility on property owner (property owner can still be financially responsible).
	Snow and Ice Control	Educate the public about sidewalk snow clearance.
		Require sidewalk snow clearance to a width of five feet on all sidewalks.
		Establish required timeframes for snow removal.
	Implement snow and ice clearing assistance programs for select populations.	

## ON-GOING MONITORING AND EVALUATION

Measuring the performance of active transportation networks is essential to ongoing success. Bicycle and pedestrian counts, crash records, and other data contribute to a business case for continued improvement of and investment in multimodal infrastructure. As recommendations are implemented, Lakewood must be able to measure whether these investments are paying active transportation dividends (i.e., safer outcomes for people walking and biking). An affirmative answer reinforces this Plan’s legitimacy and provides evidence that future investments will also yield positive results. The performance measures in Table 16 have will chart progress towards making walking and bicycling safe, connected, and comfortable. Lakewood should establish baseline targets and revisit these metrics as new plans and priorities occur. Data on these measures should be documented and published for public review annually. A robust performance measures program includes establishing baseline measurements, performance targets, data collection frequency, and data collection and analysis responsibility.

**Table 16. Performance measures**

Goal	Performance Measure	Responsible Agency	Timeline (how often is data collected/ updated)
<i>Safety</i>	Number of intersection improvements implemented.	City of Lakewood	Annually
	Number of Safe Routes to School infrastructure countermeasures by school year.	City of Lakewood	
	Average vehicle speed on proposed project corridors.	City of Lakewood	
	Number of bicycle and pedestrian crashes.	ODOT	
<i>Equity</i>	Number of ATP recommendations implemented in historically marginalized communities.	City of Lakewood	
	Number of ADA curb ramps and accessible crossing signals implemented.	City of Lakewood	
	Number of facilities in “good” conditions.	City of Lakewood	
<i>Connectivity</i>	Number of shared-use path projects built.	City of Lakewood	
	Number of on-street bicycle facility projects built.	City of Lakewood	
	Number of projects implemented that connect to existing network.	City of Lakewood	
<i>Livability</i>	Number of projects implemented within ¼ mile of schools, libraries, parks, and business clusters.	City of Lakewood	
	Number of commuters that use active transportation.	US Census	
	Number of students that use active transportation.	Lakewood City Schools	
	Number of facilities with routine maintenance.	City of Lakewood	